# Haselden Construction Safety Program

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1.0 Purpose

1.1 Haselden Construction's overall goal is to implement effective erosion and sediment control, in addition to good on-site housekeeping practices, as a standard for all land-disturbing activities. We are committed to protecting water resources and ensuring that future development continues in an environmentally sound manner.

2.0 Scope

2.1 This procedure describes the minimum requirements of the Haselden “Environmental Management Program” and the processes subcontractors should have in place to minimize/prevent incidents that has the potential to adversely affect the environment.

3.0 Definitions

4.0 Reference Documents

4.1 EPA Construction Industry Compliance Assistance Center
4.2 OSHA Publication - A Guide to The Globally Harmonized System of Classification/Labeling of Chemicals (GHS)
4.3 OSHA Publication - Guidance For Hazard Determination
4.4 29 CFR 1926.65 and Related Appendices – Hazardous Waste Operation and Emergency Response
4.5 OSHA Incident Command System – Environment Unit Leader
4.6 HASELDEN – HSE Auditing And Behavior–Based Safety Observations Processes
4.7 HASELDEN – Hazard Communication

5.0 Responsibilities

5.1 Environmental Coordinator – The Haselden person designated as having the on-site responsibility and authority for seeing that all parts of the Environmental Management System are implemented and followed on a given Project.

6.0 Implementation
6.1 Policy And Management Commitment

6.1.1 The subcontractors will provide Haselden a copy of their company’s written environmental policy and/or procedure. This policy and procedures should outline and include their company’s:

6.1.1.1 Commitment to being a responsible environment steward
6.1.1.2 Processes they have in place that demonstrates their commitment to minimizing/eliminating conditions/incidents that has the potential to adversely affect the environment, including steps that will be taken to:

6.1.1.2.1 Control/mitigate environmental excursions and,
6.1.1.2.2 Protect wildlife that may be protected.

6.1.1.3 Processes for ensuring compliance with Haselden, local, state and federal with regulations and
6.1.1.4 Promoting sustainability.

6.1.2 The subcontractor will provide a written statement:

6.1.2.1 Describing the accountabilities and responsibilities of each level of its management structure around environmental management.
6.1.2.2 That clearly and specifically address the environmental accountabilities and responsibilities of its people assigned to the Haselden.

6.1.3 CoP onsite management team will ensure the provisions in this document are also adhered to by all Haselden employees and subcontractors under the direct supervision of CoP.

6.2 Environmental Coordinator

6.2.1 Haselden management teams will designate one member of its project management team as the Environmental Coordinators for the project.

6.2.2 The Environmental Coordinators for each respective company will be the "single point of contact" for their company, their employees, and for regulatory agencies regarding Project environmental issues.

6.2.3 The Haselden onsite construction manager may sever as the environmental coordinator or assign the responsibility to another Haselden employee.

6.3 Written Environmental Program

6.3.1 The subcontractor written environmental program will address environmental controls and waste minimization and management.

6.3.1.1 The program will address controlling adverse impact on the following:

6.3.1.1.1 Air
6.3.1.1.2 Vehicular Pollution.
6.3.1.1.3 Dust generation and control.
6.3.1.1.1.3 Smoke (controlled burning, etc.).

6.3.1.1.2 Water

6.3.1.1.2.1 Hydrocarbon spills.
6.3.1.1.2.2 Storm water runoff, including use and maintenance of silt traps.
6.3.1.1.2.3 Hydro test water (uncontaminated) disposal
6.3.1.1.2.4 Aquifer protection, including but not limited to:
   6.3.1.1.2.4.1 Identifying potential construction impacts to the aquifer (e.g. drilling, coring, excavation, etc.) and
   6.3.1.1.2.4.2 Describing how the aquifer will be protected from contamination.

6.3.1.1.3 Soils

6.3.1.1.3.1 Preservation of Top Soils.
6.3.1.1.3.2 Handling and disposal of excavated soils of uncontaminated soils.
6.3.1.1.3.3 Detection, handling and disposal of excavated soils that may be contaminated.

6.3.1.1.4 Construction Wastes

6.3.1.1.4.1 Excavated waste concrete.
6.3.1.1.4.2 Excavated piping, tanks, etc.
6.3.1.1.4.3 Concrete truck wash-out and new concrete waste.
6.3.1.1.4.4 Wood, paper, and plastics.
6.3.1.1.4.5 Metals, including ferrous (iron) and non-ferrous (non-iron).
6.3.1.1.4.6 Mill scale.
6.3.1.1.4.7 Insulation.
6.3.1.1.4.8 Aerosol cans:
   6.3.1.1.4.8.1 The use of spray paint cans should be minimized.
   6.3.1.1.4.8.2 Spray will be empty before disposal (If can is plugged, replace the spray button and try to discharge the contents).
   6.3.1.1.4.8.3 Will be collected and segregated in a central area.
   6.3.1.1.4.8.4 Must be safely de-pressured, converting them to non-hazardous waste.
   6.3.1.1.4.8.5 De-pressured can will be placed in a metal recycled container.
   6.3.1.1.4.8.6 Collected propellant and residual material will be disposed of according to local, state and/or federal requirements.
6.3.1.4.9 Oils, Fuel and Hydraulic Fluids.

6.3.1.4.9.1 Paint and solvent waste will collected, transferred to a central hazardous waste area by the end of each shift and segregated according to its hazard class.

6.3.1.4.9.2 Liquid paint wastes should be kept in separate drums from solid paint wastes, unless specified otherwise by the environmental coordinator or his/her designee.

6.3.1.4.9.3 Empty or partially empty paint containers will be cleaned prior to disposal.

6.3.1.4.9.4 Residual paint and rinsed material from paint cans will be collected in designate drum and removed from site and manifested according to local, state and federal requirements.

6.3.1.4.9.5 Empty paint containers/cans that have been cleaned may be disposed of in a metal recycling bin.

6.3.1.4.9.6 Drums that contained solvent drums will be drained of all liquids.

6.3.1.4.9.7 Cleaned solvent containers may be disposed in the metal recycle bin.

6.3.1.5 Sanitary Wastes

6.3.1.5.1 Food wastes.

6.3.1.5.2 Medical and/or biohazard wastes.

6.3.1.5.3 Human and animal wastes.

6.3.1.2 The Haselden Environmental Management Program will address the management of waste materials and will include as needed:

6.3.1.2.1 Identification of wastes and the process for identifying the waster.

6.3.1.2.2 Protocols for handling, segregating and storage of wastes,

6.3.1.2.3 Managing the accumulation containers for wastes, which includes:

6.3.1.2.3.1 Labeling the containers and maintaining records that may be required by Haselden and/or local, state or federal authorities.

6.3.1.2.3.2 Type (materials of construction).

6.3.1.2.3.3 Size of container and storage location.

6.3.1.2.3.4 Maintenance.

6.3.1.2.3.5 Collection schedule.

6.3.1.3 The environmental program will also outline the process/protocols that will be used to:
6.3.1.3.1 Record/document controlling and managing environmental issues including waste that is generated,
6.3.1.3.2 Recycling program used to minimize waste,
6.3.1.3.3 Transportation and disposal of waste,
6.3.1.3.4 Qualification and auditing process for waste disposal subcontractors and,
6.3.1.3.5 Provide Haselden copies of the environmental records/document generated throughout the project.

NOTE: The Haselden onsite environmental coordinator will ensure these documents are maintained according to Haselden Record Retention Procedure.

6.4 Training

6.4.1 The subcontractor will have an environmental training program. As a minimum this will include:

6.4.1.1 Providing employees’ with the information and skills needed to complete his/her tasks in an environmentally-responsible way, including waste minimization.
6.4.1.2 Maintaining training records onsite and will be available to Haselden upon request for auditing purposes.

6.4.2 The subcontractors will ensure:

6.4.2.1 All employees, including sub-contractors of sub-subcontractors (sub-sub contractors), etc., are trained to perform that work in an environmentally-responsible way.
6.4.2.2 Auditable training records of “Sub” and “Sub-sub” training are available and provided to Haselden upon request.

6.4.3 Haselden site environmental coordinator will ensure all Haselden consultants are trained and training records and documents are maintained according to Haselden policies and procedures.

6.5 Auditing

6.5.1 Subcontractors HSE program will address and include periodic auditing of their employees, including sub-subcontractors and sub-subcontractors of sub, etc., environmental performance, environmental stewardship and compliance with the Environmental Management Program.

6.5.2 All audit findings, including audits of Haselden and subcontractor/sub-subcontractor environmental programs will be communicated to the Haselden Manager and managed/maintained as outlined in the Haselden “HSE Auditing And Behavior–Based Safety Observations Processes”.

7.0 Attachments:
1.0 Purpose

1.1 This program describes minimum standard operating procedures for the prevention and mitigation of erosion and storm water runoff at all Haselden Construction (HC) jobsites. Its purpose is to prevent the effects of unintended erosion and storm water runoff and to describe a procedure for control & mitigation of potential damage if it does occur.

1.2 The Project Manager is designated as the program administrator. Project managers will have responsibility for implementing, updating, and oversight of the following procedure, performing compliance audits, and maintaining required records.

2.0 Scope

2.1 This procedure will apply to all HC projects where the project is determined to be larger than one acre of site or the buildings physical size and or footprint, this includes all new and renovation projects.

2.2 This procedure will apply to all HC projects outside of Colorado. All projects will address the Environment Protection Agency (EPA), state and local municipalities’ requirements that are applicable for construction site stormwater runoff, erosion control, sediment control, and required Best Management Practices (BMPs).

2.3 These procedures are designed to address Phase II EPA (Environmental Protection Agency) and CDOT (Colorado Department of Transportation) and local municipalities (where applicable) requirements for construction site stormwater runoff. and offer specifics in each of the following:

2.3.1 Pre-Construction Phase

2.3.2 Construction Phase

2.3.3 Post Construction Phase

2.4 These procedures will apply to all HC projects, whereas all projects will utilize the Uniform Stormwater Management System (USMS) for preplanning, inspection preparation, record keeping, and required reporting. SWMP/SWPPP binders will be established and placed on site. All sites that require a stormwater permit will be inspected by a third party inspection company.
3.0 Definitions

3.1 **SWMP/SWPPP Administrator** - specific individual(s), position or title that is responsible for developing, implementing, maintaining, and revising the SWMP. The activities and responsibilities of the administrator shall address all aspects of the facility’s SWMP/SWPPP.

4.0 Reference Documents

4.1 Colorado Department of Public Health & Environment @ www.cdphe.state.co.us/wq/PermitsUnit/index.html
4.2 EPA storm water page @ http://cfpub.epa.gov/npdes/index.cfm
4.3 CDOT @ www.coloradodot.info/programs/environmental
4.4 Urban Drainage and Flood control District @ www.udfcd.org
4.5 Uniform Stormwater Management System (USMS) @ http://haselden.compliancewise.net

5.0 Responsibilities

5.1 The SWMP/SWPPP Administrator may assign the site superintendent, general foreman or Haselden sanctioned personnel to be responsible for implementing the practices outlined within the SWMP/SWPPP. It will be their responsibility to insure the plan suitability at all times and to effectively manage potential stormwater pollutants throughout the course of construction. Additionally, the SWMP/SWPPP Administrators will be tasked with ensuring the proper implementation, operation, inspection, and maintenance of BMPs across the project site.

6.0 Implementation

6.1 Pre-Construction Key Considerations

6.1.1 Many erosion control and storm-water runoff problems can be anticipated and prevented during this phase. This will require working closely with the owner and design team. Areas to review include:

6.1.1.1 Slopes, flow lines, site logistics, waters of the state, BMPs implantation, pollution sources, traffic patterns and entrances, existing vegetation, final stabilization.

6.1.2 Site Controls:

6.1.2.1 Develop the cost model for the site-specific erosion control plan. This plan usually will be developed by the project architect or civil engineer through a qualified and licensed erosion control company.

6.2 Construction Phase

6.2.1 A complete review of the proposed erosion control plan by the project management team will be scheduled by the project manager and attended by all applicable project management team members, to
determine the scope and magnitude of the project. At this time, the following items need to be addressed:

6.2.1.1 Review of the installation sub-contractors qualifications, bonding capacity and historical regulatory compliance with the applicable city, county, and federal entities.

6.2.1.2 Establish who the responsible parties are for maintenance of, or repairs to, damaged areas or components associated with all aspects of the installed system for the duration of the project through the final stabilization of the site.

6.2.1.3 Determine who the qualified erosion control and storm water management inspector will be. This individual will be at a minimum.

   6.2.1.3.1 Salaried individual or approved qualified trained personnel.
   6.2.1.3.2 A card-carrying erosion control inspector appropriately trained by a qualified, approved trainer in erosion control and wastewater management.
   6.2.1.3.3 Ensure you have a backup inspector in case of absences, vacations, job conflicts, etc.

6.2.1.4 Pull all appropriate and required city, county, state or federal permits. Perform all required inspections and supply copies of said inspections on a monthly basis to the Safety Management Department for verification of and compliance with State and Federal mandates.

6.2.1.5 Perform immediate repairs to any or all systems after a weather condition or erosion event occurs. The following are a few conditions that would qualify as events:

   6.2.1.5.1 Rain
   6.2.1.5.2 High wind conditions
   6.2.1.5.3 Snow
   6.2.1.5.4 Vehicle use or abuse of BMPs
   6.2.1.5.5 Water runoff or irrigation problems

6.2.1.6 Notify the Director of Environmental & Safety and/or the Safety Management Department in the event of any inspection by any or all government entities.

6.3 Post Construction Phase:

6.3.1 Perform final inspections and repairs to the system prior to the inspection and subsequent turn over of the site to the owner. Verify that final stabilization of the site has been completed.

6.3.2 Provide for and implement a formal Notice of Transfer to the project owner if the site work is uncompleted, unfinished or outside of the scope of the project’s written documentation.

6.3.3 Close out the Storm Water Control Permit with any and all effected entities.

6.3.4 File all documents in the project’s close out permanent file.
7.0 Attachments:

7.1 Stormwater Acronyms

7.2 USMS Guide for Performing Stormwater Inspections
AGC Uniform Stormwater Management System

Common NPDES Acronyms

BMP  Best Management Practices
CDPHE  Colorado Department of Public Health and Environment
CDPS  Colorado Discharge Permit System
CGP  Construction General Permit
CWA  Clean Water Act
EPA  Environmental Protection Agency
E & SC Plan  Erosion and Sediment Control Plan
MS4  Municipal Separate Storm Sewer System
NPDES  National Pollutant Discharge Elimination System
PS  Pollution Source
SWMP  Stormwater Management Plan (CO Only)
SWPPP  Stormwater Pollution Prevention Plan (Federal)
USMS  Uniform Stormwater Management System
WQCD  Water Quality Control Division
Advanced Stormwater Mgr. Training Course

USMS Guide for Performing Stormwater Inspections

Summary of the USMS 3-step Process

Pre-planning and Inspection Preparation
1. Complete Section 1 (cover page) of the standard inspection form, Areas 1, 2, 3, and 4
2. Complete Area 5 “Planning”. Retrieve the latest updated project schedule (3-week short interval schedule works best). Evaluate construction activities that are coming up in the next week or two and highlight or make a list of any that have the potential to impact stormwater quality. Enter the first of the highlighted activities in the table and the anticipated “start date”. Perform steps 3 through 7 before entering another activity from your list
3. Determine what potential pollution sources might be introduced by the new activity. Use the USMS Master Pollution Source List as your guide. Each pollution source should be placed in its own row in the table.
4. Review the SWPPP narrative and USMS Logs to determine if the potential pollution sources are adequately addressed. If needed, update the SWPPP written narrative and/or add USMS pollution source logs as appropriate. Every pollution source type should have its own USMS Log.
5. Determine appropriate BMPs to control each potential pollution source identified. In many cases a pollution source will require redundant BMPs to assure it is properly controlled.
6. Review the SWPPP written narrative to determine if the proposed BMPs are adequately addressed. If not, update the narrative and/or add any required USMS BMP Logs and installation details.
7. If any documentation updates can not be completed immediately, note what pending updates are still required in the far right column of Area 5. Be sure to follow up later to complete all required documentation.
(Repeat Steps 2 through 7 for each activity listed and use the USMS planning worksheet continuation pages as needed)
8. Use the USMS Documentation Checklist to confirm that the SWPPP and the CGP Application (NOI) are still complete and accurate. Redline any needed changes to the SWPPP and, as required, provide notification to the permitting authority of any changes to the project information record.

9. Update the SWPPP Site Map Working Copy to reflect any new pollution sources and BMPs noted in Area 5.

10. Update the existing USMS PS and BMP Logs and add any new PS or BMP Logs as required. Assign each new PS or BMP a unique, sequential ID Number. Insert the anticipated or actual “Date of Install”.

11. Make any final updates to the Site Map Working Copy based on the planning effort.

12. Gather the Site Map Working Copy along with a few copies of the CAL to perform the field inspection.

13. Review and check the inspection reminder lists in area 6, 7 and 8 on page one of the USMS inspection form.

**Field Inspection**

14. Start the inspection at the same location each time and walk the site on the same path.

15. Compare the Site Map Working Copy to the actual conditions observed in the field and be sure they match closely. Look for any new potential PSs that were not anticipated in the Planning phase of the weekly inspection cycle. Update, as you walk the job, the Site Map Working Copy to reflect any changes.

16. Verify the condition of all existing BMPs and PSs. Circle items on the site map working copy that require corrective actions and add them to the CAL. Place checkmarks or “OK” by items that are OK and require no further action. Place an “X” through items that have been removed or no longer pertain and note the approximate date of removal on the Site Map Working Copy.

17. Fill out the Corrective Action Log (CAL) for any findings as you go.

**Complete the Inspection Process**

18. Back at the trailer, update the PS and BMP Logs in the USMS Binder and add any missing unique identifier numbers to the Site Map Working Copy and CAL.

19. Complete repairs for ALL items on the CAL (ASAP, immediately in most cases, per the CGP requirements). To facilitate clear
communication, make copies of the Site Map Working Copy and the CAL to give to repair crews.

20. Use the Site Map Working Copy and any notes taken during the inspection to update the master site map and the SWPPP narrative in the USMS Binders.

21. Visually inspect ALL corrections to confirm completion and enter completion date in the CAL. Initial all confirmed corrections.

22. Sign and date the inspection report certification.

23. File the inspection forms and site map working copy (inspection records must be retained for 3 years after the permit is terminated). Make a working copy of the most recent SWPPP Master Site Map and add to it the other USMS inspection worksheets to create a complete package for the next weekly inspection cycle.

Repeat the process at the required interval per the SWPPP/SWMP and CGP.
1.0 Purpose

1.1 This program describes minimum standard operating procedures for the prevention and mitigation of water intrusion on all Haselden Construction jobsites. Its purpose is to prevent the effects of unintended water intrusion and to describe a procedure for mitigation when it does occur.

1.2 The Project Manager is designated as the program administrator. Project managers will have responsibility for implementing the following procedure, performing compliance audits, and maintaining required records.

2.0 Scope

2.1 This procedure will apply to all Haselden Construction projects including new and renovation projects.

2.2 These procedures are designed to address three phases of construction and offer specifics in each of the following:

2.2.1 Pre-Construction Phase

2.2.2 Construction Phase

2.2.3 Post Construction Phase

3.0 Definitions

4.0 Reference Documents

5.0 Responsibilities

5.1 Site Superintendent is responsible for implementing this program in regards to prevention and mitigation.

6.0 Implementation

6.1 Pre-Construction Key Considerations

6.1.1 Many would-be water intrusion problems can be anticipated and prevented during this phase. This will require working closely with the owner and architect. Areas to thoroughly review include:
6.1.1.1 Building Envelope: This is the primary barrier to any water intrusion. The building envelope must be continuous in order to provide a solid shield to water entry. Transition points of materials are noteworthy as is flashing. Further the design/drawings may omit important details regarding installation.

6.1.1.2 Windows and Doors: These openings can provide opportunities for water intrusion. The proper installation and application of flashings and caulking should be verified and documented. The maintenance of caulking should be review with the owner as part of the warranty process and well documented.

6.1.1.3 Vertical enclosure systems: Virtually all such systems absorb moisture or permit it to penetrate. Given that it is likely that some unwanted moisture will penetrate the system, it is necessary for designers and installers give the water some way to get back out: Specifically masonry systems should have properly installed weeps, as should glass and metal curtain wall systems. EIFS coated walls are a source of controversy and widespread water damage claims in the industry. This topic is dealt with by Haselden Construction in a separate procedure. In many parts of the country naturally high humidity and high levels of thermal condensation present a significant challenge. In such areas, concrete walls should have drip pans to gather and drain moisture.

6.1.1.4 HVAC Systems: These issues are largely design issues in that negative air pressures invite moisture into buildings, particularly in humid climates. Additionally, lined ducts can be breeding grounds for mold if they become wet. Check any insulated ducts for signs of water damage.

6.1.1.5 Plumbing: Most plumbing is hidden in walls by the time it is in service and water intrusion problems can occur that are not easily detectable. Check for adequate insulation on cold water pipes where specified and document all static pressure inspections.

6.1.1.6 Duct and Elevator Shafts: Duct chases and elevator shafts are often exposed to the elements during construction. Long after completion elevator shafts can collect water. Water/mold resistant products may be appropriate here and recommended to the architect.

6.1.1.7 Interior Walls: Paper-backed gypsum board contains materials on which mold can feed. Vinyl wall coverings can condense the water vapor in drywall. The architect should be consulted when experience would tell us that a given product or installation technique might not be appropriate. For example, Green board may be appropriate areas where such is not normally the case. Raising gypsum board off of the floor by ½” can prevent wicking in minor water instruction cases, but the architect will need to be consulted before deviating from specifications.

6.2 Other Key Considerations

6.2.1 During the design phase and during any value engineering performed by Haselden Construction, consider water tightness details with specific attention to the building envelope.
6.2.2 Consult an envelope engineer on geometrically complex buildings for a third party opinion on the water tightness of the envelope.

6.2.3 On a renovation or addition, carefully survey the existing building before construction or demo begins and while walls are opens. Look for discoloration in finished surfaces or a musty smell. If water intrusion problems are found, the owner will need to be notified and a course of action chosen.

6.2.4 Develop the project schedule with envelope construction completion as a predecessor to installation of finishes. This may be impossible on some projects, if so, have a detailed weather protection plan for all areas of exposure and establish a sufficient budget to implement the plan.

6.2.5 Document any recommended changes to the Architect of Record. On standard Owner-Architect-Contractor project delivery methods, the Architect’s approval must be obtained. In the event the recommendation is rejected, reiterate the recommendation in writing, copy the owner and keep retrievable records of such.

6.2.6 Pre-qualify potential subcontractors, on non-selected subs i.e. (Hard Bid Jobs) perform pre-construction meeting to review and ensure that the subs have adequate experience in the specific application being considered.

6.2.7 Consult manufacturers of moisture critical products to confirm the product’s application and recommend standard details, and provide preferred installers.

6.2.8 Project management and key supervisory workers trained in importance and methods of recognizing, preventing and minimizing water intrusion:

   6.2.8.1 Keep interior materials dry – prior to, during and after installation.
   6.2.8.2 Do not install wet/damp building materials except when specified or materials require (i.e. structural steel fireproofing).
   6.2.8.3 Report any water damage, leaks or intrusion to the project manager immediately.
   6.2.8.4 Dry out any water damaged materials as soon as possible.
   6.2.8.5 Build in strict accordance with designs and specifications.
   6.2.8.6 Immediately alert architects to designs that may allow water intrusion or moisture accumulation.
   6.2.8.7 Question “conceptual only,” inadequate architectural detailing or clearly improper building plans.

6.2.9 Delivery of interior materials (e.g. dry wall, paneling, ceiling tiles, framing lumber):

   6.2.9.1 Schedule so materials will arrive after exterior of building has been sealed.
   6.2.9.2 Provide for dry storage of materials – off ground away from moisture sources.
   6.2.9.3 Minimize storage time.
   6.2.9.4 Plastic sheeting or tarps used to cover materials are secured loosely to allow air circulation.
6.2.10 Prearrange for drying equipment:

6.2.10.1 Fans
6.2.10.2 Dehumidifiers
6.2.10.3 Wet-Dry Vacuums
6.2.10.4 Vacuum Trucks

6.3 Construction Phase

6.3.1 All materials inspected upon delivery for preexisting water damage.

6.3.2 Interior materials installed in dry condition – per manufacturers’ specifications.

6.3.3 All water services (including fire sprinklers) and waste lines checked for:

6.3.3.1 Proper installation
6.3.3.2 Connections properly made and checked for leakage
6.3.3.3 Water lines (particularly chilled water) properly insulated
6.3.3.4 Have multiple inspectors for filling or hydro test of sprinklers
6.3.3.5 All building penetrations properly installed and checked for leakage:

6.3.3.5.1 Doors
6.3.3.5.2 Windows
6.3.3.5.3 Balconies and decks
6.3.3.5.4 Roof membranes – lapping at corners and joints
6.3.3.5.5 Ventilation/exhaust ducts

6.3.3.6 All tears, openings or punctures in vapor barriers have been repaired.
6.3.3.7 All flashings and caulking checked for proper lapping and application.
6.3.3.8 All roof drains drain away from the foundation.
6.3.3.9 Roof drains properly supported and braced for large volume storms.
6.3.3.10 All moisture-generating equipment vented outdoors.
6.3.3.11 Surrounding ground sloped away from foundation.
6.3.3.12 Proper ventilation to attics, crawl spaces or other enclosed areas.
6.3.3.13 HVAC system.

6.3.3.13.1 Correct filters properly installed – per specifications, no filters missing or misaligned.
6.3.3.13.2 Drip pan for cooling coils drains properly.
6.3.3.13.3 No insulation on interior of ventilation ducts – bare, galvanized sheet metal preferred.
6.3.3.13.4 All duct joints sealed.
6.3.3.13.5 The system is cleaned and commissioned. Third party certification of HVAC (test and balance report). The American Society of Heating Refrigerating and Air Conditioning Engineers have published a good practice commissioning procedure (ASHRAE Guide #1).

6.3.3.14 Documentation of critical installations, including photographs.
6.3.3.15 Perform interim inspections; invite the Architect, Envelope Engineer, Mechanical Engineer, and manufacturer’s representatives to inspect for water/moisture related issues.

6.4 Post Construction Phase

6.4.1 Verify training of owners for product inspections of installations and maintenance for warrantee purposes and document such training.

6.4.2 Facility owner briefed on their responsibilities to prevent water intrusion.

6.4.3 Fix leaky plumbing and leaks in the building envelope as soon as possible.

6.4.4 Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.

6.4.5 Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).

6.4.6 Keep heating, ventilation and air conditioning (HVAC) drip pans clean, flowing properly and unobstructed.

6.4.7 Vent moisture-generating appliances, such as dryers, to the outside when possible.

6.4.8 Maintain low indoor humidity, below 60 percent relative humidity (RH), ideally 30-50 percent, if possible.

6.4.9 Perform regular building/HVAC inspections and maintenance as scheduled.

6.4.10 Install and maintain proper air filters.

6.4.11 Clean and dry wet or damp spots within 48 hours.

6.4.12 Don’t let foundations stay wet. Provide drainage and slope the ground away from the foundation.

6.4.13 Ensure new building penetrations are properly sealed.

6.4.14 Landscape watering system does not spray building foundation.

6.4.15 Final visual inspection of:

6.4.15.1 Pipe chases
6.4.15.2 Utility tunnels
6.4.15.3 Areas above drop ceilings that are exposed to water or waste lines that are directly below roof.

7.0 Attachments:
1.0 Purpose

1.1 This program provides minimum safety and health guidelines for protection from the hazards associated with abrasive blasting.

2.0 Scope

1.2 This program covers all abrasive blasting usage on all Haselden projects and related work.

3.0 Definitions

3.1 **Abrasive Blasting Hood:** A continuous-flow air-line respirator with a helmet and shroud constructed to protect the head, neck, and shoulders from airborne abrasives. The hood must be NIOSH-certified.

3.2 **Dead Man Switch:** For the purposes of this procedure, a remote-control device that the operator must manually hold open to operate the blast machine. The flow of material must shut off when the dead man switch is released.

3.3 **Qualified Operator:** An employee who has received training and has demonstrated competency to operate a specific piece of equipment.

3.4 **Scarifying:** Breaking up, loosening, or removing a surface through powered mechanical means, such as slinging steel shot against a surface or grinding a surface with toothed rotating disks.

4.0 Reference Documents

4.1 OSHA e-Tool: - Control Measures – Abrasive Blasting

4.2 OSHA 29 CFR 1910.134 - Respiratory Protection

4.3 OSHA 29 CFR 1926.57 – Ventilation

4.4 OSHA 29 CFR 1926.55 – Gases, vapors, fumes, dusts and mists

4.5 HASELDEN - Respiratory Protection Program

4.6 HASELDEN – Respirable Silica Hazard Control Policy

5.0 Responsibilities
5.1 **Site Superintendent(s):**

5.1.1 To manage and enforce the procedures and policies of this program as it pertains to all Haselden and subcontracted work.

5.2 **Blasting Operators:**

5.2.1 To follow the policies and procedures of this program and not to deviate without express written permission by Haselden Construction.

### 6.0 Implementation

#### 6.1 General

6.1.1 During blasting the abrasive medium is pulverized and may release hazardous respirable contaminants (for example, silica) into the air. In addition, blasting painted surfaces that contain lead and zinc primer may release hazardous zinc and/or lead chromates in respirable dust form.

6.1.2 The preferred method of protecting personnel from potential workplace hazards arising from abrasive blast cleaning is to use all feasible engineering controls.

6.1.3 If engineering controls fail to reduce the hazard below the Threshold Limit Value (TLV), administrative controls should be put in place.

6.1.4 If potential hazards have still not been reduced below the TLV, personnel shall use appropriate personal protective equipment (PPE).

6.1.5 Engineering and administrative controls, and PPE discussed in this procedure apply to all personnel exposed to the potential physical and health hazards of the blasting operation.

#### 6.2 Operator Qualification

6.2.1 Only a qualified operator may operate abrasive blasting equipment.

6.2.2 Subcontractor must establish and maintain proof of operator competency.

#### 6.3 Hazards

6.3.1 PPE as specified in **sections 6.5 and 6.6** will be provided for the operator and all other employees inside barricaded areas.

6.3.2 Planning must include precautions to protect all personnel not involved in the blasting operation from any potential health or physical hazard.

6.3.3 Signs stating "**Abrasive Blasting Area - Do Not Enter**" must be used in conjunction with perimeter barricades, containing structures, and other physical barriers.
6.3.4 Physical Hazards

6.3.4.1 Abrasive blasting involves the potential for injury from the impact of the abrasive blasting. Both the operator and, if exposed, the standby or attendant inside the barricaded area and anyone else exposed to physical hazards of the blasting must be protected from these hazards.

6.3.5 Health Hazards

6.3.5.1 Airborne contaminants released by the pulverizing blasting medium may present health hazards to both the operator and the standby or attendant inside the barricaded area.

6.3.5.2 Abrasive blasting presents potential hazards from possibly toxic materials being removed or blasted.

6.3.5.3 Noise is another health hazard associated with abrasive blasting.

6.3.6 Environmental Hazards

6.3.6.1 Abrasive blasting presents the potential for contamination of the environment by the material being blasted such as environmentally hazardous run off.

6.3.6.2 Spent abrasive material may contain contaminants and must be analyzed to determine if special handling is required to comply with environmental regulations.

6.4 Engineering Controls

6.4.1 Engineering controls are the preferred method for controlling workplace hazards. Engineering controls that can help maintain airborne contaminants below the prescribed limits include the following.

6.4.1.1 Nontoxic, silica-free blasting agents, such as Star-Blast™.

6.4.1.2 Ventilation.

6.4.1.3 Dust-suppression techniques such as water mists.

6.4.1.4 Containment.

6.5 Respiratory Protection

6.5.1 During abrasive blasting, the operator must wear an NIOSH-certified abrasive blasting hood.

6.5.2 Employees in the barricaded area shall be provided with and will wear a NIOSH-certified full-face air-supplied respirator unless area and personal air-monitoring done by the subcontractor proves that a lesser degree of protection is acceptable.
6.5.3 In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, a written respiratory protection plan with worksite-specific procedures (Site Specific Plan) is required.

6.5.4 Employees wearing respirators must be trained in the requirements of the employer’s written respiratory protection program, and must be medical evaluated and fit tested before a respirator is issued.


6.6 Blasting Operator Protection

6.6.1 Blasting operator(s) must wear the following PPE:

6.6.1.1 NIOSH-certified abrasive blasting hood.

6.6.1.2 Durable apparel closeable at wrists, ankles, and other openings to prevent entry of abrasive material.

6.6.1.3 Leather or similar heavy-duty apron or other shot resistant clothing.

6.6.1.4 Safety glasses with side shields worn under the hood, unless the hood manufacturer confirms the face shield assembly meets current ANSI Z87.1 requirements.

6.6.1.5 Heavy canvas or leather gloves with gauntlets.

6.6.1.6 Hearing protection.

6.6.1.7 Leather work boots/shoes.

6.6.2 Attendant(s) who are not exposed to the nozzle blast must wear goggles and other PPE required by the industrial hygiene assessment.

6.7 Administrative Controls

6.7.1 Administrative controls that can be used to minimize personnel exposure to potential hazards include the following:

6.7.1.1 Scheduling blasting operations during off-shift hours.

6.7.1.2 Locating permanent "sandblasting/abrasive blasting" area in a remote section of the facility.

6.7.1.3 Rotating affected personnel to manage exposure to heat and noise.

6.8 Industrial Hygiene Assessment and Air Monitoring
6.8.1 An industrial hygiene assessment, conducted by the subcontractor of the work and work area will be used to determine:

6.8.1.1 Required respiratory protection needed within the barricaded area;

6.8.1.2 Perimeter of the work-area (barricaded) boundary; and

6.8.1.3 Steps needed to ensure compliance with applicable safety and health requirements.

6.8.2 Personal and area monitoring, conducted by the subcontractor will be used to identify:

6.8.2.1 Respiratory protection requirements,

6.8.2.2 Perimeter work-area boundary locations, and measures required to protect other employees and the public from exposure.

6.8.2.3 Compliance with applicable safety and health regulations.

6.9 Breathing Air Quality Requirements

6.9.1 Air quality for air-supplied respirators shall meet the requirements of Grade D breathing air as defined by the Compressed Gas Association, Commodity Specification G-7.1.

6.9.1.1 Oxygen - 19.5% to 23.5%.

6.9.1.2 Condensed Hydrocarbon less than 5 mg/m3.

6.9.1.3 Carbon Monoxide - less than 10 parts per million (ppm).

6.9.1.4 Carbon Dioxide - less than 1000 ppm.

6.9.1.5 Dew point no higher than -50 degrees F.

6.9.1.6 Odor - no pronounced odor.

See Haselden Respiratory Protection Program or OSHA CFR 1910.134 - Respiratory Protection” for detail information on breathing air compressors requirements.

6.9.2 Certificates of Analysis are required for purchased breathing air.

6.9.3 Air Quantity

6.9.3.1 For tight fitting respirators, the air system will provide 4 cubic feet/minute (cfm) of air at 80-120 psi for each employee connected to the system.

6.9.3.2 For loose fitting hoods, such as an abrasive blasting hood, the air system will supply at least 6 cfm for each employee connected to the system.
6.9.4 Breathing airline couplings must be incompatible with outlets for other systems to ensure it **CANNOT** be connected to non-respirable gases.

6.9.5 After-cooler devices are especially useful for cooling air to ambient temperatures after it has been heated during compression.

### 6.10 Abrasive Blasting Equipment Requirements

6.10.1 Subcontractors will maintain equipment according to manufacturers’ instructions and governmental regulations.

6.10.2 Equipment will be inspected before each use.

6.10.3 Abrasive blasting equipment must be provided with a dead man switch at the nozzle that automatically shuts off the flow of material at the nozzle when released.

6.10.4 An automatic shut-off valve (excess-flow valve) must be provided between the compressor and the air-supply hose.

6.10.5 The hose nozzle and coupling must be fitted to the hose so that the fittings are not weakened by the abrasive flow.

6.10.6 Fittings must be positive to prevent unplanned disengagement. Blast hose quick couplings must be used with a steel safety clip.

### 6.11 Abrasive Blasting Operation

6.11.1 Although blasting media **may be** inorganic and nonflammable, blasting material or equipment may generate airborne particles that can create a flammable or an explosive dust mixture. Therefore, when blasting the following precautions shall be taken:

6.11.1.1 All tanks, vessels, equipment, etc., being blasted must be grounded; the blast machine must be electrically connected to the same ground.

6.11.1.2 The blast hose must be an antistatic type.

6.11.1.3 The blast nozzle must be electrically bonded and grounded to prevent buildup of static charges.

6.11.1.4 For areas where static charge is a hazard, a blast medium that does not produce static will be used.

6.11.2 Blasting operator must not work alone whenever the following conditions exist:

6.11.2.1 Performing abrasive blasting.

6.11.2.2 Using a bottled/supplied-air breathing system.
6.11.2.3 The operator's ability to receive emergency alarms and communications is impaired.

6.11.2.4 Barricades must be maintained.

6.11.3 An attendant shall be responsible for:

6.11.3.1 Notifying the operator of any emergency alarm.

6.11.3.2 Monitoring bottled-supplied breathing air or compressor and/or CO2 alarms when breathing air is supplied by a compressor.

6.11.3.3 Monitoring adequacy and effectiveness of barricades.

6.11.4 Abrasive blasting operators must ensure that the hose and nozzle are exhausted of all air prior to releasing the nozzle, and the nozzle is facing away from the operator and others as it is released.

6.11.5 Operator should work from a standing position. All other positions must be reviewed by a subcontractor supervisor to identify additional engineering controls or ergonomic issues.

6.12 Blast Media

6.12.1 Silica-free blasting media must be used.

6.12.2 Subcontractors will identify the blast medium they plan to use and provide the Haselden management team and the safety manager with a copy of the Safety Data Sheet (SDS).

6.13 Scarifying

6.13.1 Scarifying operations share some safety and health hazards with other blast operations. Protect employees from shot and from the release of potential contaminants.

6.14 Barricades

6.14.1 Subcontractor shall provide and erect barricades sufficient to protect other workers, not involved with the abrasive blasting, from abrasive materials or air-borne waste.

6.14.2 Air monitoring can be used to prove the adequacy of the separation.

6.14.3 Air concentrations outside the barricaded area must be less than 50% of the TLV (ACGIH) for the contaminants.

7.0 Attachments
1.0 Purpose

1.1 This procedure describes the safety requirements for setting up, operating, and inspecting aerial lifts including extendable boom platforms, articulating boom platforms, vertical mast lifts, scissor lifts, and bucket trucks.

2.0 Scope

2.1 This program applies to all work any aerial lifts on Haselden projects or related work.

2.2 Any exceptions to this policy must be approved by the Haselden Safety Director or designee.

3.0 Definitions

3.1 Aerial Lifts: All mechanical equipment used to elevate personnel, such as bucket trucks, extendable boom platforms, scissor lifts, and articulating boom platforms. Controls for aerial lifts are located on the platforms and operated by the person being lifted.

3.2 Electrical Source: Items such as equipment, cables, lines, or bus bars that are used to conduct electrical current.

3.3 Hot Work: Any task that uses an open flame or produces spark, such as welding, torch cutting, grinding, soldering, brazing, etc.

3.4 Qualified Operator: An experienced employee who has received training and demonstrated competency to inspect and operate a specific type aerial lift.

4.0 Reference Documents

4.1 OSHA Publication – Construction Industry Digest

4.2 OSHA Publication – Aerial Lifts Safety Tips

4.3 29 CFR 1926.453 – Aerial Lifts


4.5 Haselden Spill Response Plan

5.0 Responsibilities
5.1 Site Superintendent:

5.1.1 Will determine condition for lifts to be used on Haselden projects and oversee the implementation of this program on the project.

5.2 Qualified Operator:

5.2.1 Will be trained properly and inspect and operate each lift within manufacturer’s recommendations for use. Will inspect each lift prior to use on a daily basis.

6.0 Implementation

6.1 Equipment and Equipment Inspection

6.1.1 A qualified operator must inspect all aerial lifts prior to their use on site

NOTE: Inspection will be documented using a form similar to Attachment 7.1 Aerial Lift Arrival Inspection Form or Attachment 7.2 Scissor Lift Arrival Inspection Form

6.1.2 Aerial lifts must be in new or like new condition

6.1.3 If an aerial lift is removed from site and then returned, it shall be re-inspected prior to its use on site.

6.1.4 A qualified operator must inspect all controls and safety devices each day prior to use.

6.1.4.1 A copy of the inspection form must be kept with the lift.

6.1.4.2 Any deficiency identified during the aerial lift inspection including the operation of its controls, must be corrected or repaired before it is operated.

6.1.4.3 If repairs cannot be made immediately, the lift will be taken out of service and tagged “defective” until repairs are made.

6.1.5 All controls must be clearly labeled; labeling must remain legible. Controls shall be guarded to prevent accidental activation; they shall not protrude above the basket.

6.1.6 Convenience receptacles provided on aerial lifts must be of the GFCI type.

6.1.7 All mechanical and control repairs made to an aerial lift must be performed by a qualified individual and according to the manufacturer's requirements.

6.1.8 Accessories used to extend reach, carry materials, or carry tools must be approved in writing by the lift manufacturer.

6.1.9 Aerial lifts will not be altered or modified from their original design unless such alteration or modification is authorized by the equipment manufacturer.
6.1.10 Subcontractors must have documented evidence of the manufacturer's authorization for the alteration or modification.

6.1.11 Gross weight capacity limit must be posted on the equipment.

6.2 Operator Qualifications

6.2.1 Only individuals that have been trained and qualified as a trainer will conduct operator training.

6.2.2 Operators, including supervisors must meet the following minimum requirements:

   6.2.2.1 They must pass a written, oral or practical test on general aerial lift operation at a maximum interval of every three years.

   6.2.2.2 They must demonstrate satisfactory operating skills at a maximum interval of three years for each manufacturer's aerial lift they will operate.

6.2.3 Subcontractors will:

   6.2.3.1 Provide each employee that successfully completes the training proof of their qualifications and,

   6.2.3.2 Ensure employees carry their proof of qualification with them at all times while operating that equipment.

6.3 Operation

6.3.1 Aerial lifts will be equipped with ground controls on the carrier from which all functions can be controlled.

   6.3.1.1 Ground controls will provide for overriding the upper controls.

   6.3.1.2 Except in the case of an emergency, ground control will not be operated unless permission has been obtained from the employees in the platform.

6.3.2 Aerial lifts shall be set up level. Outriggers (if equipped) must be set prior to elevating the platform. Outriggers will be set on outrigger pads of sufficient size to adequately spread the load required by ground conditions.

6.3.3 On electrical-powered aerial lifts caution must be used to avoid entangling the electrical supply cord in the turntable, boom or scissor mechanism.

6.3.4 Aerial Lift Work Rules

   6.3.4.1 Always use a full-body harness with a 4-foot lanyard or self-retracting lifeline, leading edge rated (with shock absorber) attached to the manufacturer-supplied platform anchorage point.
6.3.4.2 Stand only on the platform floor when performing work;
   6.3.4.2.1 Never stand or climb on the top rail, mid-rail or toe board,
   6.3.4.2.2 Planks on guardrails, buckets, ladders or other items will not be used to gain additional reach.
6.3.4.3 Keep arms, legs, feet and head inside the confines of the basket while the platform is in motion.
6.3.4.4 **DO NOT** climb out of the platform to an elevated work location unless,
   6.3.4.4.1 A written plan is prepared describing how employees will exit and re-enter the lift safely, using the gate, without climbing on the guardrails.
   6.3.4.4.2 For boom lifts, the basket must be positioned so the walking/working surface is beneath the basket before employees are allowed to enter or exit the lift.
   6.3.4.4.3 Employees must maintain 100% fall protection while entering and exiting the lift basket.
   6.3.4.4.4 The plan must be submitted to the Haselden superintendent for acceptance. Changes to the plan must be resubmitted for acceptance.
6.3.4.5 **DO NOT** exceed the manufacturer's recommendations or the gross weight capacity limits for the aerial lift; Gross Weight includes tools + equipment + supplies + personnel.
6.3.4.6 Keep manufacturers’ operating instructions with each aerial lift
6.3.4.7 **DO NOT** allow trash and debris to accumulate in the basket of the aerial lift.
6.3.4.8 Keep tools and materials in containers and properly secured to the platform to keep the containers from tipping over.
6.3.4.9 **DO NOT** place bolts, fittings, and other small items on the control panel.
6.3.4.10 Stop use and immediately report to the supervisor any malfunction or damage to the aerial lift, structures, utilities, services, finishes, building components or other equipment.

6.3.5 Controls will be operated in a smooth progressive manner and momentarily returned to the neutral position before proceeding to another position. The foot pedal switch, if so equipped, shall be activated only by the operator.
6.3.6 When moving a scissor lift with the operator on the walking/working surface outside the basket, controls shall be removed and the operator
shall extend the cable and stand clear of the path of the equipment. Equipment shall only be moved in low speed range.

6.3.7 Rigging is **NOT** allowed from the platform or boom; **ONLY** material which fits within the perimeter of the platform and is within the gross weight capacity of the aerial lift may be raised and lowered. Material that extends beyond the perimeter of the guardrail of the platform shall not be raised or lowered unless approved by the manufacturer.

6.3.8 Platforms and/or booms shall not rest on or contact piping, conduit, cable tray or similar objects.

6.3.9 All platform gates, chains, etc. shall be in place and secured when personnel are in the basket.

6.3.10 The stability of the ground will be evaluated to ensure it can support the weight of the aerial lift, tools, employees, and supplies at the reach planned for the work activity.

6.3.10.1 Do not move an aerial lift onto unstable footing.

6.3.10.2 Do not travel over drain gratings, hole-covers, or other surfaces that are not designed to support the weight of the equipment.

6.3.10.3 Aerial lifts shall not travel or operate within five feet of any cased hole, supported ditch, or supported excavation, or within an angle of 1 1/2 : 1 from the bottom of any unsupported ditch, hole, drop off or excavation.

6.3.11 The platform or basket on boom type aerial lifts shall not be used to push or pull the carrier from mud or a similar stuck position.

6.3.12 On boom supported equipment, the basket must be lowered to the lowest possible position, usually within 3 feet of the ground, with the boom fully retracted and in line with the carriage when the equipment is traveling to a new work location. Use a spotter on the ground if visibility is impaired by the motor housing.

6.3.13 The basket may remain raised to continue the work in progress while the equipment is moving only if the equipment is traveling at low speed on a firm level surface.

6.3.14 Aerial lifts shall only be operated in the high ground speed setting when traveling on roadways and with platforms in their lowest travel position.

6.3.15 The operator shall ensure the equipment is positioned and operated so that the rotation of the turntable and motor housing will not strike structures, objects or personnel.

6.3.16 Personnel will not work under an elevated basket or boom.

6.3.17 Follow the manufacturer's recommendations for maximum allowable loads and maximum boom lengths.
6.3.18 For multi-capacity lifts, where the load capacity is reduced past a certain range of reach, calculate the load at the planned radius of operation and prepare a JHA to ensure that the capacity of the equipment is not exceeded.

6.3.19 When performing hot work, welding, burning, soldering, grinding, etc. (open flames or a spark producing task) from an elevated aerial lift:

6.3.19.1 Control panel must be covered with fire-retardant blanket to protect it.

6.3.19.2 Sparks, slag and molten metal shall be controlled to prevent falling on personnel or equipment.

6.3.19.3 Batteries shall not be charging while performing hot work.

6.3.19.4 Combustible and flammable materials must be removed from the platform.

6.3.19.5 Welding or burning shall not be conducted directly over the motor house or boom where hydraulic hoses or electrical cables may be damaged.

6.3.19.6 Have someone at grade designated to shut off the welding machine or close cylinder valves in case of an emergency.

6.3.20 When the equipment is to be shut down, allow to cool for 10 minutes and ground as needed during refueling. A fire extinguisher within 25 feet is required.

6.3.21 Operators shall coordinate multiple lifts working in close proximity to avoid interference, collision, and working under a lift.

6.4 Environmental Considerations

1.1.1 Hydraulic and fuel systems must be maintained to prevent leakage.

1.1.2 If a leak or spill occurs in a hydraulic or fuel system, the spill must be cleaned up immediately in accordance with Haselden requirements and governmental regulations. See the Haselden Spill Response Plan.

7.0 Attachments:

7.1 Aerial Lift Arrival Inspection Form
7.2 Aerial Lift Daily Inspection Form
7.3 Scissor Lift Arrival Inspection Form
7.4 Scissor Lift Daily Inspection Form
**AERIAL LIFT INSPECTION FORM  ARRIVAL CHECK**

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**INSPECTED BY**: ____________________________  **DATE**: ____________________________

**PRINT NAME/SIGN**

**OPERATOR**: ____________________________  **DATE**: ____________________________
AERIAL LIFT (BOOM LIFT)
DAILY INSPECTION FORM

Equipment Description: ________________________________

Equipment Model: ________________________________ Date: ________________

Company Name: ________________________________

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<th>REMARKS/ COMMENTS</th>
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<td>Fuel System no leaks</td>
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<td>Boom Extends and Retracts</td>
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<td>Boom Raises and Lowers</td>
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<td>Boom Swings and Stops</td>
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<td>4ft Lanyard Or Retractable Lanyard</td>
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<td>Outriggers Function Test (If Equipped)</td>
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<td>Wheel Lug Nuts Tight</td>
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<td>Motion Alarm Functions</td>
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<td>Fire Extinguisher</td>
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<td>Horn works</td>
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<td>JHA Discusses Lift Use</td>
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<td>Rescue Plan</td>
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NOTE: These items are to be inspected prior to operating the aerial lift (boom lift). Immediately report all items in need of service or repair to your supervisor so proper maintenance can be performed. DO NOT OPERATE DEFECTIVE EQUIPMENT!

Inspectors Name: ________________________________ Signature: ________________________________
SCISSOR LIFT INSPECTION FORM       ARRIVAL CHECK

Tag No./Serial No.: ___________________________ Unit No.: ___________________________
Owner’s Name: __________________________________ User’s Name: ________________________
Equipment Name: ___________________________ Load Limit: __________________________
Equipment Location: ___________________________ Equipment Reach: ______________________

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>CONDITIONS</th>
<th>REMARKS/COMMENTS</th>
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<tbody>
<tr>
<td>Driving: Forward/Reverse</td>
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<td>Steering: Left/Right</td>
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<td>High Drive</td>
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<td>Horn</td>
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<td>Foot Dead man</td>
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<td>Platform: Up/Down</td>
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<td>Platform: Length Extension</td>
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<td>Platform Reach Extension</td>
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<td>Basket and Gate/Chain</td>
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<td>Scissor Arms and Wear Pads</td>
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<td>Fire Extinguisher</td>
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<td>Wiring</td>
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<td>Motion alarm</td>
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<td>Body, Decals, and Frame</td>
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<td>Tires, Rims and Bolts</td>
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<td>Battery Charge and Secure</td>
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<td>Hydraulic Fluid</td>
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<td>Fuel Gas lines</td>
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<td>Alternator, Belts and Leaks</td>
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<td>Muffler/ Exhaust System</td>
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<td>Guard Rails</td>
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<td>Hand holds</td>
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<td>Anti-skid decking</td>
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<td>Ground Controls</td>
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<td>Emergency Stop</td>
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<td>Manual Descent System</td>
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<td>Operator’s Manual</td>
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<tr>
<td>Engine</td>
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Inspected By: __________________________________________ Date: _________________________

Operator: __________________________________________ Date: _________________________

PRINT NAME/SIGN
### SCISSOR LIFT
### DAILY INSPECTION FORM

**Equipment Description:** ________________________________

**Equipment Model:** ________________________________  **Date:** ________________________________

**Company Name:** ________________________________

<table>
<thead>
<tr>
<th>INSPECTION ITEMS</th>
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<td>Operators Manual on equipment</td>
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<td>Operating Controls labeled</td>
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<td>Fuel System no leaks</td>
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<td>Gate/ Chain Closes and Latches</td>
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<td>Guardrails Intact/Undamaged</td>
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<td>Fall Restraint Anchor Points</td>
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<td>Basket Operating Controls Check</td>
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<td>Wiring At Control Box Not Exposed</td>
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<td>Controls Return when Released</td>
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<td>Steering Check</td>
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<td>Functional Brake Check</td>
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<td>Wheels and Rims Undamaged</td>
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<td>Wheel lugs tight</td>
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<td>Charging Cord Not Damaged</td>
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<td>Motion Alarm Functions</td>
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<td>Platform Clear of Unnecessary Debris</td>
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**NOTE:** These items are to be inspected prior to operating the forklift. Immediately report all items in need of service or repair to your supervisor so proper maintenance can be performed. **DO NOT OPERATE DEFECTIVE EQUIPMENT!**

**Inspectors Name:** ________________________________  **Signature:** ________________________________
1.0 Purpose

1.1 This program provides minimum requirements for inspecting and operating portable air compressors, and the general use of compressed air and air hoses. This procedure does NOT apply to the use of breathing air or breathing air compressors.

2.0 Scope

2.1 This program covers all air compressors and their use on all Haselden projects and related work.

3.0 Definitions

3.1 Effective Chip Guarding: A method or equipment that will prevent a chip or particle of any size from being blown into the eyes or skin of personnel.

3.2 Excessive Abrasion: Scratches, cuts, and/or scuffs that exposes any internal reinforcing fabric.

3.3 Qualified Inspector: An experienced craftsperson or foreman, acceptable to Haselden, who has demonstrated his or her ability or competency to inspect equipment.

4.0 Reference Documents

4.1 29 CFR 1926.302 -Power-Operated Hand Tools

4.2 EM 385 1-1 2008 20.B

4.3 Haselden Tool Policy

4.4 Haselden Spill Control Policy

5.0 Responsibilities CFR

5.1 Site Superintendent(s)

5.1.1 To manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 Compressor Inspection
6.1.1 A qualified operator must inspect all air compressors prior to their use on site in accordance with the manufacturer’s requirements.

6.1.2 Current inspection and maintenance records of all air compressors will be maintained by the subcontractor and provided to Haselden upon request.

6.2 Modifications

6.2.1 Do not modify or alter an air compressor without prior written permission from the manufacturer.

6.3 Couplings

6.3.1 Inspect couplings daily before use; check for corrosion, damage, or other defects.

6.3.2 Use only couplings designed for compressed air services.

6.3.3 Use the proper coupling and follow manufacturers’ recommended banding or attaching method when installing on an air hose.

6.3.4 Provide all couplings with a positive locking device.

6.4 Hoses

6.4.1 Inspect hoses daily before use; check the full length of it for bulges, tears, punctures, cuts, soft spots, and excessive abrasion, loose connections and defective fittings before opening the air supply valve.

6.4.2 Defective air hoses or couplings will be tagged “Defective”, removed from service and disposed of.

6.4.3 Use only hoses designed for compressed air and rated for the service pressure of the compressor.

6.4.4 Hose fittings must be properly fastened onto the hose using only manufacturer-approved hose clamps.

6.4.5 Never crimp, couple or uncouple a pressurized hose.

6.4.6 Unless the hose coupling is a “quick-change” type with internal check valves, shut off the air at the air supply valve before making any adjustments or changing air tools AND bleed the hose at the tools before breaking the connection.

6.4.7 All hoses exceeding 1/2 inch inside diameter must have an excess flow valve for the proper size and rating at the source of supply or branch line to reduce pressure in case of hose failure.

6.4.8 Never use an air hose to raise or lower tools.
6.4.9 All air hose connections must be equipped with safety chains or cables (whip-checks) and must be secured with standard safety clips through the fittings when the connection is made.

6.4.10 Hoses equipped with special connections require special tightening techniques or methods, in accordance with the manufacturer's requirements.

6.4.11 When hanging an air hose in the vertical position, hose connections must be supported to prevent the weight of the hose pulling the connection apart or pulling the connection out of the hose.

6.4.12 Whenever possible, run air hoses through areas with little or no vehicular or pedestrian traffic.

6.4.12.1 Air hoses that must cross roadways or other vehicular traffic areas will be protected from damage by installing a "hose bridge".

6.4.12.2 Air hoses that cross pedestrian walkways must be installed such that they do not present an overhead or tripping hazard; this may require:

6.4.12.2.1 Suspending the hose at least 7 feet off the walking surface.

6.4.12.2.2 Securing or taping it to the floor.

6.4.12.2.3 Adding flagging or tape to alert employees of the potential hazard.

6.4.13 Do not allow a hose to rest on a sharp surface or edge that could puncture, cut, or tear the hose.

6.5 Compressed Air Cleaning

6.5.1 Compressed air will not be used for general cleaning purposes except where reduced to 30 psi or less and when using proper PPE and effective chip guarding.

6.5.1.1 Exception: This does not apply for concrete form, mill scale and similar cleaning purposes.

6.5.1.2 Do not use compressed air for cleaning when the activity will place silica dust in the breathing zone of employees.

6.5.2 Employees will wear the following PPE when using compressed air:

6.5.2.1 Safety glasses AND face shield or

6.5.2.2 Goggles AND face shield.
6.5.2.3 Hearing protection if the compressor noise level exceeds 85 dB(A).

6.5.3 Employees will never use compressed air to clean material from their body or point an open-air hose at another employee.

6.6 Relief Valve

6.6.1 Each compressor must be equipped with a properly sized relief valve.

6.7 Refueling

6.7.1 All engines of compressors must be turned off and allowed to cool for at least 10 minutes before refueling; ensure that a fire extinguisher is within 25 feet.

6.8 Environmental Considerations

6.8.1 Hydraulic systems must be maintained to prevent leakage.

6.8.2 If a leak or spill occurs in a hydraulic system, the spill must be cleaned up immediately in accordance with Haselden requirements and governmental regulations. See the Haselden Spill Control Policy.

6.9 Accessory Examples

6.9.1 Standard Safety Clip

6.9.2 Whip-Check / Dixon King Safety Cable

6.9.3 Excess Flow Valve / Dayton Speed Aire

7.0 Attachments
1.0 Purpose

1.1 Safety-related work practices must be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contact. Haselden Construction has designed this electrical safety program to ensure it provides the maximum level of safety for all employees and to ensure compliance with the safety related practices outlined by the Occupational Safety and Health Administration (OSHA) and the requirements outlined in NFPA 70E.

2.0 Scope

2.1 This program applies to all live electrical tie-ins, maintenance, or other work attempted on live electrical components.

3.0 Definitions

3.1 **Arc Flash Boundary** - Denotes the area within 48” of any energized electrical exposure. Only personnel that have been trained and deemed as Qualified are allowed within this boundary. Any work within this area requires the use of proper PPE for arc flash hazards per the program matrix.

3.2 **Limited Approach Boundary** - Denotes the area within 10 feet of any energized electrical exposure. Only personnel that have been either Qualified or Trained are allowed within this area. Proper PPE per the program matrix for arc flash hazards is required but may be reduced by one level.

3.3 **Prohibited Approach Boundary** - Denotes the area within one inch of any energized electrical exposure. Only personnel that have been trained, deemed as Qualified and are experienced are allowed to cross this boundary. Any work within this area requires insulated tools, gloves and other protective equipment to eliminate shock hazard. Proper PPE per the program matrix for arc flash hazards is required.

3.4 **Branch Circuit** Wiring and devices that are fed from a panel board circuit breaker rated at 60 amps or less.

Note: This definition is for exclusive use with this policy as related to Hazard Category selection. It is more restrictive that the NEC definition.

3.5 **Energized Electrical Work** Any work on electrical equipment, circuits, devices, systems, or any other energized part(s) where an employee is required to deliberately, or could accidentally, place any part of his body, tool, or material into or around such electrical devices where the voltage is in excess of 50 volts.
3.6 **Experienced** Prior knowledge or actual experience related to the actual type and manufacture of the equipment being worked on.

3.7 **Guarded** Exposure to energized components is protected from incidental contact by insulating materials or shields. Examples include wire-nuts, disconnect line shields or covers, and terminal barrier covers. Some guarded installations may include provisions for insertion of testing equipment.

3.8 **Unguarded** Energized components that are exposed to possible physical contact. Includes bus bars, terminals, circuit breaker screws, and lugs.

3.9 **Live Parts of Electrical Equipment** Live parts to which an employee may be exposed must be de-energized before the employee works on or near them. When this is not possible or certain conditions may cause additional hazards, the safety-related work practices in this program must be used to protect employees from any contact. The practices employed in this program must be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electrical conductors or circuit parts. If the specific task is not identified in this program the appropriate level of management must be contacted before any work is performed.

3.10 **Method of Procedure** A step by step sequence of events for a particular procedure at a specific location and a particular time, defining responsibilities of each party involved in the procedure.

3.11 **Qualified Person** An employee who is familiar with the construction and operation of the equipment to be worked on, the hazards involved in the work to be performed, and must be trained on the safe work practice established by NFPA 70E.

3.12 **Trained** Successfully completed NFPA 70E Training or have been instructed in hazards, proper use of PPE including arc flash protective clothing, area boundaries and safe work or observation procedures.

4.0 **Reference Documents**

4.1 NFPA 70E

4.2 OSHA 1926 subpart K electrical

4.3 NECA NFPA 70E Personal Protective Equipment (PPE) Selector 2009

4.4 HC Control of Hazardous Energy Policy

5.0 **Responsibilities**

5.1 **Superintendent** – Manage the proper use and procedures used to preform work under this program. Enforce the procedures and use of this program for work performed for Haselden Construction.

5.2 **Qualified Electrician** – Follow the parameters and policies of this program along with OSHA and NFPA 70E requirements when performing work that is covered under this program.

6.0 **Implementation**

6.1 **Working on or near exposed energized parts or equipment**
6.1.1 This section applies to work performed on live parts or near enough to be a hazard. See Prohibited, Restricted, Flash Boundary diagram at the end of this section.

6.2 Work on energized equipment

6.2.1 Only qualified personnel may work on electric circuit parts or equipment that have not been de-energized, and only then if the following safe work practices are followed:

6.2.1.1 The person is insulated from the energized parts with gloves or sleeves rated for the voltage involved. No bare handed work is allowed over 50 volts; and

6.2.1.2 The energized part is insulated from other conductive objects at a different potential and from the person; and

6.2.1.3 The person is insulated from all conductive objects at a different potential than the part; and

6.2.1.4 No conductive articles of jewelry and clothing, such as watch bands, bracelets, rings, key chains, necklaces, and ear rings, (Taping is not acceptable), and:

6.2.1.5 Conductive materials and equipment in contact with any part of an employee’s body must be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. Work practices must be instituted to reduce the hazard. (Protective mats, blankets.)

6.2.1.6 Proper illumination must be provided.

6.2.1.7 If work is to be performed in a permit required confined space, refer to Haselden Construction Permit Required Confined Space Program

6.2.2 Work on Energized Electrical Systems is limited to the following situations where de-energization would result in:

6.2.2.1 Interruption of a life support system

6.2.2.2 Deactivation of an emergency alarm system

6.2.2.3 Shut down of hazardous atmosphere ventilation

6.2.3 Work on Energized Electrical Systems is permitted when de-energization is infeasible due to equipment design that does not permit it.

6.2.3.1 Work on Energized Electrical Systems shall be accompanied by a risk analysis prepared by a qualified person.

6.2.3.2 The risk analysis shall incorporate risk reduction methods that will reduce employee exposure to hazardous energy to an acceptable level of risk.
6.3 Additional Requirements

6.3.1 A qualified person shall be trained and familiar with the skills and techniques necessary to determine nominal voltages of exposed live parts, clearances and distances required, proper personal protective equipment, insulating and shielding materials and insulated tool.

6.3.2 UNQUALIFIED PERSONS MUST STAY BACK FROM THE WORK A MINIMUM OF 10 FEET.

6.4 Housekeeping

6.4.1 Insulating equipment or barriers must be provided where employees must perform housekeeping duties near live electrical parts. Electrically conductive cleaning materials may not be used near energized parts unless procedures are followed that will prevent electrical contact. The area must be kept clear and clean at all times. No trash or debris or round stock shall be on the floor. The area around the work must be free of slipping and tripping hazards.

6.5 Interlocks

6.5.1 Only a qualified person following the requirements of this policy may defeat an electrical safety interlock, and then only temporarily, when working on the equipment. The interlock system must be returned to its operable condition when work is complete.

6.6 Means of Egress

6.6.1 Means of egress must be maintained at all times for any work on energized equipment. A second employee should be used at all times when performing work on energized equipment.

6.7 Personal Protective Equipment

6.7.1 Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment that is appropriated for the specific parts of the body to be protected and for the work to be performed.

6.7.2 The following is a list of PPE that maybe necessary:

6.7.2.1 Energized work gloves

6.7.2.2 Hard hats

6.7.2.3 Safety glasses and face shields with chin guard or layered switching hood.

6.7.2.4 Hearing protection

6.7.2.5 Energized work blankets

6.7.2.6 Flame Resistant clothing and suits
6.7.3 Specialized equipment for working on energized equipment shall consist of flash suites rated for the hazard, insulated tools, switching hoods rated for the hazard, and arc face shields rated for the hazard. PPE must be maintained in a safe reliable condition, and a pre-use inspection must be conducted.

6.8 **Barricades**

6.8.1 Barricades shall be used in conjunction with safety signs when and where it is necessary to prevent or limit employee access to work areas, exposing employees to un-insulated energized conductors or circuit parts. Conductive barricades or signs may not be used. If signs and barricades do not provide sufficient warning and protection for electrical hazards, an attendant shall be stationed to warn and protect employees.

6.9 **Use Of Equipment**

6.9.1 Only qualified persons may perform testing work on energized electric circuits or equipment. Visual inspection of all test instruments and equipment and all associated test leads, cables, power cords, probes and connectors shall be performed for defects or damage before the equipment is used. All equipment used including PPE must be rated for the voltages and currents anticipated. All tools used in energized work will be voltage rated and will be inspected prior to use.

6.10 **Energized Electrical Work Permit**

6.10.1 Each employee to work on Energized equipment must complete an Energized Electrical Work Permit provided in this section. The permit will assist the qualified person with a systemic plan to perform the work safely. If the safe work permit is not detailed enough for the task a Method of Procedure (MOP) may be required.

6.11 **Enforcement**

6.11.1 Any employee found to be in violation of this policy would be subjected to disciplinary action up to and including termination.

**7.0 Attachments:**

7.1 Energized Electrical Work Permit
7.2 PPE and Arc Flash Boundary Requirements
7.3 Energized Electrical Risk Matrix
Energized Electrical Work Permit

TASK DESCRIPTION
Job Name: ______________________________ Job #: _____________ Date: ______________
Equipment Name: _______________________ Location: ________________________________
Type of Enclosure: ____________________________________________________________________
Detailed Description of Work to be Performed:
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

JUSTIFICATION
Can Equipment Be De-energized: ___ No ___ Yes
If Not, Reason For Equipment to Remain Energized:
___ Life Emergency ___ Life Safety ___ Greater Hazard or Infeasibility ___ Testing/Trouble Shoot
Describe Reason: _____________________________________________________________________
____________________________________________________________________________________
Customer advised of the risks involved to Personnel, Equipment and Processes ___ Yes ___ No

HAZARD IDENTIFICATION
Exposed Voltages: 120/208 277/480 Rated Fault Current: ______________
Energized Electrical Risk Matrix Item (1 2 3 4)# Bus Amperage: ______________

PERSONAL PROTECTIVE EQUIPMENT REQUIRED
___ Natural Fiber Clothing ___ Leather Gloves ___ Fire Resistant Clothing ___ Hard Hat ___ Insulated Gloves
___ Arc Flash/Blast Suit ___ Eye Protection ___ Hearing Protection

ENVIRONMENTAL PREPARATION
___ Means of Egress ___ Signage ___ Barricades ___ Monitor ___ Adequate Lighting ___ Emergency Plan

TOOLS AND EQUIPMENT REQUIRED
___ Insulated Tools ___ Insulating Sheets ___ Fire Extinguisher ___ Insulating Blankets ___ Rescue Gear
___ First Aid Kit ___ Insulating Mats ___ Test Equipment

QUALIFIED PERSONNEL
Qualified, Trained and Experienced Journeymen CPR / First Aid
Primary Worker #1 ______________________________________
Primary Worker #2 ______________________________________
Primary Worker #3 ______________________________________
Qualified and Trained Assistant / Observer
Assistant #1 ______________________________________
Assistant #2 ______________________________________
Assistant #3 ______________________________________

EMERGENCY PREPAREDNESS
Rescue Method (ropes, hook, etc.) ______________________________________
Emergency Services and Contact Phone Numbers:
Fire Department: ______________________
Ambulance: ______________________
Police: ______________________
Supervisor: ______________________

Project / Service Manager: ______________________

PROCEDURE TO BE FOLLOWED
SEE ATTACHED

REQUIRED SIGNATURES
Supervisor: ______________________ Date: ______________
General Contractor: ______________________ Date: ______________
Facilities Manager: ______________________ Date: ______________
Project / Service Manager: ______________________ Date: ______________

Copy to Safety Manager
## HAZARD CATEGORY REQUIREMENTS

<table>
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<tr>
<th>Hazard Category</th>
<th>PPE REQUIRED</th>
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| 0               | - Long Sleeve Natural Fiber Shirt (Natural Fiber is Cotton or Wool)  
                   - Natural fiber pants  
                   - Leather work boots  
                   - Leather gloves  
                   - Hard hat  
                   - Safety glasses  |
| 1 & 2           | - Voltage Rated Gloves  
                   - Voltage Rated Tools  
                   - 8 cal/cm² Arc Shield with chin guard  
                   - Insertion type Hearing protection  
                   - ALSO REQUIRES LEVEL 0 PPE  |

Note: Suits will be rated at or above 8 cal/cm²

| 3               | Same as Level 2, Upgraded to 25 cal/cm² full protective suit  
                   - Includes double layer switching hood  
                   - ALSO REQUIRES LEVEL 0 PPE  |

Note: Suits will be rated at or above 25 cal/cm²

| 4               | Same as Level 3, Upgraded to 40 cal/cm²  
                   - Includes double layer switching hood  
                   - ALSO REQUIRES LEVEL 0 PPE  |

Note: Suits will be rated at or above 40 cal/cm²

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**MINIMUM SHOCK, FLASH AND APPROACH BOUNDARIES**
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<th>Task to be Performed</th>
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### Opening or Exposing

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#### Energized Electrical Risk Matrix

#### Nominal Voltage 120-240

- **Removal or installation of covers for branch circuit equipment such as wire-ways, junction boxes, and cable trays that does not expose bare energized conductors or circuit parts; equipment must be properly installed, properly maintained and has no evidence of impending failure.**

- **Removal or installation of covers for branch circuit equipment such as wire-ways, junction boxes, and cable trays that does not expose bare energized conductors or circuit parts; equipment may have or appears to have been improperly installed, improperly maintained, or has evidence of impending failure.**

- **Remove panel, disconnect, switchboard or MCC cover with no exposure to unguarded live parts (know condition) this does not include the removal of the dead-front cover**

- **Opening of a control panel door. Examples would be Security control panels, BAS control panels, Industrial control panels that DO NOT contain other electrical systems such as internal VFDS that might exceed the 120 volt parameter of this item.** Level 1 permit required; No arc flash PPE necessary

#### Voltage Testing

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<td>Install/remove or terminate/determinate conductors in a disconnect, panel, switchboard, or MCC <strong>greater than 30 amps</strong></td>
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<td>Insert or remove a panel, switchboard, or MCC breaker; includes racking of an MCC bucket. (existing bus provisions)</td>
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<td>Install or remove enclosure hardware in a disconnect, panel, switchboard, or transformer</td>
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<tr>
<td>Bus modification including mounting fingers or lugs in a disconnect, panel, switchboard, or MCC</td>
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<td>Work on any system above 65KAIC or condition not listed above</td>
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<td>Andy work associated with the service conductors or equipment. This includes the incoming utility compartment of any gear or Service Entrance panel. This also includes removal of covers for inspection or operation of a Main Service Disconnect.</td>
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Blacked out items are defined as high risk activities and may not be permitted to be performed and must be approved by the Safety Director.
1.0 Purpose

1.1 The purpose of this “Asbestos Awareness Program” is to assist Haselden management and Employees in conducting their jobs in a safe manner while not putting themselves, others, or the company at risk due to the potential handling or exposure to PACM/ACM.

2.0 Scope

2.1 The Asbestos Awareness Program applies to all HC activities involving project that may contain PACM/ACM and the Employees whose job responsibilities include:

2.1.1 Marketing, work procurement and preconstruction.

2.1.2 Putting work in place where employees may potentially disturb, impact, or contact PACM and ACM.

2.1.3 Managers and supervisors.

2.2 The following work activities are covered by this program:

2.2.1 Demolition or salvage of structures where asbestos is present;

2.2.2 Removal or encapsulation of materials containing asbestos;

2.2.3 Construction, alteration, repair, maintenance, or renovation of structures or substrates that contain asbestos;

2.2.4 Installation of products containing asbestos;

2.2.5 Asbestos spill/emergency cleanup; and

2.2.6 Transportation, disposal, storage, containment of and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which construction activities are performed.

2.3 The following work is not covered by this program:

2.3.1 Asbestos-containing asphalt roof coatings, cements and mastics.

3.0 Definitions

3.1 Affected Employee – An employee that is not an Authorized Person but is otherwise required to work around Asbestos Work, or where ACM/PACM is present.
3.2 **Asbestos**: chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite, and any of these minerals that have been chemically altered; includes PACM

3.3 **Asbestos Awareness Program Manager** – Designated Safety Representative for a project where PACM/ACM work will be performed.

3.4 **ACM**: Asbestos Containing Materials. Any material containing >1% asbestos

3.5 **Authorized Person** – an employee authorized by the employer to perform work in a regulated area.

3.6 **Building/Facility Owner**: The legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building or facility in which activities covered by this standard take place.

3.7 **Class I Asbestos Work**: Activities involving the removal of TSI and surfacing ACM and PACM.

3.8 **Class II Asbestos Work**: Activities involving the removal of ACM that is not thermal system insulation or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

3.9 **Class III Asbestos Work**: Repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

3.10 **Class IV Asbestos Work**: Maintenance and custodial construction activities during which Employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II and III activities.

3.11 **Competent Person**: An employee capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure and has the authority to take prompt corrective action to eliminate them. The Competent Person is trained in accordance with EPA requirements for the class of asbestos work being performed.

3.12 **Disturbance**: Activities that disrupts the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM.

3.13 **Friable**: Material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure; includes previously non-friable material after it has become damaged so that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

3.14 **Intact**: ACM that has not crumbled, been pulverized or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

3.15 **Negative Initial Exposure Assessment** - a demonstration by the employer, which complies with the criteria in 29 CFR 1926.1101 paragraph (f)(2)(iii) of this section, that employee exposure during an operation is expected to be consistently below the PELs.

3.16 **PACM**: Thermal system insulation and surfacing material found in buildings constructed no later than 1980. Presumed Asbestos Containing Material to be treated as ACM unless rebutted. Note: The State of Colorado has more restrictive
requirements and requires inspection of buildings built as late as 1988. All buildings built after 1988 require certification by the Architect/Engineer that no ABM was specified. See Paragraph 6.1, Inspection and Notification.

3.17 **Surfacing ACM:** Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes) and that contains more than 1% asbestos.

3.18 **TSI:** Thermal System Insulation ACM – means ACM applied to pipes, fittings, boilers, breaching tanks, ducts or other structural components to prevent heat loss or gain and that contains more than 1% asbestos.

### 4.0 Reference Documents


4.4 National Emissions Standards for Hazardous Air Pollutants (NESHAP)


4.8 OSHA Hazardous Waste Operations. 29 CFR 1910.120.

4.9 USEPA. Asbestos. 40 CFR 763.


4.11 Regulation No. 8 Part B – Asbestos Air Quality Control Commission, Colorado Department of Public Health and Environment

4.12 Colorado Department of Public Health and Environment www.colorado.gov/cdphe

### 5.0 Responsibilities

5.1 **Asbestos Awareness Program Manager** shall be responsible for the following tasks:

5.1.1 Assure the implementation of the Asbestos Awareness Program;

5.1.2 Assuring that all HC Employee activities related to the Asbestos Awareness Program are properly coordinated to include the participation of affected employees.
5.1.3 Developing and maintaining job specific work practices for work conducted where there is the presence of PACM or ACM that is encapsulated effectively so that it is not disturbed.

5.1.4 Ensure that any employees tasked to address the presence of asbestos are qualified and certified in accordance with applicable federal, state and local standards;

5.2 Preconstruction Employees and Estimators shall be responsible for the following tasks:

5.2.1 Exercise due diligence in gathering information about the presence of PACM/ACM in customer facilities while in the process of preparing bids and job specifications. This includes obtaining customer site Asbestos records including any certified asbestos sampling and identification information. A draft Request for Information letter is attached.

5.2.2 Assure that job bids take into account the presence of PACM/ACM.

5.3 Supervisors and Departmental Managers shall be responsible for the following:

5.3.1 Assure that all HC employee activities related to the Asbestos Awareness Program are properly coordinated to include the participation of all affected parties.

5.3.2 Ensure that all affected parties receive training and technical assistance.

5.3.3 Gather and maintain asbestos-related training records in accordance with Federal, State and Local requirements for (HAZCOM) and Asbestos.

5.3.4 Assure that all planned construction and maintenance activities in areas known to contain PACM or ACM are conducted in a manner that avoids disturbing the material, and prevents occupant exposure and contamination of the building.

5.3.5 Assure that a record is kept of all incidents involving PACM and ACM utilizing the “PACM/ACM Incident Report Form” in this program. Assure that all required signatures are obtained and a copy is forwarded to the Asbestos Awareness Program Manager and the Director of Safety.

5.3.6 When PACM and ACM is damaged, stop work immediately and take measures to evacuate and barricade the immediate area, and call a qualified asbestos inspection and control firm to test and monitor as required. Do not resume work until clearance is given.

5.3.7 Assure that any Employee that is suspected to have been exposed to ACM above the PEL or excursion limits is notified as soon as HC is notified of possible exposure. Notifications are to be sent via registered mail.

5.3.8 Make arrangements for Employee medical monitoring in a timely manner. All records are to be maintained for 30 years plus the length of Employee’s employment with HC.
5.3.9 Planning, discussing and documenting the details of all work activities where there is the potential for contact with PACM/ACM and how the work will be safely conducted.

5.4 **Employees** shall be responsible for:

5.4.1 Understanding and following the details of the HC Asbestos Awareness Program.

5.4.2 Attending and successfully completing all required Asbestos-Related Training.

5.4.3 Proper conduct in maintaining personal safety and the safety of others.

5.4.4 Stopping work immediately if PACM/ACM is suspected, disturbed or damaged, and bringing it to the attention of the HC supervisor or the HC Asbestos Awareness Program Manager.

5.4.5 Do not stabilize the area unless properly trained to do so and the proper equipment is available.

6.0 **Implementation**

6.1 **Inspection and Notification**

6.1.1 Notification: A written application to CDPHE for a notice/permit is required, along with payment of a fee and a ten (10) working-day notification period (emergencies may be excluded) before the removal (abatement) of regulated asbestos-containing materials.

6.1.2 For ALL Renovation Projects:

6.1.2.1 Buildings of any age may contain ACM; even those newly built may have ACM.

6.1.2.2 Inspection: If the structures/components to be disturbed exceed the trigger levels, they must be inspected for asbestos by a Colorado-certified asbestos building inspector, unless the building was built after October 12, 1988, AND the architect or engineer who built it signs and submits documentation showing that no ACM was specified or used in the construction of the building – then no inspection is needed.

6.1.2.3 Asbestos Consulting Firms and asbestos building inspectors can be found at www.colorado.gov/cdphe/asbestos.

6.1.2.4 A Colorado-certified General Abatement Contractor (GAC) must remove ACM that is regulated or may become regulated before it is disturbed by renovation or demolition activities.

6.1.2.5 ALL ACM waste must be disposed of at an approved asbestos waste disposal site – regardless of the quantity or the necessity for a notice/permit.

6.1.3 **Demolition, Destructive Salvage, House Moving**
6.1.3.1 If demolition, destructive salvage, de-construction, burning, destruction, dismantling, dynamiting, implosion, leveling, pulling down, pulverizing, razing, tearing down, wrecking all of a structure or structural components, or house moving is performed, State and Federal regulations may apply even when there is NO asbestos in the facility.

6.1.3.2 Demolition means: the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

6.1.3.3 For ALL Demolition Projects:

6.1.3.3.1 Inspection: the building or area of the building to be demolished must be inspected for asbestos by a Colorado-certified asbestos inspector.

6.1.3.3.2 Asbestos Removal (if necessary) may have to be performed by a Colorado-certified GAC.

6.1.3.3.3 Removal, in accordance with Regulation No. 8, Part B, is required if the amount of asbestos containing material that is friable or will become friable during demolition exceeds the trigger levels.

6.1.3.4 A Demolition Notification Application Form must be submitted to the CDPHE, even if no asbestos was found during the inspection, along with payment of a notification fee and a ten (10) working-day notification period that is required before the demolition can commence.

6.1.4 During Demolition:

6.1.4.1 Recycling of materials, such as concrete or wood, that are bonded or contaminated with asbestos-containing material (ACM), such as floor tile or mastic, is NOT permitted.

6.1.4.2 Demolition of a building that has non-friable asbestos-containing vinyl asbestos tile (VAT) or tar-impregnated roofing materials remaining must be completed without causing the asbestos-containing materials to become friable. Concrete floors covered with floor tile shall be removed in large sections if possible. Operations such as crushing, pneumatic jacking, etc. of materials containing asbestos are not permitted.

6.1.4.3 When imploding or burning a structure, ALL asbestos-containing material, regardless of type or quantity, MUST be removed prior to demolition.

6.1.5 No HC Employee is permitted to work in a situation where they may disturb (i.e. drill, saw, sand, handle, sweep or otherwise manipulate) PACM/ACM or be exposed to airborne concentrations of asbestos in excess of the OSHA Permissible Exposure Limit (PEL) or excursion limit.
6.1.6 Before contract project work begins HC must obtain from the building owner a certification as to the presence of ACM in the proposed work area. Absent this information all PACM will be treated as ACM. (See attached “Request for Information” letter). This letter should be sent once it is determined that conditions in Paragraph 6.1.2.2 apply. This certification must be from a licensed asbestos inspector in the specific state or location.

6.2 General Policy

6.2.1 As part of the initial inspection of the facility/building by HC, the management of existing PACM /ACM must be considered before work begins. At a minimum, any of these materials found to be damaged or otherwise unstable will require stabilization. This may include repair-in-place or removal. The surrounding areas must be thoroughly cleaned, inspected and a clearance is obtained before proceeding with other work.

6.2.2 Before project work begins, the customer will be notified that HC Employees are not to disturb PACM/ACM. Where there is the potential for disturbance by HC employees performing work, the material must be abated by a Colorado Certified General Abatement Contractor.

6.2.3 Employees required to work on a job site where ACM or PACM has been identified, or where it has been properly encapsulated and labeled, must be notified of its location, and warning signs posted, prior to commencing work.

6.2.4 In the course of work activities, should HC Employees encounter PACM/ACM that may disturbed by their work, if they disturb PACM/ACM, or if they discover PACM/ACM that has been disturbed, they must stop work and notify their supervisor. Failure to do this may result in disciplinary action up to and including termination.

6.2.5 When notified by employees of the discovery of the presence of or damage to PACM/ACM, the HC supervisor shall request that the Owner’s representative arrange and pay for an inspection of the material by a state certified asbestos inspector, and arrange for abatement if required. Under no circumstances will HC Employees perform ACM abatement of any Class. Failure to follow this protocol may result in disciplinary actions up to and including termination of the site supervisor. In the absence of data to the contrary, PACM will be treated as ACM.

6.2.6 When ACM has been unexpectedly found on the job site, the HC Project Manager shall notify the Owner’s Representative in writing using the “PACM/ACM Incident Report Form”, attached.

6.2.7 While the inspection process is continuing, all work in the immediate work area will be stopped. Work may commence when the ACM test is negative or the ACM has been abated or encapsulated and material and clearance air monitoring results indicate levels at or below 0.1 fibers/cubic centimeter. Air sampling must be overseen by a certified industrial hygienist (CIH).
6.2.8 Reports of PACM/ACM abatement, encapsulation, repair and clearance shall be obtained by the HC Project Manager from the Owner’s representative.

6.2.9 Any HC Employee who was or may have been exposed to ACM above the OSHA PEL will be notified in writing. A sample letter is attached. A copy of the letter must be placed in the Employee’s file and kept for 30 years plus length of his employment. Arrangements for a complete physical must be made for the Employee in a timely fashion. The physician must be a physician familiar with the symptoms and pathology of asbestos exposure.

6.2.10 PACM/ACM shall be periodically monitored for changes in condition. This periodic inspection shall be performed at least quarterly during a project or as conditions require.

6.3 **Training Requirements**

6.3.1 All Employees with the potential for exposure to PACM/ACM will be trained as to the contents of this program including descriptions of PACM/ACM and possible locations, effects of ACM, and what to do if PACM/ACM is suspected in the work environment.

6.3.2 All new HC Employees shall receive information relating to the potential locations and hazards of asbestos during the on-boarding process. Employees will be informed of the potential presence of PACM and/or ACM as well as some precautions that must be observed during their work activities.

6.3.3 Training will be conducted annually thereafter if necessary.

6.3.4 Training shall be documented, and training records will be maintained in the home office.

6.3.5 HC Employees who could potentially disturb PACM/ACM should receive Asbestos Awareness Training. **UNDER NO CIRCUMSTANCES IS ANY HC EMPLOYEE TO WORK IN AN ENVIRONMENT WHERE THERE IS AIRBORNE ASBESTOS IN EXCESS OF THE PEL AND/OR THE EXCURSION LIMIT OR WHERE THEY WILL DISTURB PACM/ACM.**

6.3.6 The training is **NOT** intended to teach removal or repair procedures or practices. Completion of this training does **NOT** qualify Employees to handle or work with PACM/ACM.

6.3.7 The required elements of an asbestos awareness program include, at a minimum, the following topics:

6.3.7.1 Health effects of Asbestos

6.3.7.2 Potential locations where PACM and/or ACM can be found in a building.

6.3.7.3 Recognition of ACM and PACM damage and deterioration

6.3.7.4 OSHA requirements relating to housekeeping
6.3.7.5  Proper response to fiber release episodes

6.4  Signs and Labels

6.4.1  Must be posted by the building owner.

6.4.2  Signs posted and visible at the entrance to mechanical rooms and into which Employees may reasonably be expected to enter and which contain PACM/ACM. They are to identify the material present, its location, and appropriate work practices to be followed to ensure that the PACM/ACM is not disturbed.

6.4.3  Labels may be used as an alternative to signs to ensure that the proper work practices are observed and that PACM/ACM is not disturbed. Labels must be affixed to piping and equipment affixed to pipes and pieces of equipment containing PACM/ACM.

6.4.4  Required wording for labels is:

```
DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED EMPLOYEE ONLY
```

Labels must also contain a warning statement against breathing asbestos fibers.

7.0  Attachments:

7.1  Sample List Of Suspect Asbestos-Containing Materials

7.2  Common Locations Of Suspect Asbestos-Containing Materials

7.3  HC PACM/ACM Incident Report Form

7.4  Asbestos Awareness Program Attendance Roster

7.5  Requesting for Asbestos Information - Sample Letter

7.6  Potential Asbestos Exposure Notification - Sample Letter

7.7  Physical Examination Authorization - Sample Letter

7.8  29 CFR 1926.1101 Appendix F Work Practices and Engineering Controls for Class I Asbestos Operations (Non-Mandatory)
1.0 Purpose

1.1 The purpose of this “Asbestos Awareness Program” is to assist Haselden management and Employees in conducting their jobs in a safe manner while not putting themselves, others, or the company at risk due to the potential handling or exposure to PACM/ACM.

2.0 Scope

2.1 The Asbestos Awareness Program applies to all HC activities involving projects that may contain PACM/ACM and the Employees whose job responsibilities include:

2.1.1 Marketing, work procurement and preconstruction.

2.1.2 Putting work in place where employees may potentially disturb, impact, or contact PACM and ACM.

2.1.3 Managers and supervisors.

2.2 The following work activities are covered by this program:

2.2.1 Demolition or salvage of structures where asbestos is present;

2.2.2 Removal or encapsulation of materials containing asbestos;

2.2.3 Construction, alteration, repair, maintenance, or renovation of structures or substrates that contain asbestos;

2.2.4 Installation of products containing asbestos;

2.2.5 Asbestos spill/emergency cleanup; and

2.2.6 Transportation, disposal, storage, containment of and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which construction activities are performed.

2.3 The following work is not covered by this program:

2.3.1 Asbestos-containing asphalt roof coatings, cements and mastics.

3.0 Definitions
3.1 **Affected Employee** – An employee that is not an Authorized Person but is otherwise required to work around Asbestos Work, or where ACM/PACM is present.

3.2 **Asbestos**: chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite, and any of these minerals that have been chemically altered; includes PACM

3.3 **Asbestos Awareness Program Manager** – Designated Safety Representative for a project where PACM/ACM work will be performed.

3.4 **ACM**: Asbestos Containing Materials. Any material containing >1% asbestos

3.5 **Authorized Person** – an employee authorized by the employer to perform work in a regulated area.

3.6 **Building/Facility Owner**: The legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building or facility in which activities covered by this standard take place.

3.7 **Class I Asbestos Work**: Activities involving the removal of TSI and surfacing ACM and PACM.

3.8 **Class II Asbestos Work**: Activities involving the removal of ACM that is not thermal system insulation or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

3.9 **Class III Asbestos Work**: Repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

3.10 **Class IV Asbestos Work**: Maintenance and custodial construction activities during which Employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II and III activities.

3.11 **Competent Person**: An employee capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure and has the authority to take prompt corrective action to eliminate them. The Competent Person is trained in accordance with EPA requirements for the class of asbestos work being performed.

3.12 **Disturbance**: Activities that disrupts the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM.

3.13 **Friable**: Material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure; includes previously non-friable material after it has become damaged so that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

3.14 **Intact**: ACM that has not crumbled, been pulverized or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

3.15 **Negative Initial Exposure Assessment** - a demonstration by the employer, which complies with the criteria in 29 CFR 1926.1101 paragraph (f)(2)(iii) of this section, that employee exposure during an operation is expected to be consistently below the PELs.
3.16 PACM: Thermal system insulation and surfacing material found in buildings constructed no later than 1980. Presumed Asbestos Containing Material to be treated as ACM unless rebutted. Note: The State of Colorado has more restrictive requirements and requires inspection of buildings built as late as 1988. All buildings built after 1988 require certification by the Architect/Engineer that no ABM was specified. See Paragraph 6.1, Inspection and Notification.

3.17 RACM: Regulated Asbestos Containing Material

3.18 Surfacing ACM: Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes) and that contains more than 1% asbestos.

3.19 TSI: Thermal System Insulation ACM – means ACM applied to pipes, fittings, boilers, breaching tanks, ducts or other structural components to prevent heat loss or gain and that contains more than 1% asbestos.

4.0 Reference Documents


4.6 National Emissions Standards for Hazardous Air Pollutants (NESHAP)


4.8 OSHA Hazardous Waste Operations. 29 CFR 1910.120.

4.9 USEPA. Asbestos. 40 CFR 763.


4.11 State of Wyoming General Emissions Standards

4.12 Wyoming Air Quality Regulations

5.0 Responsibilities

5.1 Asbestos Awareness Program Manager shall be responsible for the following tasks:

5.1.1 Assure the implementation of the Asbestos Awareness Program;
5.1.2 Assuring that all HC Employee activities related to the Asbestos Awareness Program are properly coordinated to include the participation of affected employees.

5.1.3 Developing and maintaining job specific work practices for work conducted where there is the presence of PACM or ACM that is encapsulated effectively so that it is not disturbed.

5.1.4 Ensure that any employees tasked to address the presence of asbestos are qualified and certified in accordance with applicable federal, state and local standards;

5.2 Preconstruction Employees and Estimators shall be responsible for the following tasks:

5.2.1 Exercise due diligence in gathering information about the presence of PACM/ACM in customer facilities while in the process of preparing bids and job specifications. This includes obtaining customer site Asbestos records including any certified asbestos sampling and identification information. A draft Request for Information letter is attached.

5.2.2 Assure that job bids take into account the presence of PACM/ACM.

5.3 Supervisors and Department Managers shall be responsible for the following:

5.3.1 Assure that all HC employee activities related to the Asbestos Awareness Program are properly coordinated to include the participation of all affected parties.

5.3.2 Ensure that all affected parties receive training and technical assistance.

5.3.3 Gather and maintain asbestos-related training records in accordance with Federal, State and Local requirements for (HAZCOM) and Asbestos.

5.3.4 Assure that all planned construction and maintenance activities in areas known to contain PACM or ACM are conducted in a manner that avoids disturbing the material, and prevents occupant exposure and contamination of the building.

5.3.5 Assure that a record is kept of all incidents involving PACM and ACM utilizing the "PACM/ACM Incident Report Form" in this program. Assure that all required signatures are obtained and a copy is forwarded to the Asbestos Awareness Program Manager and the Director of Safety.

5.3.6 When PACM and ACM is damaged, stop work immediately and take measures to evacuate and barricade the immediate area, and call a qualified asbestos inspection and control firm to test and monitor as required. Do not resume work until clearance is given.

5.3.7 Assure that any Employee that is suspected to have been exposed to ACM above the PEL or excursion limits is notified as soon as HC is notified of possible exposure. Notifications are to be sent via registered mail.
5.3.8 Make arrangements for Employee medical monitoring in a timely manner. All records are to be maintained for 30 years plus the length of Employee’s employment with HC.

5.3.9 Planning, discussing and documenting the details of all work activities where there is the potential for contact with PACM/ACM and how the work will be safely conducted.

5.4 Employees shall be responsible for:

5.4.1 Understanding and following the details of the HC Asbestos Awareness Program.

5.4.2 Attending and successfully completing all required Asbestos-Related Training.

5.4.3 Proper conduct in maintaining personal safety and the safety of others.

5.4.4 Stopping work immediately if PACM/ACM is suspected, disturbed or damaged, and bringing it to the attention of the HC supervisor or the HC Asbestos Awareness Program Manager.

5.4.5 Do not stabilize the area unless properly trained to do so and the proper equipment is available.

6.0 Implementation

6.1 Inspection and Notification

6.1.1 Call the Wyoming Department of Environmental Quality, Air Quality Division and discuss their regulatory requirements before bidding, subcontracting or starting work involving asbestos.

6.1.2 Wyoming does not have a licensing or registration program for asbestos inspectors or abatement firms. A consultant or firm trained in accordance with the EPA Asbestos Model Accreditation Plan, or a state plan from another state that meets the requirements of the EPA Plan, must be used.

6.1.3 A Notification of Demolition or Renovation shall be filed with the State of Wyoming at least 10 working days prior to any activity involving asbestos stripping, breaking or removal.

6.1.4 Work shall not begin on a date different from that of the Notification. If the scheduled start date changes, a revised 10 day Notification shall be filed.

6.1.5 For ALL Renovation Projects:

6.1.5.1 Buildings of any age may contain ACM; even those newly built may have ACM.

6.1.6 During Demolition:
6.1.6.1 Recycling of materials, such as concrete or wood, that are bonded or contaminated with asbestos-containing material (ACM), such as floor tile or mastic, is NOT permitted.

6.1.6.2 Demolition of a building that has non-friable asbestos-containing vinyl asbestos tile (VAT) or tar-impregnated roofing materials remaining must be completed without causing the asbestos-containing materials to become friable. Concrete floors covered with floor tile shall be removed in large sections if possible. Operations such as crushing, pneumatic jacking, etc. of materials containing asbestos are not permitted.

6.1.6.3 When imploding or burning a structure, ALL asbestos-containing material, regardless of type or quantity, MUST be removed prior to demolition.

6.1.7 No HC Employee is permitted to work in a situation where they may disturb (i.e. drill, saw, sand, handle, sweep or otherwise manipulate) PACM/ACM or be exposed to airborne concentrations of asbestos in excess of the OSHA Permissible Exposure Limit (PEL) or excursion limit.

6.1.8 Before contract project work begins HC must obtain from the building owner a certification as to the presence of ACM in the proposed work area. Absent this information all PACM will be treated as ACM. (See attached “Request for Information” letter). This letter should be sent once it is determined that conditions in Paragraph 6.1.2.2 apply. This certification must be from a licensed asbestos inspector in the specific state or location.

6.2 Asbestos Removal Requirements for Wyoming Work

6.2.1 Removal of any quantity of Asbestos Containing Material shall follow these procedures.


6.2.3 If a requirement of this policy is in conflict with any governing regulation or standard, the more stringent requirement shall apply.

6.2.4 Remove all RACM from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal. RACM need not be removed before demolition if it meets the criteria for exclusion contained in WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION, STANDARDS AND REGULATIONS, General Emission Standards, CHAPTER 3: Section 8, Standards for Demolition and Renovation, (iii)(A).

6.2.5 An individual trained in the provisions of 40 CFR Part 61, Subpart M shall be on-site during all demolition and renovation activities, and shall carry training certification at all times.

6.2.6 Follow removal, disposal recordkeeping and certification requirements found in the Wyoming Department of Environmental Quality standards.
6.3 General Policy

6.3.1 As part of the initial inspection of the facility/building by HC, the management of existing PACM /ACM must be considered before work begins. At a minimum, any of these materials found to be damaged or otherwise unstable will require stabilization. This may include repair-in-place or removal. The surrounding areas must be thoroughly cleaned, inspected and a clearance is obtained before proceeding with other work.

6.3.2 Before project work begins, the customer will be notified that HC Employees are not to disturb PACM/ACM. Where there is the potential for disturbance by HC employees performing work, the material must be abated by a Colorado Certified General Abatement Contractor.

6.3.3 Employees required to work on a job site where ACM or PACM has been identified, or where it has been properly encapsulated and labeled, must be notified of its location, and warning signs posted, prior to commencing work.

6.3.4 In the course of work activities, should HC Employees encounter PACM/ACM that may disturbed by their work, if they disturb PACM/ACM, or if they discover PACM/ACM that has been disturbed, they must stop work and notify their supervisor. Failure to do this may result in disciplinary action up to and including termination.

6.3.5 When notified by employees of the discovery of the presence of or damage to PACM/ACM, the HC supervisor shall request that the Owner’s representative arrange and pay for an inspection of the material by a state certified asbestos inspector, and arrange for abatement if required. Under no circumstances will HC Employees perform ACM abatement of any Class. Failure to follow this protocol may result in disciplinary actions up to and including termination of the site supervisor. In the absence of data to the contrary, PACM will be treated as ACM.

6.3.6 When ACM has been unexpectedly found on the job site, the HC Project Manager shall notify the Owner’s Representative in writing using the “PACM/ACM Incident Report Form”, attached.

6.3.7 While the inspection process is continuing, all work in the immediate work area will be stopped. Work may commence when the ACM test is negative or the ACM has been abated or encapsulated and material and clearance air monitoring results indicate levels at or below 0.1 fibers/cubic centimeter. Air sampling must be overseen by a certified industrial hygienist (CIH).

6.3.8 Reports of PACM/ACM abatement, encapsulation, repair and clearance shall be obtained by the HC Project Manager from the Owner’s representative.

6.3.9 Any HC Employee who was or may have been exposed to ACM above the OSHA PEL will be notified in writing. A sample letter is attached. A copy of the letter must be placed in the Employee’s file and kept for 30 years plus length of his employment. Arrangements for a complete physical must be made for the Employee in a timely fashion. The physician must be a physician familiar with the symptoms and pathology of asbestos exposure.
6.3.10 PACM/ACM shall be periodically monitored for changes in condition. This periodic inspection shall be performed at least quarterly during a project or as conditions require.

6.4 Training Requirements

6.4.1 All Employees with the potential for exposure to PACM/ACM will be trained as to the contents of this program including descriptions of PACM/ACM and possible locations, effects of ACM, and what to do if PACM/ACM is suspected in the work environment.

6.4.2 All new HC Employees shall receive information relating to the potential locations and hazards of asbestos during the on-boarding process. Employees will be informed of the potential presence of PACM and/or ACM as well as some precautions that must be observed during their work activities.

6.4.3 Training will be conducted annually thereafter if necessary.

6.4.4 Training shall be documented, and training records will be maintained in the home office.

6.4.5 HC Employees who could potentially disturb PACM/ACM should receive Asbestos Awareness Training. **UNDER NO CIRCUMSTANCES IS ANY HC EMPLOYEE TO WORK IN AN ENVIRONMENT WHERE THERE IS AIRBORNE ASBESTOS IN EXCESS OF THE PEL AND/OR THE EXCURSION LIMIT OR WHERE THEY WILL DISTURB PACM/ACM.**

6.4.6 The training is **NOT** intended to teach removal or repair procedures or practices. Completion of this training does **NOT** qualify Employees to handle or work with PACM/ACM.

6.4.7 The required elements of an asbestos awareness program include, at a minimum, the following topics:

6.4.7.1 Health effects of Asbestos

6.4.7.2 Potential locations where PACM and/or ACM can be found in a building.

6.4.7.3 Recognition of ACM and PACM damage and deterioration

6.4.7.4 OSHA requirements relating to housekeeping

6.4.7.5 Proper response to fiber release episodes

6.5 Signs and Labels

6.5.1 Must be posted by the building owner.

6.5.2 Signs posted and visible at the entrance to mechanical rooms and into which Employees may reasonably be expected to enter and which contain PACM/ACM. They are to identify the material present, its location, and appropriate work practices to be followed to ensure that the PACM/ACM is not disturbed.
6.5.3 Labels may be used as an alternative to signs to ensure that the proper work practices are observed and that PACM/ACM is not disturbed. Labels must be affixed to piping and equipment affixed to pipes and pieces of equipment containing PACM/ACM.

6.5.4 Required wording for labels is:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED EMPLOYEE ONLY

Labels must also contain a warning statement against breathing asbestos fibers.

7.0 Attachments:

7.1 Sample List Of Suspect Asbestos-Containing Materials
7.2 Common Locations Of Suspect Asbestos-Containing Materials
7.3 HC PACM/ACM Incident Report Form
7.4 Asbestos Awareness Program Attendance Roster
7.5 Requesting for Asbestos Information - Sample Letter
7.6 Potential Asbestos Exposure Notification - Sample Letter
7.7 Physical Examination Authorization - Sample Letter
7.8 29 CFR 1926.1101 Appendix F Work Practices and Engineering Controls for Class I Asbestos Operations (Non-Mandatory)
SAMPLE LIST OF SUSPECT ASBESTOS-CONTAINING MATERIALS

The following list does not include every product/material that may contain asbestos. It is intended as a general guide to show which types of materials may contain asbestos.

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Cement Pipes</td>
<td>Elevator Brake Shoes</td>
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<td>Cement Wallboard</td>
<td>HVAC Duct Insulation</td>
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<tr>
<td>Cement Siding</td>
<td>Boiler Insulation</td>
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<tr>
<td>Asphalt Floor Tile</td>
<td>Breaching Insulation</td>
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<tr>
<td>Vinyl Floor Tile</td>
<td>Ductwork Flexible Fabric Connections</td>
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<tr>
<td>Vinyl Sheet Flooring</td>
<td>Cooling Towers</td>
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<tr>
<td>Flooring Backing</td>
<td>Pipe Insulation (corrugated air-cell, block, etc.)</td>
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<tr>
<td>Construction Mastics (floor tile, carpet, ceiling tile, etc.)</td>
<td>Heating and Electrical Ducts</td>
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<tr>
<td>Acoustical Plaster</td>
<td>Fire Blankets</td>
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<tr>
<td>Decorative Plaster</td>
<td>Electrical Panel Partitions</td>
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<tr>
<td>Textured Paints/Coatings</td>
<td>Electrical Cloth</td>
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<tr>
<td>Ceiling Tiles and Lay-in Panels</td>
<td>Electric Wiring Insulation</td>
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<tr>
<td>Spray-Applied Insulation</td>
<td>Chalkboards</td>
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<tr>
<td>Blown-in Insulation</td>
<td>Roofing Shingles</td>
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<tr>
<td>Fireproofing Materials</td>
<td>Roofing Felt</td>
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<tr>
<td>Taping Compounds (thermal)</td>
<td>Base Flashing</td>
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<tr>
<td>Packing Materials (for wall/floor penetrations)</td>
<td>Thermal Paper Products</td>
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<td>High Temperature Gaskets</td>
<td>Joint Compounds</td>
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<tr>
<td>Laboratory Hoods/Table Tops</td>
<td>Caulking/Putties</td>
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<td>Laboratory Gloves</td>
<td>Adhesives</td>
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<td>Fire Curtains</td>
<td>Wallboard</td>
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<td>Elevator Equipment Panels</td>
<td>Vinyl Wall Coverings</td>
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<td></td>
<td>Spackling Compounds</td>
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</tbody>
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COMMON LOCATIONS OF SUSPECT ASBESTOS-CONTAINING MATERIALS

Boiler Rooms
Mechanical Rooms
Crawl Spaces
Pipe Chases/Tunnels
Laboratories
Air Handling Units
Pits
Tanks
Vaults

Any Structure Built Prior To 1980

Haselden Construction
PACM/ACM Incident Report Form
(To be filled out by the Team Member and Supervisor.)
Report incidents immediately to:
Director of Safety: 720-341-7943

Job/Incident Location: __________________________ Date Reported: __________________________

Date and Time of Occurrence: __________________________ a.m.  p.m.

Incident Description: ________________________________________________________________

Type of Presumed or Asbestos Containing Material (PACM/ACM) involved:

- PACM/ACM located in an air plenum, air shaft, or air stream?
- Sprayed-on or troweled-on ceilings or walls
- Sprayed-on or troweled-on structural members
- Insulation on pipes, tanks, or boilers
- Other (Describe) __________________________

Has building owner and Sub-Contractors been informed of incident?  Yes  No

Date and Time of Notification: __________________________

Name of Person Notified: __________________________

Acts/conditions contributing to this incident:

____________________________________________________________

Actions taken on site in response to this incident:

____________________________________________________________

What is being/What should be done to prevent this type of incident from happening again (This site/other HC sites):

____________________________________________________________

Note: Although asbestos is hazardous, the risk of asbestos-related disease depends upon the fiber concentration and length of exposure to airborne asbestos fibers.

Required Signatures:

Supervisor __________________________ Date ____________

Team Member __________________________ Date ____________

Site Superintendent __________________________ Date ____________
Asbestos Awareness Program
Attendance Roster

Instructor __________________________ Date __________

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<thead>
<tr>
<th>Name/Printed</th>
<th>Social Security Number</th>
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January 5, 2018

Mr. John Smith
ABC Construction
123 Main Street
City, State 12345

RE: Request for Asbestos Information

Dear Mr. Smith:

Haselden Construction (HC) currently is proposing to bid (type of work) at your 123 Main Street facility. We understand that the original build date of the facility is pre-1988.

The OSHA Asbestos Standard 29CFR 1926.1101(k) contains the following:

Duties of building and facility owners.

Before work is begun, building and facility owners shall determine the presence, location, and quantity of asbestos containing material (ACM) and/or potentially asbestos containing material (PACM) at the work site.

Building and/or facility owners shall notify the following persons of the presence, location and quantity of ACM or PACM, at the work sites in their buildings and facilities. Notification either shall be in writing, or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representatives:

1. Prospective employers applying or bidding for work whose Team Members reasonably can be expected to work in or adjacent to areas containing such material;

2. On multi-employer work sites, all employers of Team Members who will be performing work within or adjacent to areas containing such materials;

We require this information in order to provide for the health and safety of HC Team Members, maintain regulatory compliance, and to accurately bid this project.

Please forward to me, as soon as possible, all asbestos-related documentation including the results of all building asbestos identification surveys especially detailing the presence, location, quantity, and type of ACM or PACM in the area where our work will be conducted. This documentation must signed by a licensed asbestos inspector (or equivalent). In addition, please provide documentation relating to any asbestos abatement and air monitoring results pertaining to these areas. A licensed asbestos project monitor (or equivalent) must sign this documentation. We intend to forward the documentation you submit to us to our environmental consultants for their review. If there is ACM and/or PACM in the area we must be made aware of its presence or we must have a certification signed by a representative of your company that such material is not present. Unless documentation is provided to the contrary, all PACM will be considered as ACM...
and treated accordingly. The discovery of ACM on other projects has resulted in project delays and additional costs being incurred.

It is HC’s policy that our Team Members are not permitted to work in areas where there is:

- Airborne exposure to asbestos.

- The potential to disturb asbestos that may be present but intact without a precaution to assure that it is not disturbed.

HC does not abate, remove, alter, repair, encapsulate or dispose of ACM or PACM. If asbestos identification surveys and/or abatement work is necessary before we start our work in your facility, we will cooperate with you on any related scheduling issues that may arise.

Thank you for your cooperation. Please contact me if there are any questions or if we need to discuss any aspect of this request.

Regards,

John H.
Project Manager
January 5, 2018

Mr. John Smith  
123 Main Street  
City, State 12345  

RE: **Potential Asbestos Exposure Notification**  

Dear Mr. Smith:

This letter is to inform you that asbestos has been identified on the ABC job site, Anytown, US. In accordance with 29 CFR 1910.1001, we are notifying you that there may have been an exposure.

We are requesting that you see Dr. Goodhealth at the Anytown medical center located at 133 East 34th Street, Anytown US for a full physical. This physical would be at no charge to you, as HC Security Services will pay the fees for the physical and any tests performed at the physical.

An appointment with Dr. Goodhealth has already been made for you by HC.  

**Your appointment is set for Thursday, June 29, 2000 at 10:00 a.m.**

Attached is an authorization letter indicating payment procedures, etc. Please be sure to bring this letter with you to your appointment so you will not be charged for this exam.

I am sure you are aware of the importance of this “Physical”, therefore it is imperative that you try to keep your appointment date and time. If you need directions to Dr. Goodhealth’s office or need to change your appointment date or time, please contact Sue Bell at the Anytown HC office at (123) 456-7890.

If you have any questions or problems pertaining to any of the above, feel free to contact me at your convenience.

Truly yours,  
Haselden Construction  

Rick Reubelt  
Director of Health and Safety.
January 5, 2018

Dr. John Goodhealth  
123 Main Street  
City, State 12345  

RE:  **Billy Smith**

Dear Dr. Goodhealth:

Haselden Construction (HC) hereby authorizes the office of Dr. Goodhealth to perform a physical examination to determine potential asbestos exposure, and the extent of such exposure, if any, on the above referenced Team Member.

HC will be responsible for all costs incurred with this examination.

Please forward a bill, referencing the Team Members name to the address below. Payment will be made to your office as quickly as possible.

**Send Bill To:** Haselden Construction  
6950 South Potomac St  
Centennial Co. 80112  
Attn: Rick Reubelt

Truly yours,  
Haselden Construction

Rick Reubelt  
Director of Health and Safety.
APPENDIX F TO §1926.1101—WORK PRACTICES AND ENGINEERING CONTROLS FOR CLASS I ASBESTOS OPERATIONS (NON-MANDATORY)

This is a non-mandatory appendix to the asbestos standards for construction and for shipyards. It describes criteria and procedures for erecting and using negative pressure enclosures for Class I Asbestos Work, when NPEs are used as an allowable control method to comply with paragraph (g)(5)(i) of this section. Many small and variable details are involved in the erection of a negative pressure enclosure. OSHA and most participants in the rulemaking agreed that only the major, more performance oriented criteria should be made mandatory. These criteria are set out in paragraph (g) of this section. In addition, this appendix includes these mandatory specifications and procedures in its guidelines in order to make this appendix coherent and helpful. The mandatory nature of the criteria which appear in the regulatory text is not changed because they are included in this “non-mandatory” appendix.
Planning the Project

The standard requires that an exposure assessment be conducted before the asbestos job is begun [§ 1926.1101 (f)(1)]. Information needed for that assessment, includes data relating to prior similar jobs, as applied to the specific variables of the current job. The information needed to conduct the assessment will be useful in planning the project, and in complying with any reporting requirements under this standard. When significant changes are being made to a control system listed in the standard, [see also those of USEPA (40 CFR 61, subpart M). Thus, although the standard does not explicitly require the preparation of a written asbestos removal plan, the usual constituents of such a plan, i.e., a description of the enclosure, the equipment, and the procedures to be used throughout the project, must be determined before the enclosure can be erected. The following information should be included in the planning of the system:

A physical description of the work area;
A description of the approximate amount of material to be removed;
A schedule for turning off and sealing existing ventilation systems;
Personnel hygiene procedures;
A description of personal protective equipment and clothing to be worn by employees;
A description of the local exhaust ventilation systems to be used and how they are to be tested;
A description of work practices to be observed by employees;
An air monitoring plan;
A description of the method to be used to transport waste material; and
The location of the dump site.

Materials and Equipment Necessary for Asbestos Removal

Although individual asbestos removal projects vary in terms of the equipment required to accomplish the removal of the materials, some equipment and materials are common to most asbestos removal operations.

Plastic sheeting used to protect horizontal surfaces, seal HVAC openings or to seal vertical openings and ceilings should have a minimum thickness of 6 mils. Tape or other adhesive used to attach plastic sheeting should be of sufficient adhesive strength to support the weight of the material plus all stresses encountered during the entire duration of the project without becoming detached from the surface.

Other equipment and materials which should be available at the beginning of each project are:

—HEPA Filtered Vacuum is essential for cleaning the work area after the asbestos has been removed. It should have a long hose capable of reaching out-of-the-way places, such as areas above ceiling tiles, behind pipes, etc.

—Portable air ventilation systems installed to provide the negative air pressure and air removal from the enclosure must be equipped with a HEPA filter. The number and capacity of units required to ventilate an enclosure depend on the size of the area to be ventilated. The filters for these systems should be designed in such a manner that they can be replaced when the air flow volume is reduced by the build-up of dust in the filtration material. Pressure monitoring devices with alarms and strip chart recorders attached to each system to indicate the pressure differential and the loss due to dust buildup on the filter are recommended.

—Water sprayers should be used to keep the asbestos material as saturated as possible during removal; the sprayers will provide a...
Preparing the Work Area

Disabling HVAC Systems: The power to the heating, ventilation, and air conditioning systems that service the restricted area must be deactivated and locked off. All ducts, grills, access ports, windows and vents must be sealed off with two layers of plastic sheeting, and then disposed of as hazardous waste. Soap and shampoo should be provided to aid in removing dust from the workers’ skin and hair.

Sealing Elevators: If an elevator shaft is located in the restricted area, the portion of the enclosure that contains the elevator shaft must be decontaminated with water and a HEPA vacuum, and then removed from the area or wrapped with two layers of plastic sheeting. The sheets should be secured with duct tape or an equivalent method to provide a tight seal around the object.

Bagging Waste: In addition to the requirements for immediate bagging of waste for disposal, it is further recommended that the waste material be double-bagged and sealed in plastic bags designed for asbestos disposal. The bags should be stored in a waste storage area that can be controlled by the workers conducting the removal. Filters removed from air handling units and rubbish removed from the area are to be bagged and handled as hazardous waste.

Constructing the Enclosure

The enclosure should be constructed to provide an air-tight seal around ducts and openings into existing ventilation systems and around penetrations for electrical conduits, telephone wires, water lines, drain pipes, etc. Enclosures should be both airtight and watertight except for those openings designed to provide entry and/or air flow control.

Size: An enclosure should be the minimum volume to encompass all of the working surfaces yet allow unencumbered movement by the worker(s), provide unrestricted air flow around penetrations for electrical connections in the restricted area. The enclosure should be the minimum volume to encompass all of the working surfaces yet allow unencumbered movement by the worker(s), provide unrestricted air flow past the worker(s), and ensure walking surfaces can be kept free of tripping hazards.

Shape: The enclosure may be any shape that optimizes the flow of ventilation air past the worker(s).

Structural Integrity: The walls, ceilings and floors must be supported in such a manner that portions of the enclosure will not fall down during normal use.

Openings: It is not necessary that the structure be airtight; openings may be designed to draw air into the enclosure under all anticipated circumstances. In the event that negative pressure is lost, they should be fitted with either HEPA filters to trap dust or automatic trap doors that prevent dust from escaping the enclosure. Openings for exits should be controlled by an airlock or a vestibule.

Barrier Supports: Frames should be constructed to support all unsupported spans of sheeting.

Sheeting: Walls, barriers, ceilings, and floors should be lined with two layers of plastic sheeting. The sheeting should be secured with duct tape or an equivalent method to provide a tight seal around the object.

Backup power supplies are recommended, especially for ventilation systems.

Cleaning and Sealing Surfaces: After cleaning with water and a HEPA vacuum, surfaces of stationary objects should be covered with two layers of plastic sheeting. The surfaces of stationary objects should be cleaned with water and a HEPA vacuum, and then disposed of as hazardous waste.
where the asbestos removal operations occur should be separated from both the waste storage area and the contamination control area by physical curtains, doors, and/or air-flow patterns that force any airborne contamination back into the work area.

See paragraph (j) of this section for requirements for hygiene facilities.

Air Locks: Airlocks are mechanisms on doors and curtains that control the air flow patterns in the doorways. If air flow occurs, the patterns through doorways must be such that the air flows toward the inside of the enclosure. Sometimes vestibules, double doors, or double curtains are used to prevent air movement through the doorways. To use a vestibule, a worker enters a chamber by opening the door or curtain and then closing the entry before opening the exit door or curtain.

A worker should be located between the equipment room and shower room, between the shower room and the clean room, and between the waste storage area and the outside of the enclosure. The air flow between adjacent rooms must be checked using smoke tubes or other visual tests to ensure the flow patterns draw air toward the work area without producing eddies.

Monitoring for Airborne Concentrations

In addition to the breathing zone samples taken as outlined in paragraph (f) of this section, samples of air should be taken to demonstrate the integrity of the enclosure, the cleanliness of the clean room and shower

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**Establishing Negative Pressure Within the Enclosure**

Negative Pressure: Air is to be drawn into the enclosure under all anticipated conditions and exhausted through a HEPA filter for 24 hours a day during the entire duration of the project.

Air Flow Tests: Air flow patterns will be checked before removal operations begin, at least once per operating shift and any time there is a question regarding the integrity of the enclosure. The primary test for air flow is to trace air currents with smoke tubes or other visual methods. Flow checks are made at each opening and at each doorway to demonstrate that air is being drawn into the enclosure and at each worker's position to show that air is being drawn away from the breathing zone.

Monitoring Pressure Within the Enclosure: After the initial air flow patterns have been checked, the static pressure must be monitored within the enclosure. Monitoring may be made using manometers, pressure gauges, or combinations of these devices. It is recommended that they be attached to alarms and strip chart recorders at points identified by the design engineer.

Corrective Actions: If the manometers or pressure gauges demonstrate a reduction in pressure differential below the required level, work should cease and the reason for the change investigated and appropriate changes made. The air flow patterns should be retested before work begins again.

Pressure Differential: The design parameters for static pressure differentials between the inside and outside of enclosures typically range from 0.02 to 0.10 inches of water gauge, depending on conditions. All zones inside the enclosure must have less pressure than the ambient pressure outside of the enclosure (—0.02 inches water gauge differential). Design specifications for the differential vary according to the size, configuration, and shape of the enclosure as well as ambient and mechanical air pressure conditions around the enclosure.

Air Flow Patterns: The flow of air past each worker shall be enhanced by positioning the intake and exhaust ports to remove contaminated air from the worker's breathing zone, by positioning HEPA vacuum cleaners to draw air from the worker's breathing zone, by forcing relatively uncontaminated air past the worker toward an exhaust port, or by using a combination of methods to reduce the worker's exposure.

Air Handling Unit Exhaust: The exhaust plume from air handling units should be located away from adjacent personnel and intake for HVAC systems.

Air Flow Volume: The air flow volume (cubic meters per minute) exhausted (removed) from the workplace must exceed the amount of makeup air supplied to the enclosure. The rate of air exhausted from the enclosure should be designed to maintain a negative pressure in the enclosure and air movement past each worker. The volume of air flow removed from the enclosure should replace the volume of the container at every 5 to 15 minutes. Air flow volume will need to be relatively high for large enclosures, enclosures with awkward shapes, enclosures with multiple openings, and operations employing several workers in the enclosure.

Air Flow Velocity: At each opening, the air flow velocity must visibly "drag" air into the enclosure. The velocity of air flow within the enclosure must be adequate to remove airborne contamination from each worker's breathing zone without disturbing the asbestos-containing material on surfaces.

Airlocks: Airlocks are mechanisms on doors and curtains that control the air flow patterns in the doorways. To use a vestibule, a worker enters a chamber by opening the door or curtain and then closing the entry before opening the exit door or curtain.

Airlocks should be located between the equipment room and shower room, between the shower room and the clean room, and between the waste storage area and the outside of the enclosure. The air flow between adjacent rooms must be checked using smoke tubes or other visual tests to ensure the flow patterns draw air toward the work area without producing eddies.
area, and the effectiveness of the HEPA filter. If the clean room is shown to be contaminated, the room must be relocated to an uncontaminated area.
Samples taken near the exhaust of portable ventilation systems must be done with care.

General Work Practices

Preventing dust dispersion is the primary means of controlling the spread of asbestos within the enclosure. Whenever practical, the point of removal should be isolated, enclosed, covered, or shielded from the workers in the area. Waste asbestos containing materials must be bagged during or immediately after removal; the material must remain saturated until the waste container is sealed.
Waste material with sharp points or corners must be placed in hard air-tight containers rather than bags.
Whenever possible, large components should be sealed in plastic sheeting and removed intact.
Bags or containers of waste will be moved to the waste holding area, washed, and wrapped in a bag with the appropriate labels.

Cleaning the Work Area

Surfaces within the work area should be kept free of visible dust and debris to the extent feasible. Whenever visible dust appears on surfaces, the surfaces within the enclosure must be cleaned by wiping with a wet sponge, brush, or cloth and then vacuumed with a HEPA vacuum.
All surfaces within the enclosure should be cleaned before the exhaust ventilation system is deactivated and the enclosure is disassembled. An approved encapsulant may be sprayed onto areas after the visible dust has been removed.

A. Asbestos can cause disabling respiratory disease and various types of cancers if the fibers are inhaled. Inhaling or ingesting fibers from contaminated clothing or skin can also result in these diseases. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.
B. Exposure to asbestos has been shown to cause lung cancer, mesothelioma, and cancer of the stomach and colon. Mesothelioma is a rare cancer of the thin membrane lining of the chest and abdomen. Symptoms of mesothelioma include shortness of breath, pain in the walls of the chest, and/or abdominal pain.

III. Respirators and Protective Clothing

A. Respirators: You are required to wear a respirator when performing tasks that result in asbestos exposure that exceeds the permissible exposure limit (PEL) of 0.1 f/cc and when performing certain designated operations. Air-purifying respirators equipped with a high-efficiency particulate air (HEPA) filter can be used where airborne asbestos fiber concentrations do not exceed 1.0 f/cc; otherwise, more protective respirators such as air-supplied, positive-pressure, full facepiece respirators must be used. Disposable respirators or dust masks are not permitted to be used for asbestos work. For effective protection, respirators must fit your face and head snugly. Your employer is required to conduct a fit test when you are first assigned a respirator and every 6 months thereafter. Respirators should not be loosened or removed in work situations where their use is required.
B. Protective Clothing: You are required to wear protective clothing in work areas where
1.0 Purpose

1.1 The purpose of this procedure is to familiarize operational personnel with asphalt paving procedures and safe operations.

2.0 Scope

2.1 This procedure applies to all Haselden projects and associated work.

3.0 Definitions

3.1 Asphalt Paving Equipment: Asphalt Paving Equipment shall include: track or wheeled pavers, steel rollers, rubber tired compactors, distributor trucks, dump trucks, mechanical road sweepers, motor graders, tack trucks and other related support equipment.

3.2 Inspect: Verify that the machinery or equipment is in safe working order.

3.3 Operator A worker designated to control the equipment or machinery such that it safely performs the function for which it is intended on a project (i.e. paver, rollers, etc.).

3.4 Paving Supervisor or Superintendent: Contractor’s representative at the site who is responsible for field supervision, coordination, and completion of the work with respect to the paving equipment.

3.5 Non-operating Personnel: Workers designated to perform a function or work procedure in a safe and competent manner (i.e. gravel checkers, materials inspectors, flag persons, rakers, laborers, etc.).

4.0 Reference Documents

4.1 29 CFR 1926.602 Material Handling Equipment

4.2 NIOSH Publication No. 97-105

4.3 HC Electrical Policy

4.4 HC Traffic Safety Program

4.5 MUTCD

5.0 Responsibilities
5.1 **Paving Superintendent or Supervisor:**

5.1.1 Maintain control of all asphalt delivery, paving and related operations;

5.1.2 Appoint only those persons to be operators who are capable of safely operating asphalt paving equipment and of performing maintenance, checks, and inspection as required.

5.1.3 Consult with local authorities to determine whether waste material is considered to be oily or hazardous waste. Make necessary arrangements for legal disposal.

5.2 **Operators:**

5.2.1 Demonstrate an understanding of safe operating procedures;

5.2.2 Conduct a maintenance check;

5.2.3 Know all signals applicable to the control of equipment and personnel;

5.2.4 Know the designated signalers;

5.2.5 Before commencing work, know the exact location of all utilities that may be affected by the operation and verify they are clearly marked. Overhead power lines are an extreme hazard;

5.2.6 Verify that equipment has a proper fire extinguisher that has been properly serviced, inspected and is in good working condition;

5.2.7 Verify that all covers and guards are in place;

5.2.8 Check for adequate turning or maneuvering clearance before operating the machine;

5.2.9 Check for proper operating of all controls and protective devices;

5.2.10 Clean windshields, mirrors, lights, steps, grab bars, and operator’s compartment;

5.2.11 Be familiar with the operator’s manual;

5.2.12 Do not operate any part of the equipment within 15 feet of overhead power lines See HC Electrical Policy for additional requirements when working around power lines.

5.2.13 Do not allow passengers to ride equipment;

5.2.14 If a clear view is not available, stop and contact a signaler before moving or backing up;
5.2.15 Verify that the audible signal is working properly and is loud enough to be heard over the noise of other equipment. Give an audible signal prior to backing up;

5.2.16 Check that flammable liquids are stored in approved containers only;

5.2.17 Give right of way to the public unless signaled otherwise;

5.2.18 During periods of rest or inactivity, move to a safe area outside the construction zone. Visiting in groups around trucks or equipment is not acceptable.

5.2.19 Horseplay or other inappropriate behavior is forbidden.

5.3 Non-operating Personnel:

5.3.1 Employees who control traffic shall be certified with the state as flaggers. Reference the HC Traffic Safety Program.

5.3.2 Know the designated signalers

5.3.3 Review the traffic control plan, and the pattern of vehicles and equipment;

5.3.4 Wear high visibility clothing

5.3.5 During periods of inactivity, move to a safe area outside the construction zone. Visiting in groups around trucks or equipment is not acceptable; and

5.3.6 Horseplay or other inappropriate behavior is forbidden.

5.3.7 Wear appropriate PPE for task. See HC Safety Policy

5.4 Trick Driver Duties:

5.4.1 Prior to operation, determine if the unit is in good repair and properly maintained;

5.4.2 Operate the unit in accordance with applicable laws, codes, and procedures;

5.4.3 Verify that the material being hauled is properly loaded so as not to be a hazard to workers, equipment, or the traveling public;

5.4.4 Know the signals regarding the direction of equipment and personnel;

5.4.5 Check that no unauthorized personnel ride in the cab;

5.4.6 Know the designated signalers;

5.4.7 Know the traffic pattern of vehicles and equipment;
5.4.8 Check that the operator has a clear view when backing up. If not, he shall seek the direction of a designated signaler;

5.4.9 Give an audible signal when backing up;

5.4.10 Verify that no alcohol, drugs, or firearms are in the vehicle;

5.4.11 Check that flammable liquids are stored in approved containers only;

5.4.12 During periods of inactivity, move to a safe area outside the construction zone. Visiting in groups around trucks or equipment is not acceptable;

5.4.13 Give right of way to the public unless signaled otherwise.

6.0 Implementation

6.1 Paving Equipment

6.1.1 Asphalt paving equipment shall be used in a safe manner at all times and in accordance with regulatory requirements.

6.1.1.1 When replacement parts are used, such parts shall be equivalent to the original equipment.

6.1.1.2 Repairs or modifications must be made in accordance with the manufacturer's requirements.

6.1.1.3 Asphalt paving equipment shall be provided with a means of preventing unauthorized operation while the equipment is unattended.

6.1.1.4 Self-propelled rollers must conform to regulatory requirements regarding roll over protective structures (ROPS).

6.1.1.5 Paving equipment including dump trucks, concrete delivery trucks, and oil distribution trucks will be fitted with an automatic back-up alarm in accordance with regulatory requirements.

6.2 Safety Procedures for Paving

6.2.1 Prior to commencement of a paving operation, the subcontractor must determine:

6.2.1.1 Line of authority and accountability

6.2.1.2 Condition of equipment

6.2.1.3 Experience of personnel

6.2.1.4 Type of operation and

6.2.1.5 Traffic accommodation.
6.2.2 The construction zone must be adequately marked and protected by signs, barricades, and flaggers prior to moving equipment or personnel into the construction zone and commencing the work.

6.3 **Dump Trucks**

6.3.1 Before and during operation of a dump truck with the bed in the raised position, the operator and supervisor must check overhead clearances for interference during forward and backward movements.

6.3.2 Dump trucks shall not be driven with the beds in the raised position except for immediate dumping of loads.

6.3.3 Dump trucks shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done. (Positive bed lock)

6.3.4 A positive bed lock is required when any work is performed with the bed in a raised position.

6.3.5 No one is permitted under an unsecured raised bed for any reason except to engage the bed lock.

6.3.6 No one is permitted between the tailgate and a raised bed without the bed lock being engaged.

7.0 **Attachments**

7.1 N/A
Haselden Construction Safety Program

Subject: Barricades
Approved By: Safety Department
Date: 1/15/2018

1.0 Purpose

1.1 This program establishes requirements for the use and installation of barricades.

2.0 Scope

2.1 This program will be used by Haselden and its subcontractors to properly barricade all Haselden projects.

3.0 Definitions

3.1 Barricade – An object or structure that creates a barrier or obstacle to control or block passage into or through an area.

4.0 Reference Documents

4.1 29 CFR 1910.145, Specification for Accident Prevention Signs and Tags
4.2 29 CFR 1926.200, Accident Prevention Signs and Tags
4.3 229 CFR 1926.501, Duty to Have Fall Protection
4.4 29 CFR 1926.502, Fall Protection Systems Criteria and Practices
4.5 29 CFR 1926.1101, Asbestos
4.6 HC Fall Protection Policy
4.7 HC Steel Erection Policy

5.0 Responsibilities

5.1 Superintendents – to manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 Barricades
6.1.1 Barricades are required around excavations, openings in floors, walls, or roof areas, edges of platforms, around swing radius of rotating equipment housing (e.g., cranes), and certain types of overhead work.

6.1.1.1 Do not create obstructions to work or access by over-barricading for convenience.

6.1.1.2 Temporary post or barricade stands will be used if there is no permanent suitable attachment point available.

6.1.1.3 Barricades should never be crossed for convenience or by taking short cuts.

6.1.1.4 Post an informational sign that indicates the company, name, date, purpose, and phone number of the person that erected the barricade.

6.1.2 Barricades are required for falling object protection (Limited Access Zones). See HC Fall Protection Policy and HC Steel Erection Policy.

6.1.3 Warning Barricades

6.1.3.1 Provide no physical protection but serve to alert personnel in the area that a hazard is present.

6.1.3.2 Are generally constructed of barricade tape, traffic barricades or traffic cones.

6.1.3.3 Whenever possible, warning barricades will be positioned at least 6 feet from the hazard.

6.1.3.4 Whenever traffic cones are used as warning barricades, they will be highly visible and contain a reflective material.

6.1.3.5 Erected a minimum of 36 inches high, kept square and level and supported by enough barricade stands to keep barricade tape from sagging. Weather and wind conditions shall be taken into account when using barricade tape so that the barricade remains in place and effective.

6.1.3.6 Barricade tag or signage indicating the reason for the barricade and a contact number where the barricade erector can be reached will be attached.

6.1.3.7 Barricades shall be removed promptly when work is completed or suspended.

6.1.3.8 For entry requirements see section 6.2.

6.1.3.9 For warning line requirements see the Haselden Fall Protection Policy.
6.1.3.10 For barricade requirements at excavations, see the Haselden Excavation and Trenching policy.

6.1.3.11 For barricade usage with traffic control, see HC Traffic Control Policy.

6.1.4 **Protective Barricades**

6.1.4.1 Provide physical isolation or protection from the hazard; examples include guardrails or cables set at the proper height around an opening or K rails (concrete barriers).

6.1.4.2 All protective barricades will be designed to meet the imposed loads.

**Example 1**: If the barricade is to prevent personnel from walking into a floor hole, it must meet all requirements for a guardrail system (top rail, mid rail and toe boards designed to resist a 200 lb. outward or downward force).

**Example 2**: If the barricade is to stop equipment from running into an excavation, it must be designed to resist the force of the moving equipment.

6.1.4.3 A swinging entrance gate through the railing, or an offset, so employees cannot walk directly into the opening, must also be provided.

6.1.4.4 Each entrance will be identified with barricade signage.

6.1.4.5 When protective barricades are used for fall protection, they must be designed to resist the force of the fall. See HC Fall Protection Policy.

6.2 **Barricade Tape**

6.2.1 Barricade tape will be color coded to convey different levels of hazard warning.

6.2.1.1 *Red* tape is used to convey “DANGER – DO NOT ENTER”; NO ONE is to enter without the approval of the employee or entity that erected the barricade, who must advise the entrant of the hazard and wear all required personal protective equipment required for the hazard.

6.2.1.2 *Yellow* or *Yellow/Black* is used to convey “CAUTION”. Personnel are allowed to enter the barricade only after they have read the tag to understand the purpose of the barricade and recognize the hazards within the area.
6.2.2 Reinforced barricade tape should be used due to its longer lifespan and strength, especially in windy environments and where barricade maintenance costs could be offset by using a more durable material.

7.0 Attachments

7.1 N/A
1.0 Purpose

1.1 This procedure describes minimum standard operating procedures for blasting operations and the use of explosives at all Haselden Construction jobsites. Its purpose is to prevent the effects of or conditions related to jobsite blasting and its associated materials.

1.2 The Site superintendent are designated as the program administrators.

2.0 Scope

2.1 This procedure will apply to all Haselden Construction projects where blasting operations are required.

2.2 Haselden Construction will only utilize contractors who are recognized as being licensed/certified blasting companies to perform drilling or blasting in the state and local jurisdiction where the work is being performed.

3.0 Definitions

3.1 Blast Area - the area in which explosives loading and blasting operations are being conducted.

3.2 Blasting agent - Any material or mixture consisting of a fuel and oxidizer used for blasting but not classified an explosive.

3.3 Blasting supervisor - The blasting contractor must designate a blasting supervisor to supervise all blasting operations, including transportation, storage, handling and use of explosives and blasting agents.

3.4 Detonator - Blasting caps, electric blasting caps, delay electric blasting caps, and nonelectric delay blasting caps.

3.5 Explosives - Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion; that is with substantially instantaneous release of gas and heat, unless such compound, mixture or device is otherwise specifically classified by the U.S. Department of Transportation.

3.6 Misfire - an explosive charge which failed to detonate.

4.0 Reference Documents
4.1 29 CFR 1926 Subpart U – Blasting and Use of Explosives

4.2 MSHA @ www.msha.gov


4.4 HC Incident Reporting Policy

5.0 Responsibilities

5.1 Superintendents will review the subcontractor’s site-specific safety and blasting plan and enforce its proper execution.

5.2 Director of Safety and Health or Designee will review the proposed site specific blasting plan prior to any blasting operations. The safety history of all blasting contractors will also be reviewed prior to any blasting operations.

6.0 Implementation

6.1 Pre-Construction Key Considerations

6.1.1 Prior to contract award to any blasting company, Haselden Pre-Construction shall request from the Safety Department an OSHA background check to determine the safety record of the blasting company.

6.1.2 The blasting company shall prepare a systematic, logical and thorough blasting plan that ensures blasting operations are conducted in a safe and efficient manner. At a minimum, the following items shall be considered:

6.1.2.1 Define guidelines for blasting activities

6.1.2.2 Provide a description of employee training and qualifications

6.1.2.3 Identify the equipment and methods to be used for transporting explosives and detonators. Transportation to and from the site shall be in accordance with DOT regulations.

6.1.2.3.1 Describe storage procedures

6.1.2.3.2 Describe the type and quantity of explosives and detonators that will be used.

6.1.2.3.3 Describe procedures and location for assembly of primers and detonators.

6.1.2.4 Identify hazards and risks to the public, structures, utilities and workers. Develop adequate control measures.
6.1.2.5 Development of a daily blasting plan

6.1.2.6 Describe procedures for disposal of unused or defective blasting materials.

6.1.2.7 Provide blasting mats to control flyrock, if necessary.

6.1.2.8 Conduct and document a pre-blast survey of surrounding structures

6.1.2.9 Conduct blast monitoring if there is a risk of damage to surrounding structures or utilities

6.1.2.10 Conduct and document a post-blast survey

6.1.2.11 Prepare written provisions for community notification

6.1.2.12 Block and guard all access to the blast area, and provide redundant methods of blast signaling

6.1.2.13 Prepare and rehearse an Emergency Response Plan

6.1.3 All employees who handle explosives must be 21 years of age or older, be a US citizen, and possess an ATF license or permit.

6.2 Construction Phase

6.2.1 A complete review of the proposed site specific blasting plan will be made by the Site Superintendent and the Director of Safety and Health or Designee. Areas for review will be:

6.2.1.1 Review of the entire blasting plan for compliance with all applicable city, county, and federal laws.

6.2.1.1.1 A Blasting Consultant will be retained for this responsibility if corporate resources are unavailable.

6.2.1.2 Establish whom the competent, qualified, and responsible parties are for all aspects or facets of blasting operations and the storage and maintenance of blasting materials and repairs to blasting equipment.

6.2.1.2.1 Meet with the blasting supervisor to review the blasting plan.

6.2.1.3 Notify all stakeholders. Personally contact affected groups or businesses and clearly explain the blasting operations and when they will be conducted.

6.2.1.3.1 At least 24 hours before blasting near gas, electric, water, sewer, phone, TV, fiber optic, or other utilities is
scheduled, the blasting supervisor is required to notify the utility companies.

6.2.1.4 Verify required city, county, state or federal permits are in place.

6.2.1.5 Smoking and hot work is prohibited in the vicinity of blasting materials or blasting operations.

6.2.1.6 Take precautions to prevent accidental discharge of electric blasting by prohibiting cell phone and radio transmitter use near the blasting area.

6.2.1.7 Check for sources of electromagnetic radiation that may detonate electric blasting devices, such as power lines.

6.2.1.8 Provide lightning detection devices. Cease operations and evacuate the area when lightning is visible or within 10 miles of the blasting operation.

6.2.1.9 Perform a pre-blast survey of all systems, buildings or property before blasting operations commence. Document all damage and review with property owners. This will protect the owner, the blasting contractor and Haselden Construction in the event of a damage claim.

6.2.1.10 Block and guard all access to the blast site, and commence with signaling plan.

6.2.1.10.1 Post a description of blast signals at all points of entry.

6.2.1.11 Conduct the blast when all is ready, per the direction of the blasting supervisor.

6.2.1.12 Perform monitoring of the blast if required by the blast plan.

6.2.1.13 Perform immediate inspections to any or all systems, buildings or property after blasting operations have concluded. Record evidence of the following:

6.2.1.13.1 Fly rock damage

6.2.1.13.2 Misfires

6.2.1.13.3 Wet or damaged charges

6.2.1.13.4 Exceeding peak particle velocities PPV (seismic readings) above levels specified in the blast plan.

6.2.1.13.5 Any incident or near miss
6.2.1.14 Provide copies of all required inspections to the Director of Environmental, Health and Safety.

6.2.1.15 Notify the Director of Environmental, Health and Safety of his designee in the event of any accident, incident or near miss. See HC Incident Reporting Policy.

7.0 Attachments

7.1 N/A
1.0 Purpose

1.1 To eliminate or minimize employee exposure to blood-borne pathogens and other biological hazards.

2.0 Scope

2.1 Through the performance of their duties, it cannot be reasonably anticipated that Haselden employees will be exposed to contact with blood or other potentially infectious materials. Therefore, Haselden employees are not governed by the OSHA Bloodborne Pathogen standard, 29 CFR 1910.1030.

2.2 To ensure employees are aware of the steps they may take if they inadvertently find themselves in the position of 'Good Samaritan,' the Haselden Project Blood-Borne Pathogen Guidelines outline steps that will be taken to:

   2.2.1 Prevent/minimize exposure to potentially infectious blood-borne pathogens and other infectious materials

   2.2.2 Respond and report actual exposure to blood-borne pathogens.

2.3 Although the probability of exposure to potential infections pathogens is limited, 'Universal Precautions' will be practiced and all blood, other body fluids, and human tissue will be handled as if it were infectious.

   NOTE: Subcontractors providing employees whose responsibilities include responding to medical emergencies, first aid, CPR, etc., will adhere to all requirements outlined in 29 CFR 1910.1030.

3.0 Definitions

3.1 Blood-Borne Pathogens (BBP): Micro-organisms present in human blood that can cause disease in humans. These include, but are not limited to hepatitis B virus, and human immunodeficiency virus (HIV).

3.2 Disposal: Ultimate destruction of biohazard material, including disposable personal protective gear and sharps items. Disposal and decontamination shall not be performed by Haselden personnel, but by a firm qualified to handle and dispose of regulated medical waste.
3.3 **Good Samaritan:** A person whom in good faith provides emergency (and sometimes non-emergency) first aid. A Good Samaritan shall not be civilly liable unless they act with wanton misconduct.

3.4 **Occupational Exposure:** A reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

3.5 **Parenteral:** Piercing mucous membranes or the skin through needlesticks, human bites, cuts and abrasion.

3.6 **Sharps:** Needles, syringes, blades, and (non-beverage) glass capable of causing punctures or cuts in the skin.

3.7 **Sharps Container:** Puncture resistant container, labeled with a biohazard symbol, having a lid that can be tightly secured.

3.8 **Personal Protective Gear:** Equipment and clothing that will provide a means for handling bloodborne pathogens and sharps without exposure to Haselden personnel. These may include tongs, a short broom and dustpan, and protective latex gloves.

*It should be stressed that latex gloves are not resistant to puncture, and therefore every means should be taken to collect sharps items using hand tools along with gloves. If necessary, a shovel can be used in place of tongs or a broom and dustpan.*

3.9 **Universal Precautions:** An infection control approach whereby all human blood and certain body fluids are treated as if they were known to be infectious for HIV, HBV or other blood borne pathogens.

4.0 **Reference Documents**

4.1 29 CFR 1910.1030 – Blood borne Pathogen and Appendix A

4.2 OSHA Standard Interpretations - BBP standard for Good Samaritan Acts/Personal Medical Conditions

4.3 OSHA Standard Interpretations - OSHA Requirements For Providing Training For First Aid, CPR, And BBP For Prompt Treatment Of Injured Employees At Various Workplaces.

5.0 **Responsibilities**

5.1 **Site Superintendent(s):**

5.1.1 Responsible for implementing this procedure;

5.1.2 Provide training for designated person who is responsible for the collection, storage and disposal of sharps and other biohazards.

5.1.3 Provide material and personal protective equipment identified in this procedure
6.0 Implementation

6.1 Preventing or Minimizing Exposure to Blood-Borne Pathogens

6.1.1 The potential for exposure to blood-borne pathogens exists whenever co-workers assist or aid an injured employee. Therefore, the following steps will be adhered to in order to minimize or eliminate potential exposure to BBP:

6.1.1.1 Assume all human blood and body fluids are infectious.

6.1.1.2 Based on the exposure conditions and the anticipated level of risk, the following PPE should be used:

6.1.1.2.1 Resuscitation masks or barrier devices.

6.1.1.2.2 Disposable surgical latex or nitrile gloves.

6.1.1.2.3 Eye, nose, and mouth should be protected with a surgical mask and goggles or a face shield if there is a likelihood of body fluids splattering.

6.1.1.3 Wash hands immediately after removing gloves and after any hand contact with body fluids.

6.1.1.4 Do not eat, drink, apply cosmetics or lip balm, or handle contact lenses in areas where there is a potential for exposure.

6.1.1.5 Contaminated clothing should be removed as soon as possible and bagged; gloves should be used when handling contamination.

6.1.1.6 Contaminated PPE, equipment, clothing and work area must be cleaned and decontaminated as soon as possible.

6.1.1.7 All cleanup and disposal of contaminated equipment or material will:

6.1.1.7.1 Be conducted according to local, state and federal requirements

6.1.1.7.2 NOT be stored onsite longer than 24 hours before it is disposed of.

6.2 Exposure to Biological Hazards

6.2.1 If exposure to blood-borne pathogens occur:

6.2.1.1 Immediately report exposure to your supervisor.

6.2.1.2 A written incident report MUST be completed and entered into Compliancewise before the end of the work shift, following a call to notify the Safety Department.
6.2.1.3 Haselden employees will be offered follow-up counseling services if they are exposed to blood borne pathogens while administering first aid.

6.2.1.3.1 Provide medical evaluations for employees within 24 hours following exposure.

6.2.2 Exposure to other biological hazards:

6.2.2.1 Exposure to other biological hazards, such as viruses, plagues, sewage, etc., will be addressed as needed.

6.3 Handling and Disposal of Needles, Sharps and Syringes

6.3.1 Risk associated with sharps

6.3.1.1 Sharps can readily break the skin (through cuts, scrapes, and needle sticks) and convey the infectious agents from the sharps to the blood of personnel.

6.3.1.2 Hepatitis and HIV are diseases that can be left on needles and transmitted by sharps.

6.3.2 Identification of Hazard

6.3.2.1 Identification of sharps is a concern for all on-site personnel. If sharps are encountered on the work site, the following procedure should be adhered to:

6.3.2.1.1 Avoid contact

6.3.2.1.2 Immediately notify all personnel in the immediate area to prevent accidental contact

6.3.2.1.3 Immediately notify the Haselden project superintendent as to the exact location of sharps so that it can be collected.

6.3.3 General Control Procedures

6.3.3.1 Only trained personnel should be involved with the collection, storage and disposal of sharps items. Collection of sharps includes the following steps:

6.3.3.1.1 Collection of any sharps items in a manner which eliminates direct contact with the sharp by using simple collection devices and personal protective gear.

6.3.3.1.2 Place the collected sharp item in a proper puncture resistant container so that it can be transported for disposal.

6.3.3.1.3 Store the sharps container in a secure area.
6.3.4 Specific Control Practices

6.3.4.1 The steps for the safe collection, storage, and disposal of sharps by trained personnel are as follows:

6.3.4.1.1 Obtain a sharps disposal kit

6.3.4.1.2 Put on a pair of latex or nitrile gloves. These gloves are not puncture or cut resistant.

6.3.4.1.3 Collect the sharps items in a dust pan using tongs and transfer them from the dust pan into the puncture resistant container. Close, seal and lock the sharps container. Place used gloves in the container.

6.3.4.1.4 This container can be re-used until it is ¾ full, at which time it should be disposed of.

6.3.4.1.5 Clean the tongs, broom, and dust pan with bleach and place them into the plastic container marked with the 'biohazard' label, close the lid and store in a secure area along with the sharps container. These items can be used again.

6.3.4.1.6 If disposal is required, these items must be disposed of by a firm qualified to dispose of regulated medical waste.

6.3.4.2 Injury Control

6.3.4.2.1 In the event that an employee sustains a needle stick or other related injury, the following steps shall be taken:

6.3.4.2.1.1 Report injury to the on-site first aid or medical representative

6.3.4.2.1.2 Seek immediate attention from a medical doctor or physician

6.3.4.2.1.3 Properly label and keep the sharps for laboratory analysis

6.3.4.2.1.4 Keep this item segregated in a clean sharps disposal container

7.0 Attachments

7.1 Waiver of Hepatitis Vaccination
HASELDEN CONSTRUCTION
Hepatitis Vaccination Waiver

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring Hepatitis virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis vaccine, at no charge to myself. However, I decline Hepatitis vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis vaccine, I can receive the vaccination series at no charge to me.

Employee Signature

Date

Print Employee Name and Job Title

Witness Signature

Date

Print Witness Name and Job Title
1.0 Purpose

1.1 The Code of Safe Practices is applicable to all Haselden Construction projects, Haselden Construction employees, and all associated subcontractors and vendors.

2.0 Scope

2.1 This document applies to all Haselden Construction work.

2.2 This Document is not intended to be an all-encompassing safe work plan or instruction manual, but to highlight certain safe work practices included in Haselden Construction’s Safety policy.

3.0 Definitions

4.0 Reference Documents

5.0 Responsibilities

6.0 Implementation

6.1 Code Of Safe Work Practices

6.1.1 Haselden Construction has established the following Code of Conduct and Code of Safe Work Practices for its employees and subcontractors while performing work on a Haselden Construction job site. These safety rules are not meant to be all-inclusive. Haselden Construction will periodically supplement and update this Code of Safe Work Practices with additional safety policies or written operating. If this program is in conflict with a site specific program or HC Safety Policy, the more restrictive program or policy shall govern.

6.1.2 All Haselden Construction employees and subcontractors are required to perform their work assignments in a safe and responsible manner in accordance with the Code of Safe Work Practices, Haselden Construction safety and health policies and procedures, regulatory standards, safety training, and their supervisors’ instructions.

6.1.3 All Haselden Construction employees and subcontractors are entitled to a safe and healthy work environment. Employees and Subcontractors
who violate the Code of Conduct, safety rules or safe work practices will be subject to disciplinary action, up to and including removal from the job site, termination of employment or in the case of a Subcontractor or its employees, removal from the work site in accordance with Haselden Construction established disciplinary procedures.

6.1.4 From this point forward as it relates to this document all Haselden Construction employees, subcontractor employees, and vendors, will be referred to as employees.

6.2 Code Of Conduct And General Safety Rules

6.2.1 Good housekeeping is mandatory. Employees shall maintain their work areas, tools and equipment in a clean and neat condition. Trash will be collected at least once each work shift and placed in designated trash containers. All tools and equipment will be returned to their proper storage locations at the end of each work shift.

6.2.2 Oily rags and any paint-soaked rags must be placed in covered metal containers, stored separately from flammable and combustible materials, and disposed of by the end of each shift.

6.2.3 If smoking areas are designated, Smoking is allowed only in designated smoking areas. No smoking is allowed in an enclosed or partially enclosed building.

6.2.4 Eating, drinking, chewing, and applying cosmetics is only allowed in designated break areas. Food, beverages, cosmetics and medications must be stored separately from any cleaning supplies or other chemical products.

6.2.5 Employees must wash their hands and arms with soap and water before eating, drinking, chewing, applying cosmetics or taking medication.

6.2.6 Possession of alcoholic beverages, illegal drugs and other controlled substances, and drug paraphernalia is strictly prohibited on Haselden Construction property and jobsites, including while in vehicles that are owned or leased by Haselden Construction. Employees who require prescription medication during working hours must keep the medication in its original pharmacy container, labeled with the employee’s name, the prescribing doctor’s name, the pharmacy name, telephone number and name of the medication.

6.2.7 Employees who require prescription or over-the-counter medication that may cause drowsiness, loss of coordination, or other potential safety problems during working hours should notify their supervisor or the Safety Program Administrator. This policy is intended to ensure that employees do not present a hazard to themselves or their coworkers while taking medications that cause side effects that can impair their ability to work safely.
6.2.8 Employees will be subject to disciplinary action in accordance with Haselden Construction personnel policies and procedures if they are found to be drunk or otherwise impaired while driving vehicles owned or leased by Haselden Construction, or while performing any other work for Haselden Construction or its clients.

6.2.9 Employee drivers who are involved in work-related vehicle incidents will be required to submit to immediate drug and alcohol screening in accordance with Haselden Construction policy.

6.2.10 Employees are responsible for proper use and maintenance of tools, supplies and equipment. Defective tools and equipment must be tagged “Do Not Use” and must be replaced or repaired immediately. Employees will use tools and equipment for their intended purposes only. Manufacturer’s instructions will be followed when using any tools and equipment.

6.2.11 Horseplay, practical jokes, and gambling are prohibited on Haselden Construction property or job sites.

6.2.12 Sexual, racial, or other harassment is strictly prohibited at all Haselden Construction facilities and job sites. Employees should immediately report to their supervisor or the Safety Program Administrator any threat or incident of such harassment. Employees who commit such harassment will be subject to disciplinary action in accordance with Haselden Construction policies and procedures.

6.2.13 Threats and acts of violence in the workplace are strictly prohibited at all Haselden Construction facilities and job sites. Employees should immediately report to their supervisor or the Safety Program Administrator any threat or act of violence that is committed against any employee, the public, or a client. This includes reporting incidents that occur outside of working hours if the employee reasonably believes that it may affect their work or Haselden Construction business operations. Employees who commit threats or violent acts in the workplace will be subject to disciplinary action in accordance with Haselden Construction policies and procedures.

6.3 Building Emergency Exits And Equipment

6.3.1 Exit doors, fire alarms, fire extinguishers, smoke detectors, overhead sprinklers, and any emergency showers and eyewashes must be kept clear and unblocked at all times.

6.3.2 Emergency exits will either be unlocked during working hours or will be capable of opening from the inside without the use of a key.

6.3.3 All stairs, steps, aisles, halls, and walkways must be kept clean and free of slip, trip and fall hazards. Spills of any kind will be cleaned up immediately. This includes wiping up spilled water, food, and beverages in offices, break areas, and lunchrooms.
6.3.4 First aid supplies and fire extinguishers must be inspected at least monthly. Employees will immediately notify their supervisor if replacements or refills are needed. Used fire extinguishers must be refilled or replaced immediately to prevent lack of fire protection.

6.3.5 Employees are prohibited from using first aid supplies, fire extinguishers, and other emergency supplies for anything other than their intended purpose. Theft or vandalism will result in disciplinary action.

6.3.6 Employees may use portable fire extinguishers to fight incipient-stage fires such as a wastebasket fire. Haselden Construction employees are prohibited from attempting to fight any other type of fire. If such fires are discovered, all employees must immediately evacuate the building and report to the designated assembly area outside the building. The project superintendent, Safety Program Administrator or designee will call the local fire department for assistance.

6.4 Compressed Gas Safety

6.4.1 Employees will not use compressed gases to empty drums or containers or to clean off their clothing or their bodies.

6.4.2 Employees will not aim compressed gas discharges at other people or at animals.

6.4.3 Used aerosol cans, such as spray paints and carburetor cleaner, are placed in designated trash containers for safe disposal.

6.4.4 Cylinders, cylinder valves, couplings, regulators, hoses, and apparatus are to be kept free of oily or greasy substances.

6.4.5 Employees will not drop or strike compressed gas cylinders. Employees will not lift compressed gas cylinders by their safety caps or by the cylinder valves or regulators.

6.4.6 Employees will not use compressed gas cylinders for rollers, supports, or for any purpose other than holding compressed gas.

6.4.7 Compressed gas cylinders must be clearly labeled to show their contents. Compressed gas cylinders must also be tagged to show whether they are full or empty.

6.4.8 Regulators used with compressed gases must be appropriate for the specific gases. Only oil-free regulators can be used with oxygen gas cylinders.

6.4.9 Gas cylinders must be stored and used in an upright position. Compressed gas cylinders must be stored in covered areas where they are protected from damage from freezing, weather, traffic and excessive heat.
6.4.10 Compressed gas cylinder storage areas must be labeled with signs warning “No Smoking”.

6.4.11 Gas cylinders must be securely tied or chained to a fixed object, hand truck or cylinder dolly. Vehicles will not be used as tie-off points for gas cylinders, except when the cylinders are being transported in the vehicle. Gas cylinders must be securely tied or chained in an upright position when they are transported in a vehicle.

6.4.12 Gas cylinders must be moved with hand trucks or cylinder dollies whenever possible. If gas cylinders must be moved by hand, Employees will move only one cylinder at a time, keeping the cylinder upright and using both hands to control its movement.

6.4.13 Compressed gas cylinders must be shut off, regulators removed and safety caps screwed on, before the cylinders are moved or transported.

6.4.14 Welding or heating fuels such as acetylene must be stored separately from oxygen gas cylinders with either a 1/2-hour firewall at least 5 feet high, or by at least 20 feet of open space between the fuel gas and oxygen.

6.5 Driving And Vehicle Safety

6.5.1 Employees and independent contractors who drive vehicles while involved in Haselden Construction business activities must have valid, current drivers’ licenses.

6.5.2 Drivers must obey traffic rules and Department of Transportation regulations at all times. Employees cited for traffic violations while on Haselden Construction business will be subject to disciplinary action. Independent contractors cited for traffic violations while on Haselden Construction business will be subject to legal action in accordance with the terms of their contracts.

6.5.3 Individuals who drive their personal vehicles on Haselden Construction business must provide proof of current vehicle insurance to Haselden Construction management prior to operating such vehicles.

6.5.4 Consumption of alcohol, drugs and other controlled substances is strictly prohibited while driving on company business. Employees found driving while under the influence of such substances will be subject to disciplinary action. Independent contractors found driving while under the influence of such substances will be subject to legal action in accordance with the terms of their contracts.

6.5.5 Passengers are not allowed in vehicles during Haselden Construction work activities unless those passengers are employees, contractors or clients with legitimate business reasons for their presence in the vehicle. A passenger seat and a working seat belt must be provided for each passenger.
6.5.6 Seat belts must be worn at all times by anyone driving or riding in a Haselden Construction or subcontractor vehicle.

6.5.7 Haselden Construction encourages all employees and their families to wear seat belts at all times when driving on personal time.

6.6 Electrical Safety

6.6.1 Any equipment with elevated masts or booms must maintain safe clearance from all overhead power lines and electrical transformers. Overhead electrical hazards must be identified and a location marked with warning signs before work begins at a customer location. Equipment in proximity to overhead power lines that cannot be de-energized must be kept at safe distances (15 feet minimum for up to 50 kV lines and an additional 0.5-inch for every 1 kV over 50 kV). Crane minimum distance it 20 feet without written authorization.

6.6.2 All electrical circuits must be protected by ground fault circuit interrupters (GFCIs). This applies to permanent and temporary installations as well as equipment powered by portable generators.

6.6.3 Employees shall use GFCI pigtails plugged into wall outlets when using permanent power.

6.6.4 GFCIs will be tested at least once per month by the electrical subcontractor or whoever is designated as responsible for temporary electric power by contract. This test will be conducted utilizing an electronic GFCI tester, and the inspection will be documented.

6.6.5 Power tools must have ground prongs intact if not double insulated.

6.6.6 No work will be done on electric lines or electrically activated equipment, until an employee has verified that the equipment has been shut off, completely de-energized, and locked out and tagged out to prevent movement or accidental restarting.

6.6.7 Extension cords must have three prongs (a functioning ground wire). All extension cords will be minimum of #12 AWG and rated for "hard or extra hard" usage. Electrical outlets must not be overloaded.

6.6.8 Employees will avoid placing electrical cords and extension cords across aisles, walkways, roads and driveways, and other high-traffic areas. Cords must be no lower than 7 feet overhead. Cords must be hung by a nonconductive means.

6.6.9 All portable generators shall be grounded in accordance with the manufacturer’s recommendations.

6.7 Equipment Operations
6.7.1 Employees are prohibited from operating any company owned or leased vehicles and equipment unless they have been appropriately trained, qualified, licensed and authorized to use that specific equipment.

6.7.2 Employees are responsible for proper use and maintenance of tools and equipment, and any safety equipment that may be issued. Defective tools and equipment must be immediately taken out of service and reported to the employee’s supervisor for repair or replacement. Employees will use tools and equipment for its intended purpose only. Manufacturer’s instructions will be followed when using all tools and equipment.

6.7.3 Jewelry and loose clothing will not be worn when employees operate equipment with exposed moving parts.

6.7.4 Properly trained and qualified personnel, designated by Haselden Construction supervisors or management only, will perform repairs and maintenance.

6.8 Excavations And Trenches

6.8.1 Haselden Construction supervisors are responsible for communicating with a subcontractor representative for each job site location, to identify in advance who the “competent person” or persons are for excavation and trenching activities.

6.8.2 Haselden Construction and subcontractor employees are prohibited from entering any excavation or trench ≥ 5 feet, unless the area is protected from the hazards of cave-ins by sloping or shoring methods that comply with state and federal OSHA standards. Tabulated data for shoring systems must be available on the jobsite.

6.8.3 Where excavations exceed 2 feet in depth, an access ramp shall be provided every 50 feet.

6.8.4 Where Employees must enter excavations ≥4 feet deep, ramps, ladders or stairs must be provided so that workers are not required to travel more than 25 feet to reach an exit.

6.8.5 If rain or snow falls, or water enters the excavation or trench between work shifts, the excavation must be thoroughly inspected by the competent person on-site before anyone re-enters it.

6.8.6 When any new hazard is identified while employees are in the excavation, all exposed employees must be evacuated from the excavation until the situation is corrected. This includes situations in which soil begins to display signs of distress, which may be an indication that the side is about to cave in.

6.8.7 Employees are not permitted to work in excavations or trenches where water is accumulating or has accumulated.
6.8.8 The top of a trench shield must extend at least 18 inches above the top of any excavation having a sloped or vertical side.

6.8.9 Trench shields will not prevent cave-ins. They do not support the walls of the trench. They only protect employees inside the box if the trench caves in. An arm or leg outside the trench shield may be torn off or crushed by falling soil if a cave-in occurs.

6.8.10 Trench shields shall be installed in accordance with the manufacturer's recommendations.

6.8.11 All employees must stay out of the excavation or trench while the trench shield is moved or repositioned.

6.8.12 Stacked trench shields must be bolted together and ladders must be provided for employees to enter and exit the boxes. The ladders must be placed inside the trench shield, and must extend at least 3 feet above the top of the trench shield. Employees must have no more than 25 feet of travel to reach one of the ladders.

6.8.13 Everyone on site must wear ANSI type II high-visibility warning vests.

6.8.14 Measures must be put in place to route traffic away from or safely around excavations and any concrete activities. This includes placing traffic barriers, traffic cones, and high-visibility warning signs.

6.8.15 Small equipment, tool storage, shoring supplies, and spoils piles must be placed at least 2 feet away from the top edge of the excavation. In addition, heavy equipment and vehicles must be positioned at least 2 feet from the top edge of the excavation.

6.8.16 When equipment operators or truck drivers do not have a clear and direct view of the edge of a trench or excavation, barricades, stop logs, or hand signals must be used to warn them of their positions to prevent the vehicle or equipment from falling into the open ground.

6.8.17 If employees will be working on an excavation face at more than one level, they must be protected from falling rock or soil and other materials that may be generated or handled by others working at levels above them. Protective barricades will be necessary at intervals along the face to provide this protection. The excavation face may also be scraped to remove loose materials.

6.8.18 Employees are prohibited from working, standing, or traveling below pipe and other loads being lifted or moved, and below concrete that is being poured into an open trench or excavation. Drivers of vehicles that are being unloaded or loaded may remain in the vehicle cabs during the loading and unloading.
6.8.19 Where employees or portable equipment must cross over an excavation or trench, walkways or bridges with standard 42-inch-high guardrails, midrails, and toe-boards must be provided across the excavation or trench. These bridges must be strong enough to withstand the weight of people, objects and equipment traveling across them.

6.8.20 Where employees must work near the edge of an open trench or excavation that is deeper than 6 feet, with vertical or near vertical sides (sloped 1 ½:1 or steeper), they must be protected from falls by standard guardrails, orange snow fence supported by T posts, or by wearing a personal fall arrest system and lifeline. Lifelines must be tied to a stationary object, away from the open excavation, that is capable of withstanding 5000 pounds of force for each attached worker. (Employees are prohibited from using vehicles as tie-off points for fall protection).

6.8.21 Barriers must be placed around all excavations. All barriers must be placed a minimum of 6’ away from the edge of the excavation. Excavations less than 6’ in depth may use visual barriers (Caution tape). Excavations greater than or equal to 6’ in depth must use both visual and physical means to barricade it (jersey barriers, multiple levels of reinforced danger tape, and orange fence).

6.8.22 Unattended excavations and trenches, and those in remote areas, require barricades or covers with warning signs to prevent persons and equipment from falling into them. Large excavations may require temporary fencing to prevent unauthorized access. Barriers with flashing warning lights should be used when excavations are left open after dark near roadways or pedestrian walkways.

6.9 Fall Protection

6.9.1 100% fall protection is required any time an employee is working in an unprotected area at or above six (6) feet, or when in an aerial lift or scissors lift, regardless of equipment guardrail height.

6.9.2 Training must be given to all potentially exposed employees in the use of fall protection devices, such as guardrails, harnesses, shock absorbing lanyards, static lines, vertical lifelines, and horizontal lifelines.

6.9.3 Employees must be familiar with the use of fall protection systems in the work site and must be able to identify potential fall. Each employee must demonstrate ability to calculate their fall distance at any time.

6.10 Forklift/Industrial Truck Operations

6.10.1 Only Haselden drivers authorized, licensed, and trained by Haselden Construction in the safe operations of forklifts are permitted to operate such vehicles. Subcontractors must provide authorization and training for all forklift drivers working for them. Stunt driving and horseplay are prohibited.
6.10.2 Employees shall not ride on the forks of lift trucks.

6.10.3 Employees will not place any part of their bodies outside the cab of a forklift or between mast uprights or other parts of the forklift where shear or crushing hazards exist.

6.10.4 Employees will not be allowed to stand, pass, or work under the elevated portion of any forklift, loaded or empty, unless it is effectively blocked to prevent it from falling during operation, maintenance or repairs.

6.10.5 Drivers will check the forklift for damage and defects at least once before each work shift and must complete a written inspection checklist. Any unsafe equipment must be reported immediately to the Employee’s supervisor. The damaged or defective forklift will be taken out of service until it has been made safe.

6.10.6 Forklifts with fuel system or hydraulic leaks will not be operated until the leaks are repaired.

6.10.7 Forklifts will not exceed the authorized or safe speed for each work area.

6.10.8 Drivers must maintain a safe distance from other vehicles, keeping the forklift under positive control at all times and obey all established traffic regulations. For forklifts traveling in the same direction, a safe distance is approximately 3 truck lengths or preferably a time lapse of 3 seconds between the two forklifts when they pass the same fixed point.

6.10.9 Forklifts traveling in the same direction shall not be passed at intersections, blind spots, or dangerous locations.

6.10.10 The driver shall slow down and sound the horn at intersections and other locations where vision is obstructed.

6.10.11 Operators shall look in the direction of travel and shall not move a forklift until certain that all persons are clear of the equipment.

6.10.12 Forklifts shall not be driven near anyone who could become pinched or caught between the forklift and any object.

6.10.13 Drivers will ensure that forklifts ascend and descend grades slowly.

6.10.14 When ascending or descending grades in excess of 10 percent, loaded forklifts shall be driven with the load upgrade.

6.10.15 On all grades the load and forks shall be tilted back if applicable, and raised only as far as necessary to clear the road surface. The forks shall always be carried as low as possible, consistent with safe operations.

6.10.16 Repairs and modifications to forklifts shall only be performed by the manufacturers’ certified or approved repair persons. The Haselden
Control of Hazardous Energy policy shall be followed to prevent injury to repair and maintenance employees.

6.10.17 When leaving a forklift unattended, the power shall be shut off, brake set, the mast brought down to a neutral position, and forks left in the down position.

6.10.18 When left on an incline, the wheels shall be blocked.

6.10.19 Forklifts shall not be run onto any elevator unless the driver is specifically authorized to do so. Before entering an elevator, a qualified person shall determine that the weight limit of the elevator will not be exceeded. Forklifts and motorized hand trucks shall not enter elevators or hoists without identifying the capacity of the elevator/hoist and the weight of the load plus the weight of the forklift/hand truck. The total weight of the load plus dynamic force must not equal or exceed the elevator/hoist capacity. Once a forklift is allowed to enter an elevator, the forklift power shall be shut off and the brakes set.

6.10.20 Motorized hand trucks shall enter elevators or other confined areas with the load end forward.

6.10.21 Forklifts shall not be operated on floors, sidewalks, or platforms that will not safely support the loaded vehicle.

6.10.22 Prior to driving onto trucks, trailers and railroad cars, the flooring shall be checked for breaks and other structural weaknesses that could cause the forklift to break through the floor.

6.10.23 Forklifts shall not be loaded in excess of their rated capacity.

6.10.24 A loaded forklift shall not be moved until the load is safe and secure.

6.10.25 Extreme care shall be taken when tilting loads. Tilting forward with the forks elevated shall be prohibited except when picking up a load. Elevated loads shall not be tilted forward except when the load is being deposited onto a storage rack or equivalent. When stacking or tiering, backward tilt shall be limited to that necessary to stabilize the load. Unsecured loads shall not be stacked above the level of the backrest.

6.10.26 The forks shall be placed in such a manner that the load will be securely held or supported.

6.10.27 Special precautions shall be taken in the securing and handling of loads by forklifts equipped with attachments. A letter from the forklift manufacturer approving use of the particular attachment must be available on site.

6.10.28 All forklifts must be equipped with, ROPS, Roll Over Protection Systems.

6.10.29 Forklift operators must securely fasten their seat belts at all times.
6.10.30 Forklift operators will reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.

6.10.31 Forklift operators will stay off slopes too steep for safe operation.

6.10.32 Forklift operators must watch where the vehicle is going, especially at row ends, on roads, and around trees.

6.10.33 No passengers are allowed on forklifts.

6.10.34 Forklifts must be operated smoothly — with no jerky turns, starts, or stops.

6.10.35 Loads must be supported on the forks, or from a fork mounted lifting attachment (see 6.10.27), or from a manufacturer approved lifting point.

6.11 Hazard Communication

6.11.1 Every employee has the right to be informed of the hazards and safe work practices associated with their work assignments. A list of all chemical products containing hazardous substances, and a Safety Data Sheet (SDS) for each covered product should be present in the work area at all times. A SDS must be readily accessible to all affected employees during all working hours. This includes a SDS for motor oils, lubricants, antifreeze, windshield washer fluids, gasoline, diesel and other fuels, cleaning supplies, solvents, paints, batteries, copier toner, glues or bottled gasses.

6.11.2 Supervisors are responsible for training employees in how to read the SDS and for ensuring that employees understand the content of the SDS for their work activities in a format they can readily understand.

6.11.3 Employees shall be trained in chemical hazards in the workplace before they are exposed to such hazards.

6.11.4 Chemical containers will be labeled with the chemical name and appropriate hazard warnings in accordance with Haselden Construction hazard communication program. Haselden Construction will use the chemical suppliers’ labels and hazard warnings. Employees will not remove or deface labels or hazard warning signs. Where a label or warning sign is missing, employees will contact their supervisor to obtain a replacement, before using the chemical.

6.11.5 Secondary chemical container labels shall be used in accordance with Haselden’s policy and OSHA and GHS requirements, and must contain the chemical name, signal word and pictogram(s).

6.11.6 Hand washing facilities with soap, water and towels must be provided whenever employees are working on activities that generate respirable silica, are engaged in the application of paints, coating, herbicides, or
insecticides, or in other operations for which the SDS requires employees to wash hands before eating, drinking or smoking, or after use.

6.11.7 Employees are not allowed to mix any cleaning products or other chemical products unless specifically directed to do so by their supervisors. Mixing of chemical products such as cement and excessive amounts of curing agents may release heat, excessive pressure or toxic gases and vapors that can cause serious injuries.

6.11.8 Work area supervisors are responsible for informing contractors and visitors of any hazardous chemicals used by Haselden Construction and present in their assigned work locations. Subcontractors must inform the Haselden Construction work area supervisor of the presence of any hazardous chemicals in their work operations. Subcontractors must label their containers and provide SDS sheets to the Haselden Construction supervisor prior to bringing new chemical materials on-site.

6.11.9 Safety Data Sheets must be GHS compliant.

6.12 Hand And Power Tools

6.12.1 Haselden Construction will supply as necessary all power tools essential in the performance of our work. Employees are responsible for inspecting, maintaining, cleaning, using, and storing all power tools per the manufacturers operating instructions and Haselden Construction requirements.

6.12.2 Power tools which are found to have damaged electrical cords, missing or broken guards or components shall be removed from service immediately and tagged out of service. Immediately inform your supervisor of defective or damaged equipment.

6.12.3 Employee hand tools are the sole responsibility of the employee. If they are damaged or stolen the employee is to replace them at their own expense. No damaged or defective hand tools are to be used on Haselden Construction projects.

6.12.4 Powder actuated guns, tools, or devices, may only be utilized by trained, qualified and certified operators. Operators are required to have proof of training cards in their possession while operating any powder actuated device or tool. All operators are to shout/yell (fire or shoot) prior to discharging or firing a powder actuated device. Unspent, wasted or used rounds will be disposed of with the manufacturer’s recommendations but not dropped on the ground or floor.

6.12.5 Signage must be posted to make everyone aware of the use of powder actuated tools or lasers in the area.

6.13 Housekeeping
6.13.1 Good housekeeping is essential to having a safe and productive project. Housekeeping is everyone’s responsibility. All site workers are responsible for maintaining a clean and organized work area free from clutter, debris and trash.

6.13.2 The Project Superintendent at the beginning of a project will determine the means and methods for maintaining a clean site. This may include daily ongoing cleanup operations or weekly composite cleanup crews consisting of employees from all subcontractors working one or two days a week exclusively on clean-up of common areas.

6.13.3 Subcontractor’s materials and employee food waste will be cleaned up on a continuous ongoing basis with no more than one-day’s accumulation of scrap, combustible or flammable materials.

6.13.4 Materials containing sharp edges, nails or impalement hazards will be blocked or protected from coming in contact with employees until such time that it can be disposed of in a safe manner.

6.13.5 Garbage and refuse containers will be available and accessible in all work areas including exterior work zones.

6.14 Ladders

6.14.1 Employees will not use chairs, buckets, or other furniture in place of appropriate ladders or stepstools.

6.14.2 Every ladder and stepladder must be marked with its maximum safe load and the highest point where the user can safely stand on the ladder.

6.14.3 Portable extension ladders will be tied off, blocked, or held to ensure that they are secure before employees are allowed to climb onto the ladder.

6.14.4 Access ladders must be secured at both the top and bottom of the ladder.

6.14.5 Ladders will be put away when not in use and stored in a manner as not to damage or stress the ladder.

6.14.6 Ladders will only be used for their intended purpose. Folding ladders will not be used while folded as a substitute for straight ladders.

6.14.7 Only one person will be permitted on a ladder at a time unless it is manufactured and designed for more than one person.

6.14.8 Employees will inspect each ladder for damage and defects before each use. Defective ladders will be tagged “Do Not Use” and removed from service immediately.

6.14.9 Employees who are required to use ladders will be trained by their supervisor in safe ladder work practices.
6.14.10 Manufactured wooden and aluminum ladders will not be permitted on Haselden construction sites.

6.14.11 All portable metal ladders are prohibited on Haselden Construction sites.

6.14.12 When using an extension ladder, employees will position the base of the ladder one-foot out from the wall for every four feet up the wall to the point where the ladder rests against the wall.

6.14.13 Ladders will be erected on sound footing with both feet resting flat on the floor or ground.

6.14.14 All extension ladders will extend a minimum of three feet above the work surface or access platform.

6.14.15 Ladders shall have a minimum duty rating of Type 1 Heavy Duty.

6.15 **Lockout/Tagout And Control Of Hazardous Energy**

6.15.1 Refer to Haselden’s Hazardous Energy Contol Policy

6.16 **Machine Guarding**

6.16.1 Machines and equipment with pulleys, belts, and other moving parts that could injure workers will be effectively guarded to prevent accidental contact with moving parts and pinch points.

6.16.2 Where physical guards are not feasible, other controls and equipment-specific safety procedures will be implemented to warn employees of hazards and minimize the risk of injuries.

6.16.3 Employees are prohibited from removing guards or bypassing warning alarms or safety interlocks.

6.16.4 Maintenance and repairs will only be performed by qualified individuals with adequate training for the specific equipment to be worked on. The Haselden Construction superintendent must approve maintenance and repair operations before any work begins.

6.17 **Noise Hazards**

6.17.1 Warning signs will be posted in each work area where Haselden Construction employees may be exposed to noise levels that could cause occupational hearing loss.

6.17.2 Engineering controls will be used to the extent feasible to reduce noise levels. It is the employee’s responsibility to wear the required hearing protection if engineering controls are not adequate or feasible.

6.17.3 Whenever noise monitoring identifies an operation where noise levels exceed 85 dB TWA, hearing protection will be required.
6.17.4 Impact noise or any one time instant noise greater than or equal to 115 dB must be engineered to a lower decibel level or hearing protection will be required.

6.17.5 Signs or placards will be posted to identify areas where hearing protection is required.

6.17.6 Audiometric testing, noise monitoring and annual training will be provided by Haselden Construction for all employees at risk of noise exposure.

6.18 Permit-Required Confined Spaces

6.18.1 Haselden Construction employees are strictly prohibited from entering the inside of permit confined spaces for any reason at any time. Haselden Construction may use subcontractors with appropriate confined space training and equipment, to perform any construction, cleaning, repairs or maintenance that requires entering these spaces.

6.18.2 All contractors performing confined space work will submit a detailed plan to Haselden Construction prior to entering any permit confined space.

6.18.3 Employees are prohibited from performing permit required confined space rescue operations without appropriate entry and rescue equipment and confined space training that meets state and federal OSHA confined space standards.

6.19 Personal Protective Equipment

6.19.1 All employees entering a Haselden construction site must wear appropriate ANSI rated safety glasses with side shields or safety goggles 100% of the time.

6.19.2 Prescription glasses must be rated ANSI Z87 2+.

6.19.3 Welding goggles or welder’s face shields are required for all welding operations.

6.19.4 All employees on site are to wear ANSI Type II high-visibility warning vests.

6.19.5 Employees must wear sturdy leatherwork boots with closed toes at all times. Sandals, “tennis” shoes, and other “dress” shoes and open-toed footwear are not appropriate for maintenance shops, storage yards, construction sites or customer work locations.

6.19.6 Employees must wear steel-toed safety shoes when working on job sites that require them or where a hazard exists that poses a foot crushing condition such as, work areas where tools or heavy objects may fall on the employees’ feet. This includes wearing of safety shoes when performing tamping or compacting operations.
6.19.7 Supervisors are responsible for ensuring that employees are trained in the safe use, maintenance and cleaning of any PPE required for their assigned work tasks. Training will be completed prior to the employee's first assignment.

6.19.8 Haselden Construction will provide PPE for use to all Haselden employees. Subcontractors must provide PPE to all of its employees.

6.19.9 The project superintendent and the Director of Health and Safety or Designee must approve any employee-provided PPE prior to its use in the workplace.

6.19.10 Employees are responsible for cleaning and maintaining their assigned PPE. This includes notifying their supervisor of any damaged or defective equipment. Damaged or defective equipment will be repaired or replaced immediately.

6.19.11 Haselden employees must wear Haselden Construction supplied hard hats at all times when working on any job site. All employees will wear the hard hat with the brim and company logo to the front. Baseball caps will not be worn under any hard hat. Only decals supplied by Haselden Construction may be placed on a hard hat. Decals may only be placed on the sides and rear of the hard hat.

6.20 Personal Protective Equipment and Apparel Requirements for Visitors

6.20.1 Hard hat (Haselden logoed for Haselden visitors)

6.20.2 Class 2 reflective vest (Haselden logoed for Haselden visitors)

6.20.3 Full length pants. No shorts or Capri style slacks are to be worn at any time on a project.

6.20.4 Everyone must have at a minimum three inches of sleeve on a shirt or blouse. Sleeveless shirts, midriff shirts, tank tops or low-cut blouses are not acceptable.

6.20.5 Refrain from wearing excessively loose-fitting shirts, jackets or pants.

6.20.6 Wear appropriate foot wear. No office or street shoes are permitted. Open toe or high heeled leather or manufactured shoes that are not cut resistance are not acceptable. For visitors only this means at a minimum a hiking type shoe or work boot with strong rubber soles, leather upper or a cut resistant type of shoe preferably extending above the ankle. Shoes which do not cover the ankle or are less than 6” tall may limit a visitor’s ability to walk the entire site based on ground conditions. Tennis shoes are not permitted, even safety type tennis shoes which lack cut or puncture resistance.

6.20.7 ANSI Z87 safety eye wear rated for impact resistance. Sunglasses which are not ANSI Z87 rated are not acceptable. If an employee wears
prescription glasses that are not stamped ANSI Z87 2+, safety glasses or goggles must be worn over them.

6.20.8 Areas on a project where respiratory hazards exist are off limits to visitors.

6.21 **Respiratory Protection**

6.21.1 Haselden Construction has developed a Respiratory Protection Program for the safety of employees who may be at risk for exposure to respirable silica, airborne contaminants, toxic or oxygen deficient atmospheres. Employees that must work in these types of situation must be familiar with respirators, including selection, proper fit and maintenance.

6.21.2 All employees engaged in operations that require the use of respirators are required to receive training on respirator use.

6.21.3 Respirators shall only be used in emergencies or when engineering controls such as proper ventilation fail to prevent harmful exposure to employees.

6.21.4 All respirators selected for use must be NIOSH approved for that use.

6.21.5 Training will be carried out at the direction of a Competent Person prior to use of any respirator. Employees designated to select and issue respiratory equipment shall be adequately trained in the selection process. All employees will be trained in the use and care of respiratory equipment prior to first use and annually thereafter.

6.21.6 Respiratory equipment shall be inspected regularly and maintained in good condition. Canisters and chemical cartridges shall be replaced as necessary to provide complete protection. Mechanical filters shall be cleaned or replaced as necessary.

6.21.7 Respiratory equipment that has been used shall be cleaned and disinfected after use and/or prior to use.

6.21.8 All Haselden Construction Employees who are required to wear respiratory equipment must complete a medical questionnaire pertaining to general health conditions. The form must be reviewed by a health care professional to determine whether or not the employee is physically fit to wear respirators in the scope of work. The employee will receive a pulmonary function test, TB screen and chest X ray. A fit test will also be performed to make sure the employee is capable of wearing the respirator provided.

6.22 **Safe Lifting And Back Injury Prevention**

6.22.1 Employees will use hand trucks, dollies, pallet jacks or other mechanical devices to lift and move heavy objects. Where mechanical devices are
not feasible, at least two physically fit workers will perform the lifting and moving.

6.22.2 Employees should bend their knees, grip the load close to the chest, and lift with their legs when stacking or moving cartons and other supplies.

6.22.3 Employees must clear the path of travel before moving loads, to remove slip, trip and fall hazards.

6.22.4 Employees should obtain a secure grip on each load and lift with the leg muscles, maintaining a slightly arched back while lifting.

6.22.5 Where files are being transferred in or out of filing cabinets, employees will open only one file drawer at a time.

6.22.6 Objects and files stored indoors stacked at heights greater than 3 feet should be restrained or tied in place to prevent falling.

6.23 Scaffolding Use

6.23.1 Only employees who have been trained and qualified as a competent person shall perform scaffolding erection and inspections.

6.23.2 All scaffolds shall have guard rails if the work deck is over four feet from the adjacent surface. If this is not feasible then other fall protection measures must used.

6.23.3 All scaffolds shall be decked completely at levels where work will be performed. No gaps greater than 1” or spaces with a potential for step through shall be permitted.

6.23.4 All scaffolds will be inspected and appropriately tagged before each days’ use.

6.23.5 Employees will dismount rolling scaffolds before moving their scaffold to the next work station.

6.23.6 Employees will only use scaffolds that are in good working order with no visible damage, defects, or missing parts.

6.23.7 Employees will only use scaffolds that are vertically plumb and level and on stable ground.

6.23.8 Ice, snow, debris, or excess materials will be removed from scaffolds on a daily basis before work commences.

6.23.9 No open sided scaffold will be more than 14” from the face of the work, or 18” from the face of plaster operations.

6.23.10 Adequate access to scaffolds will be maintained at all times.
6.23.11 A color coded tagging system shall be used to communicate the inspection status of the scaffold. Tags shall be place at all access locations.

6.23.12 Green tags shall be removed at the end of each shift and the scaffold shall be red tagged until inspected before the next use.

6.24 **Subcontractors**

6.24.1 The Safety Program Administrator is responsible for reviewing specific safety and health requirements applicable to the contractor's scope of work with each subcontractor prior to their beginning work on Haselden Construction property or job sites.

6.24.2 All subcontractors are required to comply with all Haselden Construction Safety practices, policies, or procedures unless written permission is granted by Haselden Director of Safety and Health or Designee.

6.24.3 Contractors will comply with all applicable local, state, and federal health and safety laws and regulations while on Haselden Construction projects or Haselden property.

6.24.4 Contractors will provide Haselden Construction with a detailed incident report in the event of personal injury/illness, exposure, vehicle incident or property damage. Haselden Construction supervisors and management may participate in investigations of contractor incidents.

6.25 **Welding And Hot Work**

6.25.1 A Hot Work permit is required for any burning, welding, cutting or other hot work activity. This includes spark-generating activities such as abrasive grinding, and work that may produce hot surfaces.

6.25.2 Only authorized and trained personnel are permitted to use welding, cutting or brazing equipment.

6.25.3 Compressed gas cylinders, welding cables and electrodes must be regularly examined for obvious signs of damage, defects, deep rusting, or leakage.

6.25.4 Welders must wear hard hats at all times.

6.25.5 Employees performing hot work shall remove their traffic vests, and don them when moving to or from the hot work location.

6.25.6 Grounding of the machine frame and safety ground connections of portable welding machines and generators must be checked periodically. Work and electrode lead cables must be frequently inspected for wear and damage, and replaced when needed.
6.25.7 Electrodes will be removed from the holders when not in use. Electric power to the welder must be shut off when unattended.

6.25.8 10 lb. ABC fire extinguishers must be available in the immediate work area during all hot work.

6.25.9 Welders will not coil or loop welding electrode cable around their bodies.

6.25.10 Welding cable is not permitted to be coiled or looped when it is in use.

6.25.11 Wet machines must be thoroughly dried and tested before being used.

6.25.12 When the object to be welded cannot be moved and fire hazards cannot be removed, shields must be used to confine heat, sparks, and slag.

6.25.13 A fire watch person must be assigned when welding or cutting is performed, in locations where a serious fire might develop.

6.25.14 Combustible floors must be kept wet, covered by damp sand, or protected by fire-resistant shields during hot work. When floors are wet down, personnel must be protected from possible electrical shock.

6.25.15 Welders must wear welding shields or welder’s goggles that have a high enough filter rating to prevent eye injuries from ultraviolet radiation generated by the welding.

6.25.16 Welders must wear heavy leather gloves, coveralls and/or aprons to prevent skin burns and contact with hot metal and electrodes.

6.25.17 Welding screens must be used to protect other Employees and the public from exposure to ultraviolet light generated by welding.

7.0 Attachments:

7.1 N/A
1.0 Purpose

1.1 This policy applies to completed areas of buildings where potential hazards may be present due to exposed or concealed electrical, mechanical or other potentially hazardous installations with which employees may come into contact, or systems that are critical for life safety in an occupied structure. Examples of these areas include ceilings, walls, mechanical shafts, interstitial spaces, air handling units, mechanical rooms and medical gas chases.

2.0 Scope

2.1 This policy applies to all completed work areas of Haselden projects that may pose a hazard arising from concealed installations.

3.0 Definitions

3.1 Qualified Person: A person who has the knowledge, experience and/or professional certification to recognize hazards associated with specialty trade work such as mechanical, electrical, hydraulic and pneumatic installations.

4.0 Reference Documents

5.0 Responsibilities

6.0 Implementation

6.1 Hazard Assessments

6.1.1 In the event that trades must perform work in a completed area where electrical, mechanical or other potentially hazardous energy sources exist, either surface mounted or concealed, an electrical, mechanical or other specific hazard assessment will be performed by a Qualified Person(s) specializing in each energy source. Deficiencies shall be corrected prior to commencing work operations, with corrections reported to Haselden Construction.

6.1.2 Examples of such hazards are open electrical boxes, current leakage, unprotected conductors, active temporary utilities, chemical leakage, hazardous chemical lines, pneumatic lines, thermal hazards, critical systems, and exposed moving parts.

6.1.3 A hazard analysis shall be prepared by the Qualified Person(s) and given to Haselden Construction for distribution to the affected trades.
6.2 Trade Operations

6.2.1 Specialty Subcontractors who may come back to perform change order, punch list or other work activities that could expose employees to potential hazards within a completed area must notify the Haselden Project Management team of this work and coordinate with other Contractors to ensure their affected employees are aware of the hazards of the work.

6.2.2 Specialty Subcontractors must prepare a Job Hazard Analysis tracked on the Completed Area Hazard Assessment prepared by Qualified Persons familiar with the systems in place and submit it to Haselden Construction for acceptance prior to performing the work.

7.0 Attachments:

7.1 Completed Area Hazard Assessment Form
The Qualified Person who has assessed the area(s) described below must initial the block that corresponds with the hazard they assessed. Any hazard blocks that are not present in an area shall be marked “N/A”. The Qualified Person(s) must then sign off at the bottom of the form.

### Completed Area Hazard Assessment Form

Haselden Construction has identified the following areas that require a specific hazard assessment:

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<tr>
<th>Area Required for Assessment</th>
<th>Specific Hazards Assessed</th>
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<td>Electrical</td>
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Please complete this Hazard Assessment in accordance with the Haselden Completed Area Assessment Policy and submit a record of observations and corrections to Haselden Construction.

I certify I received Hazard Assessments from a Qualified Person noted above.

Name of HC Team Member: [Name]
Signature: [Signature]
1.0 Purpose

1.1 This program describes the minimum requirements associated with the use, transporting, and storage of compressed gas cylinders. It does not address:

1.1.1 Oxy-fuel gas burning/heating requirements, such as welding, torch cutting, soldering, brazing, hot work, etc. See HC Gas Welding Program.

1.1.2 Breathing-air cylinder use and sampling.

2.0 Scope

2.1 This program covers Compressed Gas Cylinders and their use on all Haselden projects and related work.

2.2 This program covers using gas for temporary heat.

3.0 Definitions

3.1 Fuel Gas – Acetylene, MAPP, propane, natural gas, etc., that is used to cut, heat, solder, or weld metals.

3.2 Oxy-Fuel Gas – Combination of oxygen and a fuel gas that is used in various metal cutting and heating processes.

3.3 Store/Stored/Storage – Compressed gas cylinders, regardless of number, not intended for use within a 24 hour period; this does not apply to cylinders connected to a manifold system used in lab and shop settings.

3.4 In use – Compressed gas cylinders, intended to be used within a 24 hour period.

3.5 Liquefied Petroleum Gases (LPG and LP Gas) – Any material composed predominantly of any of the following hydrocarbons or mixtures such as propane, propylene, butane (normal butane or isobutene), and butylenes.

4.0 Reference Documents

4.1 29 CFR 1910.256 - OXYGEN-FUEL GAS WELDING AND CUTTING

4.2 29 CFR 1926.350 – GAS WELDING AND CUTTING
4.3 OSHA Standard Interpretation - STORAGE OF GAS CYLINDERS ON CONSTRUCTION SITES; CLARIFICATION OF "IN STORAGE"

4.4 OSHA Standard Interpretations - ACCEPTABILITY OF AN ENGINEERED STEEL FIRE BARRIER TO COMPLY WITH SEPARATION/FIREWALL REQUIREMENTS

4.5 OSHA Construction Safety And Health Outreach Program – TRANSPORTING, MOVING, AND STORING COMPRESSED GAS CYLINDERS

4.6 HASELDEN Respiratory Protection Program

5.0 Responsibilities

5.1 Director of Safety and Health or Designee

5.1.1 Assign responsibilities for implementation of this policy.

5.1.2 Verify compliance with this policy on a periodic basis

5.1.3 Update this program as required.

5.2 Site Superintendent

5.2.1 To assure that all site employees are trained in accordance with Haselden Construction training requirements.

5.2.2 To periodically review the implementation of this program.

5.2.3 To enforce disciplinary action for violations of this program.

5.2.4 Ensure local utility and fire department requirements are followed for storage, handling and use of compressed gas.

6.0 Implementation

6.1 General

6.1.1 Haselden projects and subcontractors will NOT accept any compressed gas cylinder from a distributor or supplier unless the cylinder is clearly identified with a proper manufacturer’s label.

6.1.1.1 Cylinders will be legibly marked with either the chemical or the trade name of the gas stamped, stenciled or labeled on the shoulder of the cylinder.

6.1.1.2 Defective cylinders will be tagged as “Defective – Do Not Use”, segregated from other cylinders, and removed from the site.

6.2 Safe Use
6.2.1 Prior to beginning work requiring the use of compressed gas cylinders, subcontractors will ensure their employees have been instructed in inspection and safe usage of compressed gases.

6.2.1.1 Visually inspect cylinders prior to use.

6.2.1.1.1 Checks for leaks, cracks, and damage to the shell. Check the condition of the safety relief device, gauges, valve, protective cap and stem;

6.2.1.1.2 Ensure the threads of the regulator fit those on the cylinder.

6.2.1.1.3 If defects are found, remove the cylinder from service and return to the supplier.

6.2.1.2 Check cylinder valve for dust and foreign particles.

6.2.1.2.1 Before connecting the regulator cylinder valve should be checked for foreign particles by “cracking open” the valve to blow out any foreign particles.

6.2.1.2.2 Cylinders valves on acetylene and fuel gas bottles will be opened one-quarter (1/4) turn only.

6.2.1.2.3 If the cylinder does not have a valve handle, a valve wrench will be used to crack open the valve and left in place while the valve is open.

**NOTE:** Only cylinder valve wrenches shall be used for this purpose.

6.2.1.2.4 Personnel will:

6.2.1.2.4.1 Stand to one side of the regulator when opening the cylinder valve.

6.2.1.2.4.2 Slowly open the valve.

6.2.1.3 Employees will be instructed never;

6.2.1.3.1 Exceed fifteen (15) psi on the torch side of the gauge whenever using acetylene as the fuel gas;

6.2.1.3.2 Use compressed gas to clean clothing, blow out cinch anchor holes, or to clean a work area;

6.2.1.3.3 Use oxygen in pneumatic tools, to pressurize containers, to blow out lines, or as a substitute for compressed air or other gases;
6.2.1.3.4 Weld, burn or use a cutting torch above unprotected cylinders and hoses or;

6.2.1.3.5 Strike a welding arc on cylinders.

6.2.1.4 Cylinders shall be used and secured to the forklift according to the manufacturer’s requirements.

6.2.1.5 Liquefied Petroleum Gas (LPG) portable containers with a capacity of 100 lb or less are allowed to be used in buildings undergoing construction or for temporary heating.

6.2.1.6 A fire extinguisher is to be kept in all areas of LPG use or storage. Minimum acceptable extinguisher is 10 lb ABC.

6.2.1.7 Only cylinders complying with Department of Transportation (DOT) standards shall be used.

6.2.1.7.1 DOT marking and labels shall be legible.

6.2.1.7.2 All cylinders shall have a relief valve.

6.2.1.7.3 All cylinders shall be filled by properly trained personnel

6.2.1.7.4 All cylinders shall be filled by weight, (to prevent over-filling)

6.2.1.7.5 All valves and piping shall be protected

6.2.1.7.6 Excessive flow valve must be provided

6.2.1.7.7 All appurtenances, (i.e. burners, piping, hoses) shall be approved for LPG use by a nationally recognized testing laboratory and clearly marked or stamped.

6.2.1.7.8 All connections shall be subjected to a leak test using soapy water.

6.2.1.7.9 Cylinders used for temporary heating shall have a minimum six feet of separation from the heater. Heaters shall not be pointed toward the cylinder.

6.2.1.7.10 ‘NO SMOKING’ signs shall be posted.

6.2.1.7.11 Heaters in the same room shall be separated from each other by at least 20 feet and should not be pointed toward each other.

6.2.1.7.12 Safety devices on LP-gas containers, equipment and systems shall not be tampered with or made ineffective.
6.2.1.7.13 On a manifold system, an emergency shutoff valve shall be installed per the National Fire Protection Association (NFPA) Standard 58.

6.2.1.7.14 When exposed to potential vehicle damage due to proximity to alleys, driveways or parking areas, LP-gas containers, regulators and piping shall be protected by guard posts, add concrete barriers or other protection, installed around the perimeter of the area.

6.2.1.7.15 Storage of LPG

<table>
<thead>
<tr>
<th>Quantity of LP-Gas Stored, unless local code is more restrictive</th>
<th>Distances to a Building or Group of Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 6,000 lb.</td>
<td>10 feet</td>
</tr>
<tr>
<td>6,001 to 10,000 lb.</td>
<td>20 feet</td>
</tr>
<tr>
<td>Over 10,000 lb.</td>
<td>25 feet</td>
</tr>
</tbody>
</table>

6.3 Safe Handling and Transporting of Cylinders

6.3.1 Serious injury can result from the misuse, abuse, or mishandling of compressed gas cylinders. Therefore, Haselden or subcontractor employees assigned to handle cylinders will:

6.3.1.1 Keep manual handling of cylinders to a minimum.

6.3.1.2 NEVER roll cylinders horizontally or use them as a roller even if they are empty.

6.3.1.3 NEVER drag, push/pull, drop, or bang cylinders together or across the floor or ground.

6.3.1.4 NOT have the marks and numbers stamped on the cylinders changed, or repaint cylinders.

6.3.1.5 Keep the cylinders clean and protect them from damage.

6.3.1.6 NOT leave cylinders "free-standing" at any time; this includes small cylinders used for brazing etc.

6.3.1.7 NOT tamper with safety devices in valves or on cylinders.

6.3.1.8 Close cylinder valves and replace valve protection caps when hoses or regulators are removed.

6.3.1.9 NOT subject cylinders to temperatures above 125° F.
6.3.1.10 **NOT** store cylinders in areas where the potential exists from them to become part of an electrical circuit.

6.3.1.11 Clearly write “**EMPTY**” in chalk or with a non-permanent marker or tag empty cylinders that are to be returned to the vendor.

### 6.3.2 Transportation of Cylinders:

- **6.3.2.1** Transport in an upright position.
- **6.3.2.2** Secure in racks, cages, or cradles with regulators removed, and protective valve caps installed, even when moving them in a wheeled cylinder cart.
- **6.3.2.3** Hoist in an enclosed cage or lifting cradle specifically design for hoisting cylinders.
  - **6.3.2.3.1** Do **NOT** hoist or lift by wrapping slings around cylinders, or by attaching anything to the valve, protective valve cap, or collar.
  - **6.3.2.3.2** Do **NOT** lift with electromagnets.

### 6.4 Storage

- **6.4.1** Maintain cylinders in an upright position at all times.
- **6.4.2** Secure in a storage rack or steel structural column with chain in a dry, well-ventilated area protected from equipment and traffic.
- **6.4.3** Secure cylinder with chain 2/3 from the bottom of the cylinder; not by the valve or collar.
- **6.4.4** When not in use and the cylinder valve is not protected by a collar, the regulator will be removed and the valve cap put in place and screwed down.
- **6.4.5** Cylinders should be stored so they can be used in the order they are received.
- **6.4.6** Smoking, sparking-producing work, and open flames are **NOT** permitted within 20 feet of any cylinder storage area containing flammable gas; signs prohibiting these activities in cylinder storage areas will be posted.
- **6.4.7** Storage area will be a minimum of 50 feet from permanent structures and easily accessible for pickup and delivery of cylinders.
- **6.4.8** A minimum of one 20 pound, ABC fire extinguisher shall be mounted no closer than 25 feet and no further than 75 feet from a cylinder storage area.
6.4.9 Do **NOT** store, use, or transport in a manner that exposes them to electrical arcs, sparks, slag, flame, oil, or volatile liquids.

6.4.10 Do **NOT** take into vessels, tanks or other confined spaces, or store near elevators, gangways, stairwells or other places where they can easily be knocked down or damaged.

6.4.11 Segregate for storage by the type and amount of contents. Store full and empty cylinders separately.

6.4.12 Have valves closed; even empty cylinders, with the protective cap screwed on hand tight.

   6.4.12.1.1 Storage racks will be used to store cylinders.

6.4.13 Specific gas cylinder storage guidelines.

   6.4.13.1 Oxygen and oxidizing gas cylinders storage requirements:

   6.4.13.1.1 Store separated from fuel gas cylinders, other highly combustible material, oil, grease, wood, and sawdust.

   6.4.13.1.2 Separate from flammable gases by at least 20 feet or separate by a solid noncombustible barrier, at least 5 feet high having a fire-resistant rating of at least 30 minutes.

   6.4.13.1.3 Gas cylinders will be stored with the valve end up.

   6.4.13.1.4 Oxygen and Fuel gas cylinders in carts that are not in use (not to be used for a period of 24 hours or over a weekend) will be separated by a ¼” steel barrier at least 5 feet high having a fire-resistant rating of at least 30 minutes or cylinders will be removed and separated by at least 20 feet.

6.4.14 Temporary Heating


   6.4.14.2 Fresh air shall be supplied in sufficient quantities to maintain the health and safety of workmen. Where natural means of fresh air supply is inadequate, mechanical ventilation shall be provided.

   6.4.14.3 Temporary heating devices shall not be used in confined spaces, unless approved by the Corporate Safety Director or designee.
6.4.14.4 Temporary heating devices shall be installed to provide clearance to combustible material not less than the amount shown in the table below.

6.4.14.4.1 Do not place materials on temporary heaters.

6.4.14.5 Temporary heating devices, which are listed for installation with lesser clearances than specified in the following table, may be installed in accordance with their approval.

<table>
<thead>
<tr>
<th>Heating Appliances</th>
<th>Minimum Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sides</td>
</tr>
<tr>
<td>Room heater, circulating type</td>
<td>12</td>
</tr>
<tr>
<td>Room heater, radiant type</td>
<td>36</td>
</tr>
</tbody>
</table>

6.4.14.6 Heaters not suitable for use on wood floors shall not be set directly upon them or other combustible materials. When such heaters are used, they shall rest on suitable heat insulating material or at least 1 – inch concrete, or equivalent. The insulating material shall extend beyond the heater 2 feet or more in all directions.

6.4.14.7 Heaters used in the vicinity of combustible tarpaulins, canvas, or similar coverings shall be located at least 10 feet from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

6.4.14.8 Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot (if used), in the event of flame failure.

6.4.14.9 Heaters shall be equipped with an approved regulator in the supply line between the fuel cylinder and heater unit. Cylinder connectors shall be provided with an excess flow valve to minimize the flow of gas in the event the fuel line becomes ruptured.

6.4.14.10 Regulators and low-pressure relief devices shall be rigidly attached to the cylinder valves, cylinders, supporting standards, the building walls, or otherwise secured and shall be protected from the elements.

6.4.14.11 When heating with open flames, use the Hot Work Permit procedure and provide fire watch in accordance with HC Fire Prevention and Protection Policy.

6.4.15 Hand Torches
6.4.15.1 Hand torches (i.e weed burners) must never be used as a temporary heating device and must be attended by a competent person at all times when being operated.

6.4.15.2 Hand torches are to be used in well ventilated areas only and NEVER used in CONFINED SPACES.

6.4.15.3 When a hand torch is being shut down, turn off the cylinder valve first, and then the manual valve on the hand torch after the flame has gone out.

6.4.15.4 A hot work permit must be filled out prior to use and a minimum of a 10 lb. ABC fire extinguisher present within 20 feet.

7.0 Attachments

7.1 Heat Wagon Engineering Guide
The purpose of the Heat Wagon Engineering Guide is to provide information and instruction in the selection of temporary heat equipment and systems for construction sites, primarily in the early and middle stages of building.

There is no known text on this subject, although there are many on permanent heating systems. Some of the material from the Guide is drawn from such texts as well as from fuel gas codes, gas and propane association publications, and electrical engineering manuals.

This guide is intended for use by individuals who sell temporary heating systems and those who provide technical support.

While the purpose of the Heat Wagon Engineering Guide is to be helpful in the process of estimating temporary heating requirements, determining appropriate systems to use, fuel and electrical costs, and heater placement, Heat Wagon does not assume the ultimate responsibility for the overall effectiveness of individual projects. Actual jobsite conditions may require adjustments not anticipated in this general guide.

In all events, federal, state and local codes take precedence over recommendations in this guide.
BASICS OF TEMPOar Y HEATING

In construction, temporary heating is commonly used to allow construction activities to continue throughout the winter season. On-going construction, worker comfort and safety, protection of structural components, concrete curing, and other factors during cold weather can make temporary heating a significant contributor to the profitability of winter work.

Temporary heating is used because permanent heating systems are not yet installed or activated. Little attention has been paid to the necessities of temporary heating design even though there are many sources of information on permanent heat design.

Many factors are considered when a building's permanent system is designed. The first among these factors are design and layout of the building and its intended use. Insulating values of all structural components are taken into account. Structures that house people and equipment may require more heating and will be designed differently than buildings that serve the sole purpose of warehousing. System designs will account for outdoor design temperature and desired indoor temperatures, wind forces, land mass and other factors. It is assumed that openings, such as doors and windows, will be installed and closed when making these calculations.

From time to time, contractors or building owners will attempt to use permanent heating designs to determine temporary heat requirements. This is a poor way to calculate heat losses during the construction cycles. Designs for permanent systems do not adequately address heat loss issues such as infiltration of cold air in the early and middle stages of construction. Cold air infiltration is easily the greatest source of heat loss in a building under construction. Even a fully completed building, ready for occupation, suffers from infiltration of cold air.

Another great heat loss is through the roof or ceilings due to conduction and radiation.

Controlling these two main sources of heat loss, by proper system sizing and selection, will also address two other concerns for those contractors who are going to use temporary heat: the accumulation of moisture and the air quality within the building.

r ECir CuLATING vs. Pr ESSur IzATION

There are two basic methods of employing temporary heat. One method is called recirculation and the other is known as pressurization or air exchange.

Recirculation has been used for many years and is derived from the use of relatively small portable heaters sometimes known as torpedo or salamander heaters. The largest of these heaters in common use is 600,000 BTU, with air flow, in cubic feet per minute (CFM) up to 3,000. Historically, the majority of these types of heaters have been fueled by kerosene or fuel oil.

Recirculating, or portable heaters, are placed inside a building and are fired by fuel and air from within the building. While there have been improvements in the design of portable heaters and expanded fuel options, the operation remains the same, that is, burning or consuming of air (oxygen) contained inside the building.

There are problems associated with this method. The predominant problems are: depletion of oxygen during the burning process and accumulation of by-products of combustion back into the heated space which are then recycled through the heater. By-products include carbon monoxide, carbon dioxide, and water vapor which accumulate, while oxygen is depleted.
It is always recommended that outside air be introduced to the interior spaces to prevent the uncomfortable and sometimes dangerous accumulation of these by-products when using recirculating heaters.

In addition to these drawbacks, combustion inside the building with interior air creates a partial vacuum, encouraging infiltration of cold air. As said before, infiltration of cold air is a principal cause of heat loss. Heated air inside the building tends to be spotty and uneven under these conditions.

Recirculating heaters also obstruct work in progress while providing uneven heat distribution. Hoses and tanks are also obstructions.

The other method of employing temporary heat is referred to as the air exchange or the pressurization method. This method addresses all of the problems associated with the recirculation method.

The pressurization type heaters range widely in BTU capacity. They are usually fueled by natural gas, vapor propane, liquid propane, or fuel oil. They all share the characteristic of having high temperature rises, i.e., the difference between input air and output air, high air movement, expressed in cubic feet per minute (CFM), and high static pressure.

High temperature rise with high CFM and high static pressure permit these types of heaters to use air from outside the building to pressurize the building. The net affect of this pressurized air flow is to spread heated air evenly throughout a building.

Several important things begin to happen as this heated air spreads. The foremost is the reversal of infiltration of cooler air. Where cold air has been entering, it is forced back out of the building. The by-products of combustion, carbon monoxide and water vapor are expelled as well. Heated air tends to be more evenly spread throughout the building.

Naturally, efforts to tighten the building enclosure must be made in order to achieve maximum results from pressurization. It is the contractor's responsibility to continually tighten the enclosure.

Regardless of the method selected, pressurizing or recirculating, a consideration of the type of equipment used by either method is needed. The equipment should be portable and compact. Heaters should use readily available fuel and power. Operational safety and environmental safety are priorities. Heaters should be designed and engineered to meet high standards. It is to be expected that equipment has been tested and approved by independent laboratories for both manufacturing standards and safe operation. There must be rational calculations of estimated fuel expenses, electric costs, set up and maintenance costs, supervisinal costs, and so forth.

**BASIC EQUIPMENT TYPES**

There are four basic heater types used in temporary heating. They are direct fired, indirect fired, electric and hydronic.

Direct fired are economical and practical for most temporary heat applications, as long as they have been selected, placed, and applied correctly. Direct fired heaters function by drawing cooler air into the heater by means of a fan. The cool air then passes over exposed flame which increases the air temperature. As the heated air passes through the heater the discharge temperature is controlled by heater components. This type of heater is nominally 100% fuel efficient. If 100,000 BTU is introduced to the heater then 100,000 BTU is the approximate output. As mentioned earlier, a small amount of this combustion process produces by-products which are manageable and safe. This is true when used as pressurizing heaters.

Direct fired heaters can be divided into 2 different categories. The open flame, “torpedo” style is very common (see figure A). They may be controlled with an off/on or high/low remote thermostat. These units may be certified to be operated with ducting. However, the ducting needs to be temperature rated for the temperature rise of the heater. The cost of this type of heater is the least expensive of all temporary heating systems.

The second type of direct fired heater is the “make-up” air unit. The principle function of this unit is to introduce heated outside air into the structure and distribute the air in a controlled fashion to replace the air that is being exhausted. A popular design for the “make-up” air unit is the “draw-through” design (see figure B). The fan pulls the outside air across the burner, whereas, in the “torpedo” style, the outside air is pushed or “blown-through” across the burner. It should be noted that “blown-through” make-up air units are also manufactured for temporary heating.

In recent years, temporary heating quotation proposals have contained the statement: . . .No open flame salamander type heaters are permitted. . .Make-up air units have been used to comply with this requirement since these types of heaters are set-up outside the structure and the heated outlet air is ducted into the work space.
Listed below are the major characteristics/differences between “torpedo” and “make-up” air heaters. 

<table>
<thead>
<tr>
<th>Torpedo Style</th>
<th>Make-Up Air Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open, Exposed Flame</td>
<td>Yes</td>
</tr>
<tr>
<td>Temperature Rise</td>
<td>200 to 400°F</td>
</tr>
<tr>
<td>Fan Type</td>
<td>Axial fan (one speed)</td>
</tr>
<tr>
<td>Ducting</td>
<td>Possible</td>
</tr>
<tr>
<td>Temperature Control</td>
<td>Usually high/low or on/off thermostat</td>
</tr>
<tr>
<td>Products of Combustion</td>
<td>CO, CO2 and H2O</td>
</tr>
</tbody>
</table>

Indirect fired heaters operate differently. Cooler air is drawn into a contained burner chamber where the fuel is fired and the combustion process begins. The heater also draws cool air over a separate chamber called a heat exchanger. The two streams of air: combustion air and heat exchange air do not intermingle. Combustion air heats the heat exchanger air. Combustion by-products are discharged through a vent or flue along with the excess heat. The air heated by the heat exchanger is discharged into the structure to be heated. Therefore, in a vented heater, the usable temporary heat is free of any contamination or vapor produced in the combustion process. This heat is clean and it is dry.

Though still simple in operation and application, indirect fired heaters require more components, mostly in sheet metal parts. It is the nature of vented heaters to produce some waste heat. In the past, the best fuel efficiencies possible were in the 35% - 40% range. Today’s manufacturing and design capabilities make it possible to increase efficiencies to about 80%. In short, direct fired heat is nearly 100% fuel efficient while the best available indirect fired heaters are about 80% fuel efficient. As a result, operating costs with indirect fired heaters can be somewhat greater than operating costs with direct fired heaters in the pressurization mode with outside air. However, in the recirculation mode, fuel savings up to 50% can be realized with indirect heaters.

Indirect fired heaters are used in cases where air quality is of utmost importance, such as in hospitals or schools. These heaters are also used where drying is needed. Indirect fired heaters do not add moisture to the building whether used as pressurizing or recirculating units.

Temporary heat provides for a third type of heater. Electric heat is used in relatively small enclosures when clean, dry heat is required. The main drawback to electric heat is the small heat capacity relative to the cost to power them. Electric heat is considered to be six or eight times more costly to operate than gas or oil fired units.

A more recent development in temporary heating is known as hydronic heat. It is a hot water circulating system. This type of equipment owes its design to ground thawing equipment which heats a glycol mix and transfers heat through flexible hose to the ground. Hydronic heaters, do not heat the air directly, but instead heat a water glycol mixture which is then pumped through flexible hose to airover heat exchangers. These airover heat exchangers are placed inside a building to provide warm air. The main advantage of this type of system is not the warm air provided which is somewhat limited by its design, but rather the drying effect produced by separating the combustion process from the heat transfer process, as in indirect fired heaters.

All of the heaters described have their own purpose. The challenge is to determine the need, and to then balance cost, convenience, portability, and effectiveness in meeting...
the primary goal of temporarily heating buildings under construction. After all, temporary heating is meant to permit construction activities to continue during the winter season, safely and profitably.

**HEAT Transfer**
Heat is normally measured in British Thermal Units, or BTU. One BTU is the amount of heat required to raise the temperature of one pound of water, one degree Fahrenheit in a controlled setting.

For convenience, heaters are rated by BTU input, regardless of the type of fuel used. Indirect fired heaters are also rated by fuel efficiency.

Understanding how heat transfer occurs inside a building allows for the best selection of methods and heaters to use. After those decisions are made, it is necessary to decide on fuel choices, power options, heater placement, hose or piping needs, and heat distribution. How heated air performs inside a building is not a particularly difficult thing to understand. Air is heated, expands, and becomes lighter. Lighter air rises. Heated air tends to layer or stratify and it always wants to move from warm areas to colder areas. When a building is heated with warm air it is heated from the top down and from the warmer areas outward to the cooler areas of the building.

Understanding how heat moves makes it easier to take advantage of that movement. In heating higher ceilings or decks or heating higher floors, the heat is allowed to rise. If it is required that the heat move downward, fans or ductwork is used to direct the warm air to where it is wanted. Tiltable fans, used to force warm air from high ceilings back down to the normal work areas, can slash fuel costs 15-20%.

Heat moves from warm to cold. That means it is not necessary to surround a job with heaters. It is more important to place the heaters near the fuel source, available power, and within building openings such as doors and windows. With this placement, the heaters are used in the pressurization method. Long piping runs and heavy power cables are often an indicator that these principles are not being acknowledged.

**CONduction, CONvection, r ADIATION**
There are three forms of heat transfer: conduction, convection, and radiation. They can be defined as follows:

Conduction is the transfer of heat through a solid object (a spoon handle in a hot cup of coffee). Convection is the transfer of heat by movement of fluids or gases. A forced air heater is a convection heater.

Radiation is the transfer of heat from one object to another without warming the space in between (as the sun warms the earth).

The importance of understanding heat transfer is that in temporary heating, the most efficient heating is attained when all three types of heat transfer are put into play and heat sink is attained.

Heat sink is attained when the temperatures of the air, floor, and building framework or sidewalls are all approximately the same.

This is accomplished by pressurizing the building with forced air heaters (convection). The air temperature starts to warm the concrete slab and/or steel which warms itself (conduction) and then these warm objects throw heat back into the building (radiation). When this occurs, you have attained heat sink. At this point, a heater will drop to low fire automatically or shut off entirely until there is a temperature drop and the entire method repeats itself. A word of caution: in certain instances it is not unusual to take a number of days to attain heat sink. In some instances, higher fuel consumption for the first few days is to be expected.

The most effective and efficient way to heat a building is through pressurization. To pressurize a building is to force more air into the building than it can hold. When this happens, warm air is forced out the crevices, joints, open windows, and doors. When calculating heat loss, remember that the largest heat loss on any structure is infiltration.

If cold air coming into a building can be reversed, temporary heating costs can be reduced by as much as fifty percent.

**HEAT LOSS/GAIN**
Heat loss is based on the cubic feet of the building. Square feet is of no value in calculating heat loss. Cubic feet should be determined by close inspection of the blue prints, or taking actual measurements. Walking through and around the job to get a “feel” for how the heated air will move is invaluable.

Temperature rise is the difference between anticipated outdoor temperature and desired indoor temperature. See Charts 1-5, Page 12, in this guide for help in determining outdoor temperature. Frequently, a good source is the contractor with local knowledge. The contractor or building owner will also tell you what temperature is desired indoors. The difference is temperature rise. For example, if desired indoor temperature is 45º F and outdoor temperature is 20º F, the temperature rise is 25º F.

Now that cubic feet, outdoor temperature, indoor temperature, and temperature rise is known, heater sizing can begin.

Although there are complex programs to calculate heat loss, they heavily involve elements which have little to do with the estimates needed for temporary heat. For almost all temporary heat projects, the following formula is more than satisfactory.
1 BTU per cubic foot for every 10ºF temperature rise. For example, to achieve a 25ºF temperature rise, simply multiply cubic feet by 2.5.

<table>
<thead>
<tr>
<th>Simple example: 180,000 cubic foot single floor building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor temperature</td>
</tr>
<tr>
<td>Indoor temperature</td>
</tr>
<tr>
<td>Temperature Rise</td>
</tr>
<tr>
<td>180,000 x 2.5 = 450,000 BTU</td>
</tr>
</tbody>
</table>

Other factors may need to be taken into account, which may cause revisions, either up or down in the estimate. These factors are likely to change as construction continues. A quick reference graph to these factors is included in this guide. See Chart 6, Page 13.

For simple shell construction such as warehouses with little or no partitioning and limited to a single floor, an alternate formula will work almost equally well. That is: divide the cubic feet of the structure by 60 (60 minutes to the hour). This will show the cubic feet per minute (CFM) of air required to completely exchange the building air once per hour. This formula should be limited to single floor, open plan construction.

Example: 180,000 cubic ft
180,000 ÷ 60 = 3,000 CFM
Select a heater or heaters which will provide at least 3,000 CFM.

We have described two formulas for sizing heaters, both of which are used on single floor applications. Multiple floored buildings require additional calculations, but are still based on warm air rising and moving from warm areas to cool areas.

Because most movement of people, equipment and supplies occur on the first floor, it should be provided with additional heat.

For the second and third floor, provide for 50% of the BTU’s used on the ground floor. It is possible that no additional heat will be required on the 3rd floor. Use fans to move heat from stairwells into upper floors. The number of such fans depends on the number of stairwells available and are placed on the landings to pull heat from the stairwells onto the floor.

For buildings taller than 5 stories, determine if the builder intends to heat all floors at the same time. Commonly, they do not, in which case, calculate only the heat loss on contiguous floors.

Floor deck heating can be done simply by allowing heat to rise to the underside of the decking. Select heaters with high temperature rise whenever possible. Air movement is less important in this application. We want the warm air to rise to the underside of the decks and to remain there.

**Fuel Facts**

Fuel choices for direct fired and indirect fired heaters are natural gas, vapor propane, liquid propane and fuel oil.

Which fuel is used depends upon customer preference, availability, pressures and flows, and relative cost.

Each fuel has its advantages and disadvantages. Propane offers high pressure and flow. Natural gas offers wide variations in pressure but also offers uninterrupted availability. See Chart 7, Page 14.

At this point, we should mention that there are some applications which call for electric heat. Such applications are not usually considered temporary heat, for our purposes. Electric heaters are not commonly available with high BTU capability. Electric heat is produced by electrical resistance. The greater the resistance, the greater the BTU output. To generate a mere 205,000 BTU requires 3 phase 480 volt 70 amp service. Electric heat is, by far, the most costly way to heat enclosures. The advantage is that the warm air produced, though small, is both free of contaminants and provides dry air. Electric heat is for rooms rather than buildings.

Fuel costs for propane, natural gas, and fuel oil vary widely across the country and can change rapidly. Cost per unit of measure alone should not override other issues.

Propane is an often misunderstood fuel. There is a unique relationship between tank size, outside air temperature, and vaporization rate. Propane in a tank is a liquid. Although propane suppliers vary the ratio from time to time, a “full” tank is 85% liquid and 15% vapor.

When the tank is opened and vapor is used, the liquid propane in the tank “boils” into vapor. This boiling action is caused by the outside temperature on the liquid filled or wetted part of the tank.

As outside temperature drops, boiling slows down. Tank pressure drops and less vapor is produced. Nearly the same thing happens, as propane is consumed. As fuel is consumed, the liquid propane level drops and there is less wetted area of the tank to boil into vapor.

As temperature drops, pressure drops and the vaporization rate drops.
Chart 8, Page 15 demonstrates the rate of vaporization in various tank sizes, 250 gallons through 1,000 gallons, and manifolded at 0º F outside temperature and at 60% of liquid capacity. 60% is used to allow a comfortable margin in calculating tank requirements.

Chart 9, Page 15 demonstrates bulk tank pressures at outside temperatures from -40ºF to +40ºF.

HOSE AND PIPING

It is best practice to place heaters in building openings close to the fuel source and close to dependable electric power.

In order to choose the correct hose or piping for a heater three things must be known.

• Fuel Type - natural gas, vapor propane or liquid propane
• Fuel pressure at the source
• Distance to the heater

Chart 10, Page 16-17 illustrates flow rates for hose and piping at pressures from less than 1 pound per square inch (psi) through 20 psi for natural gas. The charts given do not give values for 3/4” hose; use 1” pipe as equivalent of 3/4” hose. An example of proper pipe sizing can be found on page 20.

Chart 11, Page 18 shows flow rates for liquid propane in gallons per hour, for hose and piping in diameters from 1/4” through 2”. To eliminate potential problems with liquid propane called slugging, use the smallest diameter hose or piping possible, see liquid propane Chart 12, Page 18. Refer to page 21 for proper bulk tank placement. Liquid propane may not be used inside a building under any circumstances. Place and use liquid propane heaters in building openings with all hose and piping outside the building.*

*Please refer to federal, state and local codes for appropriate use of hose and piping. Some codes permit no hose to be used.

HIGH Pr ESSur E r EGuLAToR s

Heater specifications include minimum and maximum inlet pressure requirement. Specifications may be in inches of water column (w.c.) or pounds per square inch (psi). 27.7 inches w.c. equals 1 psi.

When inlet gas pressure is greater than the maximum pressure called for in the specifications, a high pressure regulator is required. For example, if the specifications reads 14 inches w.c. maximum inlet pressure and gas pressure is 5 psi, a regulator must be added to the heater at the inlet.


ELECTr IC POWEr

All Heat Wagon heaters have recommended minimum cord size decals. Circumstances may arise where these recommendations are not suitable for a specific application. Refer to Chart 14, Page 19 for guidance. Whenever possible, place heaters as close as possible to the power source.

BY-Pr ODuCTS OF THE COMBuSTION Pr OCESS

Direct fired heater by-products of combustion are carbon dioxide, carbon monoxide, nitrous oxide, and water vapor. Of these, only carbon monoxide and water vapor are of major concern.

OSHA has established standards for carbon monoxide accumulation inside the building envelope. The standard can be found readily in the NIOSH Pocket Guide to Chemical Standards, Publication 97-140. The Pocket Guide is available at no charge from the US Government Printing Office at 866.512.1800.

The 2004 issue of the pocket guide shows the 8 hour time weighted average accumulations for carbon monoxide to be 50 ppm.

Please be aware that this standard applies not to heaters or other equipment, but rather the total accumulation of carbon monoxide in the building envelope over an 8 hour period. Heaters are probably not the cause for carbon monoxide accumulation, particularly when used in their proper mode, as pressurizing heaters. In many instances, other equipment on the job site may be producing far more carbon monoxide than the heaters. Troweling machines, generators, compressors and loaders are often found in the same work space.

It has been said by some temporary heating suppliers that carbon monoxide should be estimated on the basis of the functionality of the heater. This is incorrect. Actual measurements of carbon monoxide accumulation should be taken over time throughout the structure, at various times in a work day. There are devices on the market for that express purpose.
Water vapor, introduced by the combustion process with direct fired heaters, is reduced or eliminated by the pressurization method. Further, for dehumidifying, air movement greatly aids the process. If water vapor becomes an issue, simply add fans to encourage air movement.

**COMMON INSTALLATION AND OPERATIONAL PROBLEMS**

1. **Low Voltage** - This is one of the most common problems and is usually the result of the supply cord having too small a wire gauge for its length. Low voltage results in the motor overheating, burnt relay contacts or a relay that will not make contact.

2. **Gas Supply Line Too Small**

3. **Insufficient Vaporization At Supply** - Normally caused by improperly sized propane tank.

4. **Improper Gas Supply Pressure** - Usually a result of supply pressure being too high or too low because of improper or lack of regulation. Refer to the heater’s instruction plate for the maximum and minimum inlet pressure rating.

5. **Dirty Gas Supply** (Dirt in hose or supply pipe) - Dirty gas can cause strainers to plug or form a build up in the burner orifice.

6. **Lack Of Preventative Maintenance** - Heaters must be cleaned as required, especially when used in a dirty environment.

**ON SITE HAZARDS**

1. **Shorting Or Jumping Out Of Defective Components** - This is a very common problem which saves short term expense at the risk of large future costs. Any heaters found in this condition should be removed immediately.

2. **Improper Enclosure** - When heaters are installed partially to the outside for fresh air intake, strict adherence must be made to the minimum clearance to combustibles given on the instruction plate. Wood framing around a heater poses a potential hazard.

3. **Supplying Liquid Propane To A Vapor Heater** - This problem has occurred from time to time. To minimize the damage, shut off the gas supply and let the heaters run until all of the liquid in the lines has been burnt.

4. **Improper Or No First Stage Regulator** - Refer to the heater rating plate for the maximum and minimum inlet pressure rating.

**JOB SIZING**

Proper job sizing is result of finding out as much information about the construction project as possible. Key information that must be determined are:

1. Cubic feet of structure
2. Design temperature
3. Available fuel source
4. Available power source
5. Enclosure description

Page 22 of this guide will lead you through this process. Once this information is determined heating recommendations can be made.

**FUEL AND POWER CONSUMPTION**

Many factors (building tightness and actual weather conditions) can effect the fuel consumption on a heating project. Therefore, any cost calculation is just an estimate. Page 23 of this guide provides a worksheet for estimating project costs.

Follow up and communication with the contractor throughout the heating season are extremely important to a successful sale and repeat business. Keeping good records on every job will improve knowledge and future success.
### Direct Fired (Dual Fuel Series)

<table>
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<tr>
<th>Model#</th>
<th>BTU</th>
<th>Fuel Type</th>
<th>Thermostat</th>
<th>Temperature Rise</th>
<th>Power Supply 120V</th>
<th>Power Supply 208-240V</th>
<th>Power Supply 480V</th>
<th>CFM</th>
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### Direct Fired (Oil Series)

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### Make-Up Air Heaters (concealed flame)

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## Indirect Fired (Oil Series)

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<th>CFM</th>
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<td>VF700C</td>
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<td>120V 208-240V 1Ø 3Ø</td>
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*Oil is defined as; diesel, kerosene, #1-2 fuel oil.

**Electric Heaters Listed On Page 19**
The heat requirement calculator provides general guidelines and is based upon a temperature rise from 20° - 60°F. On-the-job-site experience is a factor in final estimates. A job log is helpful for comparison of the estimates and final requirements, and further facilitates similar structure estimates.

Heating requirements are governed by the type of temporary enclosure that exists. Less heat is required for a tight enclosure.

Additional heating capacity is necessary to reach the desired temperature of a frozen space. The amount of frost in a structure determines the additional heating capacity, which can be terminated when frost and water vapor are no longer factors.

**VERY TIGHT**
Structural enclosure - windows, doors, and elevators installed, walls exist (not dry-walled) -no partitioning*

**TIGHT**
Structural enclosure - windows, doors, and elevators installed, walls exist (not dry-walled) -medium partitioning*

**FAIRLY TIGHT**
Structural enclosure - tight roof and completed walls without insulation, window and door openings enclosed with canvas or plastic - medium to heavy partitioning*

**FAIRLY LOOSE**
Structural enclosure - tight roof and nearly completed walls; door, window and other openings covered with plastic or canvas - medium partitioning*

**LOOSE**
Structural enclosure - tight roof and nearly completed walls; door, window and other openings covered with plastic or canvas - heavy partitioning*

**VERY LOOSE**
Structural enclosure - tight roof, sheet plastic or canvas walls - space is clear of significant partitioning*

*When heat is supplied from the beginning of the heating season, or if a space is well heated, partitioning isn’t a vital factor.
### NATURAL GAS QUICK REFERENCE HOSE CHART

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Consult figure for applications outside these pressures and hose sizes.

### VAPOR PROPANE QUICK REFERENCE HOSE CHART

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Consult figure for applications outside these pressures and hose sizes.

---

**ENGINEERING GUIDE**

**CHAr T 7**

**CHAr T 7-1**
### VAPORIZATION RATES IN BTUH @ 0 DEG. F

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<tr>
<th>TANK SIZE</th>
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<th>PERCENTAGE OF TANK FILLED</th>
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<td>20%</td>
</tr>
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**NOTE:** USE FOLLOWING MULTIPLIERS FOR OTHER AIR TEMPERATURES

- For -10°F multiply x 0.50
- For +10°F multiply x 1.5
- For +20°F multiply x 2.0
- For +40°F multiply x 3.0
- For +50°F multiply x 3.5
- For +60°F multiply x 4.0

### CHAr T 9  TANK PRESSURES

<table>
<thead>
<tr>
<th>Temp. (F)</th>
<th>Approx. Pressure (PSIG)-Propane</th>
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### NATURAL GAS

#### CHAr T 10

Capacity of pipe at less than 1.0 - psig inlet pressure in cubic feet of gas per hour
(based on a pressure drop of 0.5 in. w.c. and 0.6 sp gr gas in schedule - 40 pipe)

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<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>400</th>
<th>500</th>
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<th>1500</th>
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<td>240</td>
<td>219</td>
<td>189</td>
<td>169</td>
<td>119</td>
<td>97</td>
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<td>588</td>
<td>480</td>
<td>416</td>
<td>372</td>
<td>339</td>
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<td>970</td>
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<td>685</td>
<td>594</td>
<td>531</td>
<td>375</td>
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<td>1123</td>
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#### CHAr T 10-1

Capacity of pipe at 1.0 - psig inlet pressure in cubic feet of gas per hour
(based on a pressure drop of 0.1 psig and 0.6 sp gr gas in schedule - 40 pipe)

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<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>1000</th>
<th>1500</th>
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<td>130</td>
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<td>890</td>
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<td>630</td>
<td>540</td>
<td>490</td>
<td>350</td>
<td>280</td>
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<td>1160</td>
<td>960</td>
<td>830</td>
<td>740</td>
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<td>1040</td>
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#### CHAr T 10-2

Capacity of pipe at 2.0 - psig inlet pressure in cubic feet of gas per hour
(based on a pressure drop of 0.2 psig and 0.6 sp gr gas in schedule - 40 pipe)

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<th>200</th>
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<th>400</th>
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<th>1000</th>
<th>1500</th>
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<td>1590</td>
<td>1300</td>
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<td>910</td>
<td>790</td>
<td>710</td>
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<td>2410</td>
<td>1970</td>
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<td>1200</td>
<td>1070</td>
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### CHAR T 10-3
Capacity of pipe at 5.0 - psig inlet pressure in cubic feet of gas per hour
(based on a pressure drop of 0.5 psig and 0.6 sp gr gas in schedule - 40 pipe)

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### CHAR T 10-4
Capacity of pipe at 10.0 - psig inlet pressure in cubic feet of gas per hour
(based on a pressure drop of 1.0 psig and 0.6 sp gr gas in schedule - 40 pipe)

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### CHAR T 10-5
Capacity of pipe at 20.0 - psig inlet pressure in cubic feet of gas per hour
(based on a pressure drop of 2.0 psig and 0.6 sp gr gas in schedule - 40 pipe)

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### CHAr T 11

**HOSE & PIPE SIZING - LIQUID PROPANE**

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**To Use Chart:**
1. Having determined the required flow at point of use, locate this flow in the left hand column. If this falls between two figures, use the larger of the two.
2. Determine total length of piping required from source to point of use. Locate length in the center of this chart.
3. Read across chart from left (required flow) to right to find the total length which is equal to or exceeds the distance from the source to use.
4. From this point read up to find the correct size of pipe required.

### CHAr T 12

**PIPE & TUBING SIZING - HIGH PRESSURE PROPANE**

**SIZING BETWEEN FIRST AND SECOND STAGE REGULATOR**

Maximum propane capacities listed are based on 2 psig pressure drop at 10 psig setting - Capacities in 1,000 Btu/Hr

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<th>PIPE OR TUBING LENGTH FEET</th>
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To convert to capacities at 5 psig settings - Multiply by 0.879
To convert to capacities at 15 psig settings - Multiply by 1.130
To convert to capacities at 20 psig settings - Multiply by 1.185
To convert to capacities at 30 psig settings - Multiply by 1.345
To convert to capacities at 40 psig settings - Multiply by 1.488
To convert to capacities at 50 psig settings - Multiply by 1.618
SECOND STAGE SERVICE REGULATOR (11SV08, 40SV06) FLOW RATE IN CFH

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NOTE: USE 1050 BTU PER CFH FOR NATURAL GAS
USE 2476 BTU PER CFH FOR PROPANE

11SV08 REGULATOR COMES STANDARD WITH 1/2" ORIFICE
40SV06 REGULATOR COMES STANDARD WITH 1/4" ORIFICE
TOTAL GAS LOAD
When determining hose and piping requirements, add all heaters flow requirements on a system for total gas load. In the following Figure use the total gas load, at the available pressure at the source, to determine hose or pipe size.

Building: 250’ x 100’ x 20’
required: 48 Deg. Temperature rise
required: 2,400,000 BTU

BuLk TANK PLACEMENT
When using propane as a fuel and particularly as a liquid, the tanks should be positioned as shown. This should reduce oil’s in propane entering the heater and pouring components. An additional safeguard called a drip leg can be made to place in the heater pipe train.
### CHAr T 15

**NATURAL GAS CONSUMPTION**

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NOTE: 100,000 BTU PER THERM
NOTE: 1 THERM = 100 CUBIC FT

### CHAr T 16

**PROPANE FUEL CONSUMPTION**

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NOTE: PROPANE 91,960 BTU PER GALLON
NOTE: KW = 3411 BTU
NOTE: 1.1 GAL PER HOUR PER 100,000 BTU
NOTE: LBS. PER GALLON - 4.24
NOTE: BTU PER LB. - 21,591
TEMPOr Ar Y HEATING ESTIMATING WOr K SHEET
SINGLE FLOOR APPLICATION

Cubic Feet ----------- Enclosure (page 13) -----------
Outdoor Temp ----------- °F BTU/Cubic Foot -----------
Indoor Temp ----------- °F Cubic Feet x BTU/Cubic Ft. ----------- BTU
Temperature Rise ----------- °F Cubic Feet ÷ 60= ----------- CFM

Fuel:
Nat Gas ----------- w.c. or psi Pressure @ Source

Inches wc/psi
Propane ----------- Pressure @ Source

Fuel Oil ----------- Grade Power Cable -----------

Distance Heat From Source: ---------------------------------

Electric Power: Phase ----------- Volt -----------

Distance Power To Heater: ---------------------------------

**Recommended Specs**

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**FuEL CONSuMPTION**

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<td>(CFH x 100,000 = THERM)</td>
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<td>Fuel Cost per GPM/THERM</td>
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<td>Rental Period (in days)</td>
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<td>Maximum fuel use per day</td>
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<tr>
<td>in GPM or THERMS (page 21)</td>
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<tr>
<td>Max. fuel use per rental period</td>
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<tr>
<td>Estimated Fuel Cost</td>
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*Note: Most contractors experience less than 60% of maximum fuel consumption*

**POWeR CONSuMPTION**

| *KWH/Day (page 24)            |   |
| KWH in rental period          |   |
| Cost per KWH                  |   |
| Estimated Power Cost          |   |

Recommend hose or pipe diameter  
Recommend power cable size  
Recommend bulk tank for vapor propane  
Recommend bulk tank for liquid propane  

*Assuming 24 hour/day operation*

**SuMMArY OF COSTS**

| Heater purchase or rental     |   |
| Accessory purchase or rental  |   |
| Estimated fuel cost           |   |
| Estimated power cost          |   |

**TOTAL**

Page 22
MINIMUM SUPPLY VOLTAGES

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Wire Size Resistance Chart

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<thead>
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<th>#6</th>
<th>0.000403 Resistance per Foot</th>
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<tr>
<td>#8</td>
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<td>#10</td>
<td>0.00102 Resistance per Foot</td>
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<td>#12</td>
<td>0.00162 Resistance per Foot</td>
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<tr>
<td>#14</td>
<td>0.00258 Resistance per Foot</td>
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<tr>
<td>#16</td>
<td>0.00409 Resistance per Foot</td>
</tr>
<tr>
<td>#18</td>
<td>0.00651 Resistance per Foot</td>
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</table>

* These voltages are a minimum. Cold weather can also reduce the amount of voltage. If you are close to these minimums you need to increase wire size or shorten length of cord. Be aware of what power is at source.

To determine voltage drop, the formula is:

amps x resistance = voltage drop

Example: 2730C 1 phase 30 amp
Minimum Voltage Required = 208V
150 ft x 18 gauge wire (.00651) = .9765
30 amps x .9765 = 29.29 voltage drop
220v at source - 29.29 = 190.71 volts
Conclusion: Heater will not run, wire too small or cord too long

Options to correct the situation

1. Increase gauge of wire
   Try 14 gauge wire
   150 ft x 14 gauge wire(.00258) = .3870
   30 amps x .3870 = 11.61 voltage drop
   220v - 11.61 = 208.39 volts
   Conclusion: Heater will run, although still might be a problem because of cold weather conditions

2. Reduce cord length
   Try 50 feet
   50 ft x 18 gauge wire(.00651) = .3255
   30 amps x .3255 = 9.765 voltage drop
   220v - 9.765 = 210.24 volts
   Conclusion: Heater will run
1.0 Purpose

1.1 This program establishes minimum safety requirements for performing concrete and masonry work.

2.0 Scope

2.1 This program covers all concrete and masonry installation on all Haselden projects and related work.

3.0 Definitions

3.1 Bull Float: Large trowel mounted on a pole, used to finish concrete from areas outside the pour.

3.2 Flying Forms: Sections of Formwork assembled to make larger panels that are then lifted into place.

3.3 Formwork: The total system of support for freshly placed or partially cured concrete, including the mold or sheeting (form) that is in contact with the concrete as well as all supporting members including shores, re-shores, braces, and related hardware.

3.4 Jack: Device used for tensioning tendons during post-tensioning operations.

3.5 Limited-Access Zone: A restricted zone running along a masonry wall that is under construction. Also, a restricted zone established for falling object protection for any work activity.

3.6 Precast Concrete: Concrete members such as walls, panels, slabs, columns, and beams, that have been formed, cast, and cured prior to final placement in a structure.

3.7 Qualified Person: An employee who, by possession of a recognized degree, certificate, or professional standing, or who by extensive training and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter.

3.8 Shore: A supporting member that resists a compressive force imposed by a load.

4.0 Reference Documents

4.1 29 CFR 1926 Subpart Q Concrete and Masonry Construction
4.2 29 CFR 1926.250 – General Requirements for Storage

4.3 OSHA Interpretations - 10/30/2003 - Revised Response/Storage of Materials on a Scaffold for More Than One Shift's Work

4.4 Haselden Personal Protective Equipment

4.5 Haselden Impalement Protection

4.6 Haselden Respiratory Protection Program

4.7 Haselden Respirable Silica Hazard Control Policy

5.0 Responsibilities

5.1 Director of Safety and Health or Designee:

5.1.1 To assign responsibilities for implementation of this policy.

5.1.2 To verify compliance with this policy on a periodic basis

5.1.3 To update this program as regulatory bodies or company needs arise.

5.2 Site Superintendent(s):

5.2.1 To assure that all site employees are trained in accordance with Haselden Construction training requirements.

5.2.2 To assure that all equipment is available as necessary.

5.2.3 To periodically review the implementation of this program.

5.2.4 To enforce disciplinary action for violations of this program.

6.0 Implementation

6.1 Tools and Equipment

6.1.1 Bull Floats:

6.1.1.1 Inspect the area to ensure there is no energized electrical equipment nearby that handles could touch.

6.1.1.2 In areas where the potential exists for the float to contact energized electrical conductors, the conductors must be de-energized, grounded, and locked out, or insulated.

6.1.2 Masonry saws must be equipped with upper blade guards and integrated water delivery systems or engineered HEPA dust collection systems.

6.1.3 Powered Concrete Buggies:
6.1.3.1 May only be operated by trained and qualified personnel.

6.1.3.2 Buggies will only be driven to and from drop areas with the operator facing the direction of travel to avoid potential accidents.

6.1.3.3 Handles of concrete buggies will not extend beyond the wheels on either side of the buggy.

6.1.3.4 Knuckle guards will be installed on buggy handles.

6.1.4 Powered, Rotation-Type Concrete Trowels

6.1.4.1 Trowels that are manually guided will be equipped with a control switch that automatically shuts off the power when the operator removes his hands from the handles.

6.1.4.2 The rotating blades will be guarded at the top and outer perimeter.

6.1.4.3 Adequate ventilation shall be provided if necessary to prevent a hazardous atmosphere from developing.

6.1.5 Concrete Buckets Requirements:

6.1.5.1 Personnel will not ride concrete buckets and buckets will not be lifted over personnel.

6.1.5.2 Buckets will be equipped with a discharge device that personnel can operate without being exposed to the load.

6.1.5.3 Buckets will have a positive latch that prevents accidental dumping.

   6.1.5.3.1 Latch will be self-closing.

   6.1.5.3.2 The latch and bail will be cleaned periodically and maintained in good operating condition.

6.1.5.4 A non-conductive tag line will be used to control the bucket as it is being positioned. Any tag line attached to the bail must not extend more than three feet below the base of the bucket and shall not be knotted. Employees will take the necessary steps to ensure the tag lines do not get caught onto adjacent structures or objects.

6.1.5.5 Aggregate and loose material will not be permitted to accumulate on the top and sides of the bucket.

6.1.5.6 Concrete buckets are to be inspected prior to each day’s use for damage to the bucket and its components including the lifting apparatus, slings, hooks, cables, etc. If any one of the components is found to be damaged or defective, the bucket is
to be removed from service and tagged as out of service until it is repaired.

6.1.6 Ready Mix Concrete Trucks:

6.1.6.1 If the truck is on a slope or incline while discharging, the wheels will be blocked and the brakes set; if the potential exists for the vehicle to roll into an excavation, the brakes will be set AND “stop logs” will be used.

6.1.6.2 The truck must be kept far enough away from the edge of an excavation to prevent a superimposed load on the excavation. The excavation competent person must evaluate the loading and establish the safe distance.

6.1.6.3 A spotter will be used to assist the driver when backing trucks.

6.1.6.4 Concrete trucks will be allowed to wash their chutes in the designated concrete washout areas. Surplus concrete wash water and drum wash water will be disposed of at an approved off-site landfill and will not be allowed to be discharged at the site.

6.1.7 Concrete Pumps:

6.1.7.1 Will be set up level and used on compacted soil.

6.1.7.2 Will be set up with outriggers fully extended and supported by adequate base-plates set on sills, mats or minimum 4x4 cribbing. Base plate supports shall be set on a level surface.

6.1.7.2.1 Never use cribbing to bridge a hole or void.

6.1.7.2.2 If the outriggers cannot be stabilized, do not unfold the boom. Move the pump to a location where it can be stabilized.

6.1.7.3 Provisions shall be made to contain accidental fuel and fluid leaks from equipment. A spill kit, drip pan, or other suitable means of spill control shall be provided. Leaking hydraulics can result in a mechanical failure that could cause injury and property damage and should be repaired immediately.

6.1.7.4 Wash out only at the designated wash out area.

6.1.8 Concrete Waste:

6.1.8.1 A specific area approved by Haselden onsite management team will be designated as the concrete washout area.

6.1.8.2 Concrete waste shall be cleaned up promptly after placing and finishing operations and deposited in Eco-pans, disposal bins or approved concrete washout areas. Washout areas must be shown on the Stormwater Management Plan.
6.1.8.3 Concrete waste shall not be allowed to migrate from the site, enter drainage systems, or be discharged into surface waters.

6.1.9 Masonry Mixing and Cutting Areas:

6.1.9.1 Grade, berm and line masonry mixing and cutting areas with impervious sheet material to prevent waste water from migrating from the site, entering drainage systems, or being discharged into surface waters.

6.1.9.2 If mixing, silo charging operations, or other work activities generate respirable dust or respirable silica levels that exceed occupational exposure limits (OELs), engineering controls must be used. Refer to the Haselden Respiratory Protection Program.

6.2 Personal Protective Equipment (PPE) And Personal Hygiene

6.2.1 To minimize or eliminate potential exposure to skin irritants, excessive noise, in addition to hard hats, safety glasses, boots, and Type II traffic vests, the following PPE will be worn:

6.2.1.1.1 Face shield in addition to safety glasses will be worn by employees that may be exposed to splattering whenever concrete is being pneumatically placed, pumped or deposited, or when masonry is being cut with wet-saws.

6.2.1.1.2 Hearing protection will be worn during saw cutting.

6.2.1.1.3 Cement finishers will wear kneepads when hand finishing concrete.

6.2.1.1.4 Rubber boots will be worn when workers are required to stand in wet concrete.

6.2.1.1.5 Protective clothing will be worn when employees are exposed to wet concrete that may saturate clothing and cause alkali burns.

6.2.2 If respirable silica in the employee’s breathing zone exceeds the OSHA PEL, respiratory protection will be required. Refer to the Haselden Respiratory Silica Hazard Control Plan and the Haselden Respiratory Protection Program.

NOTE: If OSHA Table 1 Respirable Silica Hazard Controls are not followed, the contractor creating the hazard is responsible for conducting exposure monitoring to ensure that the PEL for respirable silica is not exceeded. The creating employer is responsible for isolating the work area to keep employees not engaged in the task and the public out of the area where respiratory protection is required.
6.2.3 Emergency eyewash bottles are to be placed near the concrete pour. A 15 minute, typically 5-7-gallon eyewash station will be located on site. In the event that concrete splatter or concrete dust enters the eye of an employee, the emergency eyewash bottles shall be used to immediately flush the eye, the employee shall be taken to the eyewash station to rinse for several minutes.

6.2.4 Washing facilities consisting of water, soap and hand towels will be provided for personnel working with cement, wet concrete, mortar, cementitious products and similar materials.

6.3 Installation and Use of Formwork and Shores

6.3.1 Layout drawings showing jack layout, formwork, shores, falsework, framing, working decks, re-shores and scaffolding will be provided by the contractor performing the work and will be available at the job site. Manufacturer’s safe working loads and procedures shall be followed.

6.3.2 Whenever single post shores are used in more than one tier, the layout will be designed by a qualified designer and inspected by an engineer qualified in structural design before concrete is placed.

6.3.3 Employees working on concrete or masonry operations six feet or more above the adjacent walking/working surface shall be protected from falls at all times. Refer to the Haselden Fall Protection Policy.

6.3.4 A Qualified Person will inspect all shores and formwork material prior to erection to determine that the material identified in the formwork or shoring plan is being used and is in good condition.

6.3.4.1 Damaged or defective material will not be used.

6.3.4.2 Couplers will not be deformed, broken or have defective or missing threads or bolts.

6.3.4.3 Adjusting devices will not be used if heavily rusted, bent, dented, re-welded, or have broken welds.

6.3.4.4 Timbers will not be split, damage, or rotten.

6.3.4.5 Damage or otherwise defective material will be tagged “defective” and removed from site.

6.3.5 Formwork will be designed, erected, supported, braced and maintained so that it will safely support all vertical and lateral loads that may be imposed during concrete placement.

6.3.5.1 When using flying forms, lifting points and hardware will be included in the design.

6.3.5.2 Safe access to the formwork must be provided.

6.3.5.3 When scaffolding or walkways are incorporated into the design of the formwork, the formwork will be evaluated to ensure that it
can handle all anticipated horizontal forces, including personnel, equipment, stored materials, reinforcing steel, weight of scaffolds and walkways, horizontal weight of concrete, and wind.

6.3.5.4 Should the need arise to temporarily store reinforcing steel, material or equipment on top of formwork, the areas will be reinforced or shored to support the intended load.

6.3.5.5 The competent person for the installing contractor will ensure that materials staged in work area plus construction live loads and dead loads do not exceed the capacity of the system.

6.3.5.6 Employees are prohibited from walking or standing on concrete forms or walers when forming, placing or finishing. Adequate work platforms or scaffolding shall be provided.

6.3.6 On “tube and coupler” shores, couplers (clamps) will be drop-forged steel, malleable iron, or structural grade aluminum.

**NOTE:** Gray-cast-iron couplers will **NOT** be used.

6.3.7 Erected formwork and shores will be inspected by a Qualified Person immediately prior to and immediately after the placement of concrete. Equipment that is found to be damaged will be immediately replaced or supplemented.

6.3.8 Experienced personnel will be assigned as “form watchers” during concrete placement to detect possible displacement or failure. A supply of extra braces that may be needed in an emergency will be readily available.

6.3.9 Sills for shores will be sound, rigid, and capable of carrying the maximum intended load. All base plates, shore heads, extension devices, or adjustment screws will be in firm contact with the mud sill and the form.

6.3.10 Personnel will **NOT** be allowed under horizontal formwork during placement of concrete.

6.3.10.1 Employees **NOT** involved in the pour will stay clear of the area.

6.4 Removal of Formwork and Shores

6.4.1 Formwork and shores will not be removed until it is determined that the concrete has gained sufficient strength to support its weight and any superimposed loads from materials or construction equipment that will be stored on it. The determination will be based on:

6.4.1.1 Plans and specifications that stipulate conditions for removal of formwork and shores, and such conditions are followed; or

6.4.1.2 The concrete has been tested with an appropriate ASTM standard test method, and the test results indicate the concrete
has gained sufficient strength to support its weight and superimposed loads.

6.4.2 Re-shoring will be provided when necessary to safely support slabs and beam soffits after stripping, or where such members are subject to superimposed loads. Re-shoring will not be removed until the concrete has gained adequate strength to support its weight and all loads placed on it.

6.4.3 The installer must clearly mark with red danger tape (Danger Do Not Enter) the concrete formwork stripping area. The name, date, company and phone number of the competent person will be displayed. Do not permit unauthorized access to the stripping operations areas.

6.4.4 Employees shall be protected against falling objects when engaged in stripping operations.

6.4.5 Formwork and shores will be removed from all areas in which personnel are required to work or pass, and stockpiled in a storage area promptly after stripping.

6.4.6 Protruding nails, wire ties, and other formwork accessories not necessary for subsequent work will be pulled, cut, or removed to eliminate hazards.

6.5 Reinforcing Steel

Employees working with reinforcing steel six feet or more above the adjacent walking/working surface shall be protected from falls at all times. Refer to the Haselden Fall Protection Policy.

6.5.1 Personnel shall be protected from impalement by exposed ends of reinforcing steel and form stakes.

6.5.1.1 Mushroom caps are not permitted for impalement protection.

6.5.1.2 Troughs or caps made from wood shall be designed and built to prevent the impalement of a falling employee.

6.5.2 Uncoiled wire mesh rolls will be secured at each end to prevent recoiling.

6.5.3 Reinforcing steel for walls, piers, columns, and similar vertical formwork structures will be guyed and supported to prevent collapse and to guard against wind pressure.

6.5.4 Walkways or runways shall be provided when employees are exposed to the hazard of injury due to falling through rebar in mat foundations or grade beams.

6.6 Masonry Construction
6.6.1 A limited-access zone will be established for falling object protection whenever a masonry wall is being constructed. The limited-access zone will:

6.6.1.1 Be equal to the height of the wall to be constructed plus 4 feet and shall run the entire length of the wall;

6.6.1.2 Be on the un-scaffolded side of the wall;

6.6.1.3 Be restricted to those personnel actively engaged in constructing the wall;

6.6.1.4 Remain in place until the wall is adequately supported to prevent overturning or collapse.

6.6.2 Masonry walls exceeding 8 feet will be braced to prevent overturning or collapse; bracing will remain in place until permanent support elements of the structure are in place.

6.6.3 Mason Scaffolds

6.6.3.1 When working from cantilevers, a handrail, mid-rail and toe-board will be installed at the ends of a continuous run of scaffold to keep masons from falling.

6.6.3.2 No employee shall be exposed to heights of 4 feet or greater on SCAFFOLDS, without 100% fall protection.

6.6.3.3 Fall protection is required for overhand brick laying. One acceptable means is a 32-inch tall masonry wall that has reached sufficient strength to meet the requirements of a standard guardrail.

6.6.4 Stockpile masonry materials on solid, even grade, out of the way of high-activity areas.

6.6.5 The competent person shall ensure that scaffold is not loaded with material, equipment or employees in excess of its rated capacity.

6.6.6 Deflection of wood planks in excess of 1/120 of the span is prohibited.

6.6.7 Use caution when removing metal bands from brick and block stacks; only strap or side cutters will be used to cut metal bands.

6.6.8 Good order, arrangement, and housekeeping will be maintained by masonry subcontractors. This includes, but is not limited to:

6.6.8.1 Disposing of metal bands immediately after cutting.

6.6.8.2 Gathering up broken masonry pieces, waste mortar, mortar spills, scrap paper and other trash at least once per day (more often if needed) and placing in a proper disposal container.

6.6.8.3 Immediately removing projecting nails from boards.
6.8.4 Stacking materials for reuse so that they are out of the way of personnel and promptly disposing of defective or unusable materials.

6.7 Post Tension Cable Installation/Operations

6.7.1 Personnel will not be permitted behind the jack during post-tensioning operations.

6.7.2 Signs and barriers will be erected to limit access to the post-tensioning area.

6.7.3 Employees will not stand on slabs or beams above where cables are being stressed.

6.7.4 Manufacturer’s recommendations will be followed when using post-tensioning equipment.

6.8 Precast Concrete

6.8.1 Precast wall units, structural framing, and tilt-up wall panels will be adequately supported to prevent overturning or collapse until permanent connections are completed.

6.8.2 Lifting inserts which are embedded or otherwise attached to tilt-up precast concrete members shall be capable of supporting at least two times the maximum intended load applied or transmitted to them.

6.8.3 Lifting inserts which are embedded or otherwise attached to precast concrete members, other than the tilt-up members, shall be capable of supporting at least four times the maximum intended load applied or transmitted to them.

**NOTE:** Reinforcing steel is **NOT** permitted as a lifting inserts unless it is engineered to support the load.

6.8.4 Lifting hardware will be capable of supporting at least 5 times the maximum intended load applied to the lifting hardware.

6.8.5 Personnel will not be permitted under precast concrete members being lifted or tilted into position. This includes any part of the employee’s body.

7.0 Attachments:

7.1 Concrete Deck Safety Inspection
Concrete Deck Safety Checklist

**Project Name:**
**Project #:**
**Date:**
**Location of Placement:**

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<th>Notes</th>
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<td>1. Has a JHA been filled out and reviewed by the crew performing the work?</td>
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<tr>
<td>2. Are all guardrails installed per OSHA specifications?</td>
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<td>3. Will PFAS be required?</td>
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<td>4. Have horizontal lifelines, if used, been designed by a qualified person?</td>
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<td>5. Is there an eyewash station within 100 ft.?</td>
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<tr>
<td>6. Is there a hand washing facility with soap, water and towels?</td>
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<tr>
<td>7. Do we have proper access? Are minimum of two ladders or one stair provided?</td>
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<td>8. Do we have proper egress? Can employees exit without tracking on wet concrete?</td>
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<tr>
<td>9. Is a limited access zone in place for falling object protection?</td>
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<tr>
<td>10. Is the ground stable for pump? Leveled for outriggers?</td>
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<td>11. Do all employees have proper PPE? (Long sleeves, Proper Footwear, Gloves)</td>
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<tr>
<td>12. Is the deck properly shored to specs?</td>
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<tr>
<td>13. Is the shoring in adequate condition for the load above?</td>
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<tr>
<td>14. Is this a prestressed deck?</td>
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**Safety Coordinator / Foreman**
**Date**

**Superintendent**
**Date**

Concrete Placement Safety - Post-Placement

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<td>2. Is access below the deck restricted until the concrete has reached 75%?</td>
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<tr>
<td>3. Is shoring being reinstalled after stripping?</td>
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<tr>
<td>4. Is the guardrail installed per OSHA specifications after stripping?</td>
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<td>5. Is this a post tensioned deck?</td>
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<tr>
<td>- Has a JHA been filled out and reviewed for this work?</td>
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</table>

**Foreman**
**Date**

**Superintendent**
**Date**
Haselden Construction Safety Program

Subject: Crane Program

Approved By: Safety Department

Date: 12/27/2018

1.0 Purpose

1.1 This document describes the Operation, Certification and Training Requirements for Crane operations as it relates to Haselden Construction projects.

2.0 Scope

2.1 This document applies to all Haselden Construction employees and subcontractors. This program applies to power-operated equipment, when used in construction, which can hoist, lower and horizontally move a suspended load. Such equipment includes, but is not limited to: Articulating cranes (such as knuckle-boom cranes); crawler cranes; floating cranes; cranes on barges; locomotive cranes; mobile cranes (such as wheel-mounted, rough-terrain, all-terrain, commercial truck-mounted, and boom truck cranes); multi-purpose machines when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load; industrial cranes (such as carry-deck cranes); dedicated pile drivers; service/mechanic trucks with a hoisting device; a crane on a monorail; tower cranes (such as a fixed jib, i.e., "hammerhead boom"), luffing boom and self-erecting); pedestal cranes; portal cranes; overhead and gantry cranes; straddle cranes; side boom cranes; derricks; and variations of such equipment.

2.2 Exclusions. The program does not cover:

2.2.1 Machinery included in paragraph 2.1 of this Program where it has been converted or adapted for a non-hoisting or lifting use. Such conversions or adaptations include power shovels, excavators and concrete pumps.

2.2.2 Power shovels, excavators, wheel loaders, backhoes, loader backhoes, track loaders. This machinery is also excluded when used with chains, slings or other rigging to lift suspended loads.

2.2.3 Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles.

2.2.4 Digger derricks when used to auger holes for poles carrying electric or telecommunication lines, placing and removing the poles, and for handling associated materials, and any other work covered by 29 CFR 1926 Subpart V.

2.2.5 Machinery originally designed as vehicle-mounted aerial devices (for lifting personnel) and self-propelled elevating work platforms.

2.2.6 Telescoping/hydraulic gantry systems.
2.2.7 Stacker cranes.

2.2.8 Powered industrial trucks (forklifts), except when equipped to hoist and lower a load by means of a winch or hook.

2.2.9 Articulating/knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.

2.2.10 Mechanic's truck with a hoisting device when used in activities related to equipment maintenance and repair.

2.2.11 Machinery that hoists by using a come-a-long or chain fall.

2.2.12 Dedicated drilling rigs.

2.2.13 Gin poles when used for the erection of communication towers.

2.2.14 Tree trimming and tree removal work.

2.2.15 Anchor handling or dredge-related operations with a vessel or barge using an affixed A-frame.

2.2.16 Roustabouts.

2.2.17 Helicopter cranes.

2.2.18 Cranes designed for use on railroad tracks, when used on railroad tracks must comply with applicable Federal Railroad Administration requirements.

3.0 Definitions

3.1 **Angle Indicator [boom]**: An accessory which measures the angle of the boom to the horizontal.

3.2 **Assembly/Disassembly**: The assembly and/or disassembly of equipment covered under this standard. With regard to tower cranes, "erecting and climbing" replaces the term "assembly," and "dismantling" replaces the term "disassembly." The process of increasing the height of the tower crane is an erection process.

3.3 **Assist Crane**: A crane used to assist in assembling or disassembling a crane.

3.4 **Attachment**: Any device that expands the range of tasks that can be done by the equipment. Examples include: Auger, drill, magnet, pile-driver, and boom-attached personnel platform.

3.5 **Blocking**: (also referred to as "cribbing") is wood or other material used to support equipment or a component and distribute loads to the ground. It is typically used to support lattice boom sections during assembly/disassembly and under outrigger and stabilizer floats.
3.6 **Boom Angle:** The angle between the longitudinal centerline of the boom and the horizontal. The boom longitudinal centerline is a straight line between the boom foot pin (heel pin) centerline and boom point sheave pin centerline.

3.7 **Boom [crane]:** A member hinged to the front of the rotating superstructure with the outer end supported by ropes leading to a gantry or A-frame and used for supporting the hoisting tackle.

3.8 **Boom Hoist:** A hoist drum and rope reeving system used to raise and lower the boom.

3.9 **Cab-Operated Crane:** A crane controlled by an operator in a cab located on the bridge or trolley.

3.10 **Clearance:** The distance from any part of the crane or load to a point of the nearest obstruction.

3.11 **Competent Person:** An employee who by either extensive experience or training has the ability to recognize hazards associated with lifting equipment and has the authority to take immediate corrective action. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.12 **Controlling Entity:** An employer that is a prime contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project--its planning, quality and completion.

3.13 **Counterweight:** A weight used to supplement the weight of the machine in providing stability for lifting working loads.

3.14 **Crane:** A machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism an integral part of the machine. Cranes whether fixed or mobile are driven manually or by power.

3.15 **Crane Operator:** A competent employee in control of the crane, who meets the physical, qualification, certification and training requirements.

3.16 **Crawler Crane:** A rotating superstructure with power plant, operating machinery, and boom, mounted on a base, equipped with crawler treads for travel. Its function is to hoist and swing loads at various radii.

3.17 **Critical Lift:** A lift that meets any of the requirements of Paragraph 6.10 and 6.11 of this Program, see below.

3.18 **Derrick:** An apparatus consisting of a mast or equivalent member held at the head by guys or braces, with or without a boom, for use with a hoisting mechanism and operating ropes.

3.19 **Designated:** Selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

3.20 **Fall Zone:** The area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.
3.21 **Free Fall (of the load line):** A situation when only the brake is used to regulate the descent of the load line (the power hoist mechanism is not used to drive the load down faster or retard its lowering).

3.22 **Guy:** A rope used to steady or secure the mast or other member in the desired position.

3.23 **Hoist:** An apparatus which may be a part of a crane, exerting a force for lifting or lowering.

3.24 **Hydraulic Crane:** Any hydraulically driven hoisting device or structure that incorporates a power-driven drum and cable or rope used for raising, lowering or moving material, is equipped with a telescoping boom capable of moving in the vertical plane, is mounted on a base or chassis, either crawler or wheel mounted, to provide mobility.

3.25 **Insulating Link/Device:** An insulating device listed, labeled, or approved by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.

3.26 **Jib:** An extension attached to the boom point to provide added boom length for lifting specified loads. The jib may be in line with the boom or offset at various angles.

3.27 **Load:** The total superimposed weight on the load block or hook.

3.28 **Load Block:** The assembly of hook or shackle, swivel, bearing, sheaves, pins, and frame suspended by the hoisting rope.

3.29 **Mini-Crawler Crane (Spider Crane):** A small crawler crane with outriggers that can travel or be hoisted to access hard to reach areas and is used for a variety of tasks including stone setting, steel erection, and glazing.

3.30 **Mobile Crane:** A lifting device incorporating a cable suspended latticed boom or hydraulic telescopic boom designed to be moved between locations. This includes "Mobile Tower Cranes", which are mobile and a self-erecting type of tower crane.

3.31 **Outriggers:** Extendable or fixed metal arms, attached to the mounting base, which rest on supports at the outer ends and are used to level the crane.

3.32 **Rated Load:** The maximum load for which a crane or individual hoist is designed and built by the manufacturer as shown on the equipment nameplate.

3.33 **Stop:** A device to limit travel of a trolley or crane bridge. This device normally is attached to a fixed structure and does not have energy absorbing ability.

3.34 **Swing:** The rotation of the superstructure for movement of loads in a horizontal direction about the axis of rotation.

3.35 **Tower Cranes:** "Fixed Tower Crane", which includes free standing and climber type tower cranes where the vertical mast or tower is attached to a fixed anchorage, foundation or undercarriage attached to rails.
3.36 **Two-Blocking:** The condition in which the lower load block (or hook assembly) comes in contact with the upper load block (or boom point sheave assembly), seriously interfering with safe operation of the crane.

4.0 **Reference Documents**

4.1 OSHA 29 CFR 1910.147 Subpart J The control of hazardous energy (lockout/tag out)

4.2 OSHA 29 CFR 1926.251 Subpart H Rigging equipment for material handling

4.3 OSHA 29 CFR 1926.553 Subpart N Base-mounted drum hoists

4.4 OSHA 29 CFR 1926.554 Subpart N Overhead hoists

4.5 OSHA 29 CFR 1926.555 Subpart N Conveyors

4.6 OSHA 29 CFR 1926.753 Subpart R Hoisting and rigging

4.7 OSHA 29 CFR 1926.859 Subpart T Mechanical demolition

4.8 OSHA 29 CFR 1926.952 Subpart V Mechanical Equipment

4.9 OSHA 29 CFR 1926.953 Subpart V Material Handling

4.10 OSHA 29 CFR 1926.955 Subpart V Overhead lines

4.11 Publication OSHA 3100 Crane or Derrick Suspended Personnel Platforms


4.13 Haselden Construction, Rigging Policy

4.14 OSHA 29 CFR 1926.1400 Subpart CC Cranes and Derricks in Construction

5.0 **Responsibilities**

5.1 **Crane Operator:** The operator is responsible for the safety of the crane operation as soon as the load is lifted clear of the ground. The operator is required to:

5.1.1 Lock out and tag out all pertinent lifting equipment during maintenance or lubrication. If the crane or carrier has been locked out or tagged out, the operator shall not remove the lock or tag, unless the lock or tag has been placed there by the operator. To remove someone else's lock or tag, refer to OSHA 29 CFR 1910.147 (e) Release from Lockout or Tag out.

5.1.2 Operate the crane in a safe, controlled and smooth manner.

5.1.3 Maintain the following crane information on a daily basis:

5.1.3.2 Daily Crane Inspection

5.1.4 Must not, and must not be required to operate the equipment in excess of its rated capacity.

5.1.5 Load weight. The operator must verify that the load is within the rated capacity of the equipment by at least one of the following methods:

5.1.5.1 The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. When requested by the operator, this information must be provided to the operator prior to the lift; or

5.1.5.2 The operator must begin hoisting the load to determine the weight of the load, using a load weighing device. If the load exceeds 75 percent of the maximum rated capacity at the longest radius that will be used during the lift operation, the operator must not proceed with the lift until the load weight is verified per the paragraph above.

5.1.6 Select the appropriate boom, jib and crane configuration to meet lift requirements and determine the net lifting capacity of this configuration.

5.1.7 Determine the number of parts of line required.

5.1.8 Have a thorough understanding of the information in the crane’s operating manual and understand the crane’s functions and limitations.

5.1.8.1 The operating instructions, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator's manual, must be readily available in the cab at all times for use by the operator.

5.1.8.2 Where rated capacities are available in the cab only in electronic form: If the information becomes inaccessible, the operator must immediately cease operations or follow safe shut-down procedures until the rated capacities become available.

5.1.9 Must not engage in any activity that diverts his attention while operating the equipment, such as the use of cellular phones (other than when used for signal communications).

5.1.10 Properly use the crane’s load charts.

5.1.11 Perform a pre-operation inspection of the crane daily (do a complete walk-around) and perform daily maintenance as prescribed by manufacturer and crane owner. Confirm operating aids and safety devices with which the crane is equipped are operational (i.e.: load moment indicator, anti-two block device, proximity sensor, etc.).
5.1.12 Check that the site is adequately prepared for the crane. Check that all hazards have been identified, e.g., power-lines, underground pipe-ways, vaults, manholes, culverts, etc.

5.1.13 Assemble, set up, rig and operate the crane properly in accordance with manufacturer’s requirements.

5.1.14 Inform site supervision of any dangerous conditions observed before or during crane operations.

5.1.15 Move the crane around the work-site with a suspended load as permitted by the manufacturer.

5.1.16 Assess weather conditions at time of lift to confirm lift can safely proceed.

5.1.17 Shut down and secure the machine properly when it is unattended.

5.1.18 Cease operations if an unsafe situation or condition is present.

5.1.19 Be certified and maintain certification for the crane that is operated.

5.1.20 Whenever there is a concern as to safety, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.

5.2 Crane Owner / End User: Crane Owner is the company that provides a crane complete with operator.

5.3 The Crane Owner must provide equipment and trained personnel capable of completing the job in a safe and efficient manner.

5.4 If the crane is rented without an owner-supplied operator it is the crane user’s responsibility to establish company policies which promote proper operation of the cranes.

5.4.1 Owner /End User Responsibilities – General:

5.4.1.1 Assign appropriately sized equipment and appropriately trained people to do the job.

5.4.1.2 Maintain equipment according to manufacturer’s recommendations and specifications.

5.4.1.3 Provide cranes in a safe, operable condition in compliance with manufacturer’s requirements and all applicable regulations.

5.4.1.4 Establish and follow comprehensive preventative maintenance and inspection programs.

5.4.1.5 Authorize the crane operator to refuse to make a lift for safety reasons without fear of reprisal.
5.4.1.6 Provide crane operators who are well trained, competent, certified (when applicable) and qualified to perform the required work.

5.4.1.6.1 On the Crane Operator Evaluation Form (Attachment 7.6 of this policy), the Crane Operator Evaluator shall evaluate the operator and confirm that the operator is qualified and has the skills and experience to safely operate the crane in consideration of its size and configuration including (but not limited to) the lifting capacity, boom length, any attachments (such as luffing jib), counterweight set up, safety devices, operational aids and software.

5.4.1.7 Provide crane operators who fully understand how to use the load chart.

5.4.1.8 Ensure crane operators are kept thoroughly oriented in all pertinent operating conditions and hazards including the crane and rigging configurations.

5.4.1.9 Provide resources to the operator for consultation regarding safety issues prior to and during the lift.

5.4.1.10 Inform crane operator of known hazards or requirements, e.g., high voltage power lines or underground voids or structures.

5.4.1.11 Provide competent qualified personnel to maintain, repair, transport, assemble and erect the lift equipment.

5.4.1.12 Provide ongoing high-quality training programs for all personnel.

5.4.1.13 Inform site owners of their responsibilities relating to crane use.

5.4.1.14 Maintain, for examination, the most recent inspection and record for each crane.

5.4.1.15 Inform operator that safety features may not be bypassed, defeated, disabled or tampered with.

5.4.1.16 Request and verify Crane Operator work experience and qualification records.

5.5 Facility/Site Owner: Person in legal possession of the work site or who requests that the work be done.

5.5.1 Clearly define requirements, expectations, and specifications in contract documents.

5.5.2 Require and confirm that third parties providing cranes and/or operators are in compliance with applicable laws and regulations, including facility owner’s standards.
5.6 **Rigger / Signal Person:** Persons performing rigging and signaling tasks must be qualified. See HC Rigging Policy for qualification requirements.

5.7 **Director of Health and Safety or Designee:**

5.7.1 Verify direct hire crane operators have proper training, qualifications and certifications.

5.7.2 Assign responsibilities for implementation of this policy.

5.7.3 Verify compliance with this policy on a periodic basis.

5.7.4 Review and approve all Critical and Tandem crane lifts, or designate these responsibilities.

5.8 **Site Superintendent(s) or Senior Superintendent:**

5.8.1 Verify subcontractor crane operators have proper training and certifications. This includes operator current operator certification card and current DOT medical exam card.

5.8.2 Verify that crane packages are complete, including inspections and lift plans.

5.8.3 Ensure that ground preparations are made. The equipment must not be assembled or used unless ground conditions are firm, drained, and graded so that the equipment manufacturer’s specifications for adequate support and degree of level of the equipment are met.

5.8.4 Inform the user of the equipment and the operator of the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards that are otherwise known to Haselden Construction.

5.8.5 Ensure that **all** lift plans and crane packets are submitted to the safety department timely and complete for review.

5.8.6 Assure that appropriate equipment is available as necessary.

5.8.7 Enforce compliance with this program.

6.0 **Implementation**

6.1 **General Information / Basic Safety Rules**

6.1.1 Prior to crane operations commencing on a project, the Project Management team shall review the information provided as outlined in the crane packet portion of this program. Crane operations may not proceed until Haselden Construction’s Management has accepted the information it has received. This includes completion of the following forms as appropriate to the planned lift:
7.1 Mobile Crane Startup Checklist
7.2 Tower Crane Startup Checklist
7.3 Non-Critical Lift Plan
7.4 Critical Lift Plan
7.5 Crane Hand Signals
7.6 Crane Operator Evaluation Form

6.1.2 The safety department will review all crane packets for documentation of the operator's qualifications, certification, DOT medical card, the certification of compaction, annual inspection and third party post-assembly or reconfiguration inspection.

6.1.3 Any critical lift must have a written critical lift plan submitted and approved by Haselden Construction Management and the Haselden Safety Department prior to the lift. All involved parties shall participate in planning for a critical lift and documentation must be submitted to Haselden Construction.

6.1.4 Tandem critical lift plans must be reviewed and approved in writing by Haselden’s Director of Safety and Health or Designee.

6.1.5 Any plans to lift suspended personnel platforms must be reviewed and approved in writing by Haselden’s Director of Safety and Health or Designee.

6.1.6 Loads will never be swung over the heads of workers in the area.

6.1.6.1 Exceptions for steel erection: See HC Steel Erection policy.

6.1.7 Employees may never ride hooks, concrete buckets, or other loads being suspended or moved by cranes.

6.1.8 Tag lines must be used to control loads. Each piece or component shall have a tag line. For multiple lift rigging each beam shall have a tag line.

6.1.9 Anti-two blocking devices shall be utilized on all mobile cranes.

6.1.10 Accessible areas within the swing radius of the rotating superstructure of the crane will be barricaded to prevent employees from being struck or crushed by the crane.

6.1.11 A signal person must be provided in each of the following situations:

6.1.11.1 If the load travel path or the area near or at load placement is not in full view of the operator.

6.1.11.2 When the equipment is traveling, the view in the direction of travel is obstructed.
6.1.11.3 Due to site specific safety concerns, when either the operator or the person handling the load determines that it is necessary.

6.1.12 Hand signals to crane operators will be those prescribed by the applicable ANSI standard for the type of crane in use.

6.1.13 Anyone who becomes aware of a safety problem must alert the operator or signal person by giving the stop or emergency stop signal. The operator is required to obey a stop or emergency stop signal.

6.2 **Ground Conditions**

6.2.1 The controlling entity must ensure that equipment is not assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met. This may require supporting materials. The requirement for the ground to be drained does not apply to marshes or wetlands.

6.2.1.1 The controlling entity must inform the user of the equipment and the operator of the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards are otherwise known to that controlling entity.

6.2.1.2 If there is no controlling entity for the project, the employer that has authority at the site to make or arrange for ground preparations must ensure that the ground preparations are made and that the user and operator are informed of subsurface hazards.

6.2.2 If the A/D director or the operator determines that ground conditions do not meet the requirements for adequate support and leveling, that person's employer must have a discussion with the controlling entity regarding the ground preparations that are required to provide suitable support.

6.2.2.1 The Haselden management team, along with the subcontractor A/D Director, lift/rigging supervisor, crane operator and a civil engineer will mutually agree on soil stabilization and/or crane matting requirements.

6.2.3 Crane mats are required whenever the crane outrigger, wheel or crawler track pressure equals or exceeds the soil bearing capacity.

6.3 **Assembly/Disassembly**

6.3.1 Crane assembly/set up requirements. When assembling or disassembling equipment (or attachments), the employer must comply with all applicable manufacturer prohibitions and must comply with either:
6.3.1.1 Manufacturer procedures applicable to assembly and disassembly, or

6.3.1.2 Employer procedures for assembly and disassembly. Employer procedures may be used only where the employer can demonstrate that the procedures used are as effective as the requirements of the crane manufacturer or 29CFR1926 Subpart CC.

NOTE: The employer must follow manufacturer procedures when an employer uses synthetic slings during assembly or disassembly rigging. 1926.1404(a)

6.3.2 Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons ("A/D director").

6.3.3 Knowledge of procedures. The A/D director must understand the applicable assembly/disassembly procedures.

6.3.4 Review of procedures. The A/D director must review the applicable assembly/disassembly procedures immediately prior to the commencement of assembly/disassembly unless the A/D director understands the procedures and has applied them to the same type and configuration of equipment (including accessories, if any).

6.3.5 Crew instructions. Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members can demonstrate knowledge of all of the following:

6.3.5.1 Their tasks.

6.3.5.2 The hazards associated with their tasks.

6.3.5.3 The hazardous positions/locations that they need to avoid.

6.3.5.4 Protecting assembly/disassembly crew members out of operator view.

6.3.6 Before a crew member goes to a location that is out of view of the operator and is either in a position where the crew member could be injured by movement of the equipment (or load), the crew member must inform the operator that he is going to that location.

6.3.7 Where the operator knows that a crew member went to a location covered by paragraph 6.3.6, the operator must not move any part of the equipment (or load) until the operator receives communication that the crew member is in a safe position.

6.3.8 Working under the boom, jib or other components:

6.3.8.1 When pins (or similar devices) are being removed, employees must not be under the boom, jib, or other components.
6.3.8.2 Exception. Where the employer demonstrates that site constraints require one or more employees to be under the boom, jib, or other components when pins (or similar devices) are being removed, the A/D director must implement procedures that minimize the risk of unintended dangerous movement and minimize the duration and extent of exposure under the boom. (See Non-Mandatory Appendix B of OSHA 1926 subpart CC for an example.)

6.3.9 Capacity limits. During all phases of assembly/disassembly, rated capacity limits for loads imposed on the equipment, equipment components (including rigging), lifting lugs and equipment accessories, must not be exceeded for the equipment being assembled/disassembled.

6.3.10 Addressing specific hazards. The A/D director supervising the assembly/disassembly operation must address the hazards associated with the operation, which include:

6.3.10.1 Site and ground conditions must be adequate for safe assembly/disassembly operations and to support the equipment during assembly/disassembly.

6.3.10.2 Blocking material. The size, amount, condition and method of stacking the blocking must be sufficient to sustain the loads and maintain stability.

6.3.10.3 Proper location of blocking. When used to support lattice booms or components, blocking must be appropriately placed to protect the structural integrity of the equipment and prevent dangerous movement and collapse.

6.3.10.4 Verifying assist crane loads. When using an assist crane, the loads that will be imposed on the assist crane at each phase of assembly/disassembly must be verified by the operator before assembly/disassembly begins.

6.3.10.5 Boom and jib pick points. The point(s) of attachment of rigging to a boom (or boom sections or jib or jib sections) must be suitable for preventing structural damage and facilitating safe handling of these components.

6.3.10.6 The center of gravity of the load must be identified if that is necessary for the method used for maintaining stability.

6.3.10.7 Where there is insufficient information to accurately identify the center of gravity, measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity must be used. (See Non-Mandatory Appendix B of 29 CFR 1926 Subpart CC for an example.)

6.3.11 Stability upon pin removal. The boom sections, boom suspension systems (such as gantry A-frames and jib struts), and components
must be rigged or supported to maintain stability upon the removal of the pins.

6.3.12 Snagging. Suspension ropes and pendants must not be allowed to catch on the boom or jib connection pins or cotter pins (including keepers and locking pins).

6.3.13 Struck by counterweights. Employees must be protected from being struck by inadequately supported counterweights and from hoisting counterweights.

6.3.14 Boom hoist brake failure. Each time reliance is to be placed on the boom hoist brake to prevent boom movement during assembly/disassembly, the brake must be tested prior to such reliance to determine if it is sufficient to prevent boom movement. If it is not sufficient, a boom hoist pawl, other locking device/back-up braking device, or another method of preventing dangerous movement of the boom (such as blocking or using an assist crane) from a boom hoist brake failure must be used.

6.3.15 Loss of backward stability. Backward stability before swinging the upperworks, travel, and when attaching or removing equipment components.

6.3.16 Wind speed and weather. The effect of wind speed and weather on the equipment. Gust speed and sustained wind speed must be considered the same.

6.3.17 Cantilevered boom sections. Manufacturer limitations on the maximum amount of boom supported only by cantilevering must not be exceeded. Where these are unavailable, a registered professional engineer familiar with the type of equipment involved must determine in writing this limitation, which must not be exceeded.

6.3.18 Weight of components. The weight of each of the components must be readily available.

6.3.19 Components and configuration. The selection of components, and configuration of the equipment, that affect the capacity or safe operation of the equipment must be in accordance with:

6.3.19.1 Manufacturer instructions, prohibitions, limitations, and specifications. Where these are unavailable, a registered professional engineer familiar with the type of equipment involved must approve, in writing, the selection and configuration of components; or

6.3.19.2 Approved modifications that meet the requirements of 29 CFR 1926.1434 (Equipment modifications).

6.3.20 Upon completion of assembly, the equipment must be inspected by a qualified person to assure that it is configured in accordance with manufacturer equipment criteria. Lattice boom cranes have more restrictive requirements. See “Inspections”, below.
6.3.21 Shipping pins. Reusable shipping pins, straps, links, and similar equipment must be removed. Once they are removed they must either be stowed or otherwise stored so that they do not present a falling object hazard.

6.3.22 Pile driving. Equipment used for pile driving must not have a jib attached during pile driving operations.

6.3.23 Outriggers and Stabilizers. When the load to be handled and the operating radius require the use of outriggers or stabilizers, or at any time when outriggers or stabilizers are used, all of the following requirements must be met:

6.3.23.1 The outriggers or stabilizers must be either fully extended or, if manufacturer procedures permit, deployed as specified in the load chart.

6.3.23.2 The outriggers must be set to remove the equipment weight from the wheels.

6.3.23.3 Outrigger and stabilizer blocking must be placed only under the outrigger or stabilizer float/pad of the jack.

6.3.23.4 Each outrigger or stabilizer must be visible to the operator or to a signal person during extension and setting.

6.3.24 Rigging. When rigging is used for assembly/disassembly, the employer must ensure that the rigging work is done by a qualified rigger.

6.3.24.1 Synthetic slings must be protected from abrasive, sharp or acute edges, and configurations that could cause a reduction of the sling's rated capacity, such as distortion or localized compression. Note: Requirements for the protection of wire rope slings are contained in 29 CFR 1926.251(c)(9).

6.3.24.2 When synthetic slings are used, the synthetic sling manufacturer's instructions, limitations, specifications and recommendations must be followed.

6.3.25 Dismantling (including dismantling for changing the length of) booms and jibs:

6.3.25.1 None of the pins in the pendants are to be removed (partly or completely) when the pendants are in tension.

6.3.25.2 None of the pins (top or bottom) on boom sections located between the pendant attachment points and the crane/derrick body are to be removed (partly or completely) when the pendants are in tension.

6.3.25.3 None of the pins (top or bottom) on boom sections located between the uppermost boom section and the crane/derrick body are to be removed (partly or completely) when the boom is being
supported by the uppermost boom section resting on the ground (or other support).

6.3.25.4 None of the top pins on boom sections located on the cantilevered portion of the boom being removed (the portion being removed ahead of the pendant attachment points) are to be removed (partly or completely) until the cantilevered section to be removed is fully supported.

6.3.26 When using employer procedures instead of manufacturer procedures for assembly/disassembly, the employer must ensure that the procedures:

6.3.26.1 Prevent unintended dangerous movement, and prevent collapse, of any part of the equipment.

6.3.26.2 Provide adequate support and stability of all parts of the equipment.

6.3.26.3 Position employees involved in the assembly/disassembly operation so that their exposure to unintended movement or collapse of part or all of the equipment is minimized.

6.3.27 Qualified person. Employer procedures must be developed by a qualified person.

6.4 Power Line Safety: Working near power lines

6.4.1 Working within minimum clearance distances of energized electrical lines requires a Critical Lift Plan.

6.4.2 All crane parts including loads, booms, and rigging will be kept at least 20 feet from all energized electrical lines at or below 350kV, and at least 50 feet from all energized electrical lines over 350kV.

6.4.3 All crane parts including loads, booms, and rigging will be kept at a distance established by the utility owner/operator or registered professional engineer, qualified in electrical transmission and distribution, from all energized electrical lines over 1000 kV.

6.4.4 If any part of the crane, rigging or load could get within the prohibited distance from a power line, follow the OSHA Regulations regarding options on this issue, 29 CFR 1926.1407 for assembly and disassembly of cranes, and 29 CFR 1926.1408 for operations.

6.4.5 When setting, moving, or removing poles using cranes, derricks, gin poles, A-frames, or other mechanized equipment near energized lines or equipment, precautions shall be taken to avoid contact with energized lines or equipment, except in bare-hand live-line work, or where barriers or protective devices are used. See 29 CFR 1926 Subpart V for specific requirements for this type of work.

6.4.6 Equipment operations in which any part of the equipment, load line, or load (including rigging and lifting accessories) is closer than the
minimum approach distance under Table A of 29 CFR 1926.1408 to an energized power line is prohibited, except where the employer demonstrates that all of the following requirements are met:

6.4.6.1 It is infeasible to do the work without breaching the minimum approach distance under Table A of 29 CFR 1926.1408.

6.4.6.2 After consultation with the utility owner/operator, it is infeasible to de-energize and ground the power line or relocate the power line.

6.4.6.3 The power line owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution determines the minimum clearance distance required to prevent electrical contact considering the on-site conditions. The factors that must be considered include atmospheric conductivity; time necessary to bring the equipment, load line, and load (including rigging and lifting accessories) to a complete stop; wind conditions; degree of sway in the power line; lighting conditions, and other conditions affecting the ability to prevent electrical contact.

6.4.7 This section does not apply to work covered by Subpart V.

6.4.8 A planning meeting with the employer and utility owner/operator (or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution) is held to determine the procedures that will be followed to prevent electrical contact and electrocution. At a minimum, these procedures must include:

6.4.8.1 If the power line is equipped with a device that automatically reenergizes the circuit in the event of a power line contact, before the work begins, the automatic reclosing feature of the circuit interrupting device must be made inoperative if the design of the device permits.

6.4.8.2 A dedicated spotter who is in continuous contact with the operator.

The dedicated spotter must:

6.4.8.2.1 Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, a line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).

6.4.8.2.2 Be positioned to effectively gauge the clearance distance.
6.4.8.2.3 Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.

6.4.8.2.4 Give timely information to the operator so that the required clearance distance can be maintained.

6.4.9 An elevated warning line or barricade (not attached to the crane), in view of the operator (either directly or through video equipment), equipped with flags or similar high-visibility markings, to prevent electrical contact.

6.4.10 An insulating link/device must be installed at a point between the end of the load line (or below) and the load.

6.4.11 All employees, except for equipment operators located on the equipment, who may come in contact with the equipment, the load line, or the load must be insulated or guarded from the equipment, the load line, and the load through an additional means other than the insulating link, must wear insulating gloves rated for the voltage are adequate additional means of protection.

6.4.12 Nonconductive rigging is required if the rigging may be within the Table A of 29 CFR 1926.1408 distance during the operation.

6.4.13 If the crane is equipped with a device that automatically limits range of movement, it must be used and set to prevent any part of the equipment, load line, or load (including rigging and lifting accessories) from breaching the minimum approach distance.

6.4.14 If a tag line is used, it must be nonconductive.

6.4.15 Barricades must be set at least 10 feet away from the equipment to prevent unauthorized personnel from entering the work area. Where obstacles prevent the barricade from being at least 10 feet away, if feasible.

6.4.15.1 Workers other than the operator must be prohibited from touching the load line above the insulating link. Operators remotely operating the equipment from the ground must use either wireless controls that isolate the operator from the equipment or insulating mats that insulate the operator from the ground.

6.4.15.2 Only personnel essential to the operation are permitted to be in the area of the crane and load.

6.4.15.3 The equipment must be properly grounded.

6.4.15.4 Insulating line hose or cover-up must be installed by the utility owner/operator except where such devices are unavailable for the line voltages involved.

6.4.15.5 The procedures used must be in writing and available on site.
6.4.15.6 The equipment user and utility owner/operator (or registered professional engineer) must meet with the equipment operator and the other workers who will be in the area of the equipment or load to review the procedures.

6.4.15.7 The utility owner/operator (or registered professional engineer) and all employers of employees involved in the work must identify one person who will direct the implementation of the procedures. He will be given stop work authority.

6.4.16 Traveling under power lines without a load, the boom and mast support system must be lowered sufficiently to meet the following requirements:

6.4.17 Clearances specified below must be maintained

6.4.18 The effects of speed and terrain on equipment movement (including movement of the boom and mast support system) do not cause the required clearances to be breached.

6.4.19 If any part of the equipment while traveling will get closer than 20 feet to the power line, a dedicated spotter must be provided. The spotter will:

6.4.19.1 Be positioned to effectively gauge the clearance distance.

6.4.19.2 Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.

6.4.19.3 Give timely information to the operator so that the required clearance distance can be maintained.

6.4.19.4 Additional precautions for traveling in poor visibility. When traveling at night, or in conditions of poor visibility, the power lines must be illuminated.

6.4.19.5 A safe path of travel must be identified and used.

Table T-Minimum Clearance Distances While Traveling with No Load

<table>
<thead>
<tr>
<th>Voltage (nominal, kV, alternating current)</th>
<th>While traveling-minimum clearance distance (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 0.75</td>
<td>4</td>
</tr>
<tr>
<td>over .75 to 50</td>
<td>6</td>
</tr>
<tr>
<td>over 50 to 345</td>
<td>10</td>
</tr>
<tr>
<td>over 345 to 750</td>
<td>16</td>
</tr>
</tbody>
</table>
6.5 Inspection

6.5.1 A competent person will inspect the crane prior to each use/during use to make sure it is in safe operating condition. Also, a certification record of monthly inspections to include date, inspector signature, and crane identification will be maintained.

6.5.2 A thorough annual inspection of hoisting machinery will be made by a third party competent qualified person, or by a government agency, and records shall be maintained.

6.5.3 All lattice boom cranes, tower cranes, and hydraulic cranes with attachments other than those carried on the crane boom are required to have a comprehensive, third party safety inspection prior to initial operation and after reconfiguration. Any defects uncovered by this inspection that affect the crane’s safety must be corrected prior to its use.

6.5.4 Modified Equipment. Equipment that has had modifications or additions which affect the safe operation of the equipment (such as modifications or additions involving a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) or capacity must be inspected by a qualified person after such modifications/additions have been completed, prior to initial use. The inspection must meet all of the following requirements:

6.5.4.1 The inspection must assure that the modifications or additions have been done in accordance with the approval obtained according to 29 CFR 1926.1434 (Equipment modifications).

6.5.4.2 The inspection must include functional testing of the equipment.

6.5.5 Repaired/Adjusted Equipment. Equipment that has had a repair or adjustment that relates to safe operation (such as: A repair or adjustment to a safety device or operator aid, or to a critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism), must be inspected by a qualified person after such a repair or adjustment has been completed, prior to initial use. The inspection must meet all of the following requirements:

6.5.5.1 The qualified person must determine if the repair/adjustment meets manufacturer equipment criteria (where applicable and available).
6.5.5.2 Where manufacturer equipment criteria are unavailable or inapplicable, the qualified person must:

6.5.5.2.1 Determine if a registered professional engineer (RPE) is needed to develop criteria for the repair/adjustment. If an RPE is not needed, the employer must ensure that the criteria are developed by the qualified person. If an RPE is needed, the employer must ensure that they are developed by an RPE.

6.5.5.2.2 Determine if the repair/adjustment meets the criteria developed by the RPE or qualified person.

6.5.5.2.3 The inspection must include functional testing of the repaired/adjusted parts and other components that may be affected.

6.5.6 Ground Conditions and Equipment Leveling

6.5.6.1 Ground conditions around the equipment must be inspected before each shift for proper support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions.

6.5.6.2 The equipment shall be inspected both before each shift and after each move and setup for level position within the tolerances specified by the manufacturer.

6.5.7 Rigging equipment (chains, slings, wire rope, hooks, shackles, attachments and other equipment) will be inspected prior to use on each shift to ensure it is safe. Defective rigging and equipment will be tagged and removed from service.

6.5.8 Wire rope shall be taken out of service when one of the following conditions exist:

6.5.8.1 In running ropes, 6 randomly distributed broken wires in one lay or 3 broken wires in one strand of one lay.

6.5.8.2 Wear of one-third the original diameter of outside individual wires.

6.5.8.3 Kinking, crushing, bird caging, heat damage or any other damage resulting in distortion of the rope structure.

6.5.8.4 In standing ropes, more than two broken wires in one lay in sections beyond end connections, or more than one broken wire at an end connection.

6.5.9 All safety devices must be operational according to the manufacturer (back up alarms, load alarms, warning lights, etc.)

6.6 Training Requirements
6.6.1 Awareness: All Team Members who will work in the vicinity of cranes, derricks, hoists, and other lifting equipment will be trained to recognize potential hazards and who to notify to correct the hazards.

6.6.2 All operators of lifting equipment will be certified by the (NCCCO) National Commission for the Certification of Crane Operators, NCCER, (National Center for Construction Education and Research), Crane Institute of America (CIC), the Operating Engineers Certification Program (OECP), qualified by an audited employer program or certified by an accredited crane operator testing organization in accordance with OSHA requirements listed in 29 CFR 1926.1427. Certifications must be current to operate any crane with a lifting capacity of 2000 lb or more.

6.6.3 The operator's certificate must state the type and capacity of equipment for which the operator is certified.

6.6.4 Operator certification includes a current DOT medical card.

6.6.5 A copy of the Haselden operator’s certification will be kept on file by Human Resources and the safety department.

6.6.6 A copy of the subcontractor operator’s certification must be kept with the lift plan.

6.6.7 All Haselden Riggers and Signal Persons will be trained at least every three years with records of such training kept on file by Human Resources and the Safety Department. Refer to the HC Rigging Policy for details.

6.6.8 Subcontractor will provide Haselden site management with current training records for all Riggers and Signal Persons for the project record.

6.7 Fall Protection

6.7.1 Fall protection requirements differ from the HC Fall Protection Policy. See requirements below:

6.7.2 For non-assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 6 feet above a lower level as follows:

6.7.2.1 When moving point-to-point:

   6.7.2.1.1 On non-lattice booms (whether horizontal or not horizontal).

   6.7.2.1.2 On lattice booms that are not horizontal.

   6.7.2.1.3 On horizontal lattice booms where the fall distance is 15 feet or more.

6.7.2.2 While at a work station on any part of the equipment (including the boom, of any type), except when the employee is at or near
draw-works (when the equipment is running), in the cab, or on the deck.

6.7.3 For assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level, except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.

6.7.4 Boom walkways must be at least 12 inches wide.

6.7.5 Guardrails, railings and other permanent fall protection attachments along walkways are not required, but are prohibited on booms supported by pendant ropes or bars if the guardrail assembly could be snagged by the ropes or bars.

6.7.6 Removable guardrails are prohibited.

6.7.7 Guardrails or railings may be of any height up to, but not more than, 45 inches.

6.7.8 Steps, handholds, ladders, grab rails, guardrails and railings must be maintained in good condition.

6.7.9 Cranes manufactured after November 8, 2011 must be equipped with steps, handholds, ladders, and guardrail assemblies to provide safe access and egress between the ground and the operator work station(s), including the forward and rear positions.

6.7.10 Tower cranes manufactured after November 8, 2011 must be equipped with steps, handholds, ladders, and guardrail systems to provide safe access and egress between the ground and the cab, machinery platforms, and tower (mast).

6.7.11 Walking and stepping surfaces, except for crawler treads, must have slip-resistant properties (such as diamond plate metal, strategically placed grip tape, expanded metal, or slip-resistant paint).

6.7.12 Personal fall arrest systems must not be anchored to any part of the equipment unless a competent person, from a visual inspection, without an engineering analysis, could conclude that the anchor point would support 5000 lbs. and is not part of a platform support system.

6.7.13 Positioning device systems must not be anchored to any part of the equipment unless a competent person, from a visual inspection, without an engineering analysis, would conclude that the anchor point would support 3000 lbs. and are not part of a platform suspension system.

6.7.14 Attachable anchor devices (portable anchor devices that are attached to the equipment) must meet the anchorage criteria in 29 CFR 1926.502(d)(15) for personal fall arrest systems and 29 CFR 1926.502(e)(2) for positioning device systems.
6.7.15 Anchorages for fall restraint systems. Fall restraint systems must be anchored to any part of the equipment that is capable of withstanding twice the maximum load that an employee may impose on it during reasonably anticipated conditions of use.

6.7.16 Anchoring to the load line. A personal fall arrest system is permitted to be anchored to the crane or derrick's hook (or other part of the load line) where all of the following requirements are met:

6.7.16.1 A qualified person has determined that the set-up and rated capacity of the crane or derrick (including the hook, load line and rigging) meets or exceeds the requirements in 29 CFR 1926.502(d)(15).

6.7.16.2 The equipment operator must be at the work site and informed that the equipment is being used for this purpose.

6.7.16.3 No load is suspended from the load line when the personal fall arrest system is anchored to the crane or derrick's hook (or other part of the load line).

6.7.16.4 Training. The employer must train each employee who may be exposed to fall hazards while on, or hoisted by, equipment.

6.8 Crane Packet

6.8.1 Before any crane can start operations on a Haselden Construction site the following documents must be compiled and filed in a packet for project record:

6.8.1.1 Copy of last maintenance record

6.8.1.2 Copy of current annual inspection (third party or government entity)

6.8.1.3 Certification of compaction for mobile crane pad (provided by soils inspector)

6.8.1.4 Copy of current DOT Medical Card

6.8.1.5 Copy of current operator’s certification card for the type of crane that will be operated

6.8.1.6 Complete non-critical lift plan for heaviest pick (see attachment)

6.8.1.7 Critical lift plan if applicable (if applicable, see attachment)

6.8.1.8 Tandem critical lift plan (if applicable, generated by company responsible for lift)

6.8.1.9 Completed Mobile Crane startup checklist for mobile cranes (see attachment)
6.8.1.10 Completed Tower Crane startup checklist for tower cranes (see attachment)

6.9 Critical Lifts

6.9.1 The hoisting of equipment where any of the following apply:

6.9.1.1 The total load to be lifted exceeds 75% of the manufacturer’s load rating chart for the configuration of the crane

6.9.1.2 The total load to be lifted exceeds 50,000 pounds,

6.9.1.3 Working within minimum clearance distances of energized electrical lines,

6.9.1.4 The crane boom will be assembled in the air,

6.9.1.5 The crane will be operated outside of the manufacturer’s recommendations.

6.9.1.6 Multiple-crane lifts or tandem lifts.

6.9.1.7 Any other lift that is deemed to be a “Critical Lift” by Haselden.

6.9.2 Critical Lift Plan.

6.9.2.1 Subcontractor will submit a written lift plan to the Haselden management team:

6.9.2.1.1 For all equipment hoisting that meets the definition of a critical lift,

6.9.2.1.2 At least 30 working days prior to the planned date of the lift.

6.9.2.2 Haselden management team lift coordinator will:

6.9.2.2.1 Review the plan and,

6.9.2.2.2 Return the plan to the subcontractor within 10 working days, indicating the plan was “accepted”, “accepted with comments” or “not accepted”.

6.9.2.3 Multiple Crane Lifts: If a multiple crane lift is proposed, subcontractor will demonstrate to Haselden management team:

6.9.2.3.1 The need to use multiple cranes and,

6.9.2.3.2 That lift can be performed safely.

6.9.2.4 The subcontractor will comply with all the provisions and documentation requirements associated with a critical lift.
6.9.3 Lifts exceeding 95% of the load capacity chart for any given configuration are **NOT** permitted.

6.9.4 Weight/load will calculations will be:

6.9.4.1 Verified by the subcontractor rigging/lift supervisor,

6.9.4.2 Reviewed and approved by the Haselden management team,

6.9.4.3 Determined by one or more of the following:

   6.9.4.3.1  Engineering calculations,
   6.9.4.3.2  Transportation weight tickets,
   6.9.4.3.3  Load-indicating shackles,
   6.9.4.3.4  Dynamometer, etc.

6.9.4.4 If weight of the load is only available through engineering calculations, a form of load-indicating device will be used **unless an exception** is made by the Haselden superintendent and project manager.

6.9.4.5 Load-indicating devices will be used for loads that may be stuck or laden with residue.

6.9.4.6 Load indicating devices are required on all multiple crane lifts.

6.9.5 Lift area restrictions.

6.9.5.1 The area under the arc of the load will be off limits to all non-essential personnel.

6.9.5.2 The following project personnel will mutually determine the area that will be barricaded:

   6.9.5.2.1  Haselden management team **and** subcontractor rigging/ lift supervisor,
   6.9.5.2.2  Crane supplier/vendor/manufacturer’s representative,
   6.9.5.2.3  Haselden management team safety resource.

6.9.5.3 Only personnel essential to the lift will be allowed within the barricaded area.

6.9.6 Formal Critical Lift Meeting.

6.9.6.1 A formal critical lift meeting will be held and attended by Haselden management team representatives and the subcontractor’s site rigging /lift supervisor.
6.9.6.2 Method of communication and identify the personnel involved in the lift will be outlined;

6.9.6.2.1 Lift crew and crane operator(s) will be assigned a dedicated radio frequency,

6.9.6.2.2 The qualified signal personnel will be identified by high-visibility bonnet.

6.9.7 All rigging will be performed by qualified riggers.

6.10 Critical Lift Plan

6.10.1 In additional to a completed Critical Lift Permit (See attachment 7.4) a critical lift will be provided and reviewed during the Critical Lift Meeting. The required components of the Critical Lift Plan are outlined in the sections below.

6.10.1.1 The elevation view will show:

6.10.1.1.1 Make and model of crane with boom, boom length, swing radius and crane capacity for configuration to be used.

6.10.1.1.2 Rigging accessory information that identifies and shows the capacity of slings, shackles, spreader beam(s) weight and dimensions, blocks, etc.

6.10.1.1.3 Tabulated weights of all items that constitute the load on the crane boom such as lifted load, load lines, load block, spreaders, slings, shackles, jib, headache ball, etc.

6.10.1.1.4 Lifted equipment information, including:

6.10.1.1.4.1 Weight, height, and diameter, point of support, center of gravity.

6.10.1.1.5 Obstructions or interferences to the lift from existing equipment, structures, etc.

6.10.1.1.6 Details of the supporting mats or foundations under the lifting and tailing cranes that include notations of the bearing capacity of the subsoil and the calculated loads applied.

6.10.1.1.7 Ratio of the lifted load of each crane’s chart capacity as configured.

6.10.1.1.8 Crane boom-to-load clearances.

6.10.1.2 The plan view will show an overlay of the following:
6.10.1.2.1 Locations of lifting and trailing cranes at the beginning of lift, during any travel, and final positions.

6.10.1.2.2 Initial horizontal position of equipment being lifted.

6.10.1.2.3 Layout and specifics for all crane matting.

6.10.1.2.4 Existing or “new construction” utilities that will be in place during the lift.

6.10.1.2.5 Underground lines and existing facilities lift will pass over.

6.10.1.2.6 Overhead electrical lines and cables that will be within minimum clearance distances of any part of the crane, rigging or load.

6.10.1.2.7 Area to be barricaded when lift is being made.

6.10.1.3 Additional requirement, attachments and/or information.

6.10.1.3.1 To ensure all aspect of the critical lift is reviewed, the additional information is required;

6.10.1.3.1.1 Equipment information from equipment manufacturer/fabricator.

6.10.1.3.1.2 Equipment weight verification by either scale weight tickets or independently calculated.

6.10.1.3.1.3 Outrigger or crawler track bearing pressure chart or calculations.

6.11 Approval/Authorization of Critical Lift

6.11.1.1 Upon completing the review of the Critical Lift Plan, the meeting attendees will accept, reject or accept with modification the plan. If the plan is accepted:

6.11.1.1.1 As documented and discussed, the Critical Lift Plan will be signed by affected personnel.

6.11.1.1.2 With modifications, the modification will be made and documents upgraded/redlined before the plan can be signed.

6.11.1.2 All critical lifts require approval from the following people before a lift can proceed.

6.11.1.2.1 Representative of subcontractor making lift (crane operator).

6.11.1.2.2 Subcontractor rigging/lift supervisor.
6.11.1.2.3 Subcontractor project manager.

6.11.1.2.4 Haselden Construction Superintendent.

6.11.1.2.5 Haselden Construction Project Manager.

6.11.1.2.6 Haselden Construction Director of Safety and Health or Designee

6.11.1.3 An approved copy of the Critical Lift Plan must be available at the lift site.

6.11.1.4 The following Haselden and subcontract personnel will be present at the lift to jointly examine the crane set up and ensure full compliance with the Critical Lift Plan:

6.11.1.4.1 Subcontractor rigging/lift supervisor,

6.11.1.4.2 Haselden Construction Superintendent.

6.11.1.4.3 Haselden Construction Project Manager.

6.11.1.5 If the final inspections (joint examination) of the crane, equipment, lift area, rigging, etc., meets all the provisions of the plan, the Haselden Superintendent and Haselden Project Manager will sign the plan, signifying the lift may begin.

6.11.1.6 The subcontractor will provide Haselden copies of all documentation associated with the critical lift for Haselden record retention requirements.

7.0 Attachments:

7.1 Mobile Crane Startup Checklist

7.2 Tower Crane Startup Checklist

7.3 Non-Critical Lift Plan

7.4 Critical Lift Plan

7.5 Crane Hand Signals

7.6 Crane Operator Evaluation Form
<table>
<thead>
<tr>
<th>Item</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator is certified by NCCCO or an OSHA recognized certification agency.</td>
<td></td>
<td></td>
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<tr>
<td>Operator’s qualifications have been evaluated by the employer per 29 CFR 1926.1427</td>
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<tr>
<td>Operator has been notified of anticipated critical lifts (loads over 75% of the crane’s chart)</td>
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<tr>
<td>Operator understands that critical lift plans MUST be submitted BEFORE ANY are made</td>
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<tr>
<td>Operator knows how to operate ALL of the crane’s instruments and controls</td>
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<tr>
<td>Operator will use a load moment indicator as a safety backup to check load weights</td>
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<tr>
<td>Operator will inspect the crane daily and submit this documentation to Haselden Construction</td>
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<tr>
<td>Operator understands the crane’s manual, functions and limitations</td>
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<tr>
<td>Operator understands the crane’s load charts</td>
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<tr>
<td>Operator will check that the site is adequately prepared for mobile cranes</td>
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<tr>
<td>Operator will ensure mobile cranes are setup in accordance with manufacturer’s specifications</td>
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<tr>
<td>Operator has a radio for communication during blind picks or other reasons when required</td>
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<tr>
<td>There will be no energized power lines within 20 feet of any part of the crane at any time</td>
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<tr>
<td>Crane will be setup a safe distance from excavations, utilities, vaults, retaining walls, etc.</td>
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<tr>
<td>The crane’s swing radius will be barricaded</td>
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</tr>
<tr>
<td>Paths for raised loads have been planned to keep other workers and the public safe</td>
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</tr>
<tr>
<td>A fire extinguisher is in the crane cab</td>
<td></td>
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<tr>
<td>A Qualified Rigger will be used to rig loads for the crane</td>
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<td></td>
</tr>
<tr>
<td>A copy of the crane’s annual inspection has been submitted to Haselden Construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator agrees to comply with OSHA, ANSI and Haselden Construction safety requirements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haselden &amp; Operator agree Operator has the right to refuse to lift any load for safety reasons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haselden has obtained geotechnical reports that demonstrate ground conditions are adequate to support Assembly/Disassembly, traveling, and outrigger or track loads during lifting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane owner/end user provided a competent, qualified person to direct Assembly/Disassembly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane owner/end user has provided a comprehensive 3rd Party Inspection of lattice boom or hydraulic cranes with attachments after assembly or reconfiguration.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CRANE STARTUP COMPLETION SIGNATURES**

Both Haselden Construction and the Crane Operator agree the above documented information is accurate:

<table>
<thead>
<tr>
<th>Signature of HC Representative</th>
<th>Date</th>
<th>Signature of Crane Operator</th>
<th>Date</th>
</tr>
</thead>
</table>
TOWER CRANE STARTUP CHECKLIST

<table>
<thead>
<tr>
<th>Jobsite:</th>
<th>Operator Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand/Type of Crane to be Used:</td>
<td></td>
</tr>
<tr>
<td>Describe any crane or site limitations that may affect the safety of its use (swing path, etc.):</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the crane’s maximum capacity at the farthest anticipated radius?</td>
<td></td>
</tr>
<tr>
<td>What is the total weight of all anticipated rigging (ball or block, line, spreaders, etc.)?</td>
<td></td>
</tr>
<tr>
<td>What is the maximum load weight that will be picked with this crane?</td>
<td></td>
</tr>
<tr>
<td>What is the maximum radius planned?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEMS TO BE COVERED PRIOR TO THE START OF HOISTING</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator is certified by NCCCO or OSHA recognized agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator has been notified of anticipated critical lifts (loads over 75% of the crane’s chart)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator understands that critical lift plans MUST be submitted BEFORE ANY are made</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator knows how to operate ALL of the crane’s instruments and controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator will use a load moment indicator as a safety backup to check load weights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator will inspect the crane daily and submit a copy of this documentation to Haselden Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator understands the crane’s manual, functions and limitations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator will check that the site is adequately prepared for jib movements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Party inspector will ensure cranes are setup in accordance with manufacturer’s specifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator has a radio for communication during blind picks or other reasons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There will be no energized power lines within 20 feet of any part of the crane at any time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Party inspector will verify the adequacy of the crane’s pad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The crane’s swing will be coordinated for clearance of buildings, sidewalks other cranes, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paths for raised loads been pre-determined to keep others away</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A fire extinguisher is in the crane’s cab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Qualified Rigger will be used to rig loads to the crane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A copy of the crane’s annual certification has been submitted to Haselden Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator agrees to comply with OSHA, ANSI and Haselden Construction safety rules and regulations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haselden Construction &amp; Operator agree Operator has the right to refuse to any load for safety reasons</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CRANE STARTUP COMPLETION SIGNATURES</th>
</tr>
</thead>
</table>

Both Haselden Construction and the Crane Operator agree the above documented information is accurate:

<table>
<thead>
<tr>
<th>Signature of HC Representative</th>
<th>Date</th>
<th>Signature of Crane Operator</th>
<th>Date</th>
</tr>
</thead>
</table>
## NON CRITICAL LIFT PLAN

<table>
<thead>
<tr>
<th>Jobsite:</th>
<th>Crane Operator:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor:</td>
<td>Date:</td>
</tr>
<tr>
<td>Crane Make and Model:</td>
<td></td>
</tr>
<tr>
<td>Location of Lift:</td>
<td></td>
</tr>
</tbody>
</table>

- **a.** What is the load’s weight?
- **b.** What is the total weight of all anticipated rigging (ball or block, line, spreaders, etc.)?
- **c.** Total weight of load and rigging. \((a + b)\)
- **d.** What is the capacity of the crane at the max radius to be used? (using load charts)
- **e.** What is the percentage of capacity to be used? \((c / d)\)

### LIFT SUPERVISOR PRE-LIFT CHECKLIST

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is sufficient clearance for the load at every point along its calculated path</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All rigging inspected by qualified rigger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area clear of personnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All equipment was inspected for safe functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator will use a load moment indicator as a safety backup to check load weights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No utilities under or near crane pad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather conditions are safe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is sufficient clearance of overhead power lines (minimum 20’)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature of Haselden Construction Superintendent | Date | Signature of Crane Operator | Date

**NOTES:**

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
# CRITICAL LIFT PLAN

<table>
<thead>
<tr>
<th>Jobsite:</th>
<th>Crane Operator(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift Supervisor:</td>
<td>Date:</td>
</tr>
<tr>
<td>Crane(s) Involved with Lift:</td>
<td>Qualified Rigger(s):</td>
</tr>
</tbody>
</table>

| Location of Lift: |

Describe load that creates the critical lift:

Rigging to be Used:

| a. What is the load’s weight? |
| b. What is the total weight of all anticipated rigging (ball or block, line, spreaders, etc.)? |
| c. Total weight of load and rigging. \((a + b)\) |
| d. What is the capacity of the crane at the max radius to be used? (using load charts) |
| e. What is the percentage of capacity to be used? \((c / d)\) |

## DIAGRAM OF CRANE(S) AND LOAD PATH

![Diagram of Crane(S) and Load Path](image)

## LIFT SUPERVISOR PRE-LIFT CHECKLIST | YES | NO | N/A
--- | --- | --- | ---
There is sufficient clearance for the load at every point along its calculated path |  |  | 
All rigging inspected by qualified rigger |  |  | 
Area clear of personnel |  |  | 
All equipment was inspected for safe functioning |  |  | 
Operator will use a load moment indicator as a safety backup to check load weights |  |  | 
No utilities under or near crane pad |  |  | 
Weather conditions are safe |  |  | 
There is sufficient clearance of overhead power lines (minimum 20') |  |  | 

Page 1 of 2
CRITICAL LIFT PLAN

Crane configuration: Main Boom ____ ft.   Jib ____ ft.   Angle or Offset ____ degrees

What will the radius, boom angle and capacity be at the beginning and end of the lift?

<table>
<thead>
<tr>
<th>RADIUS</th>
<th>BOOM ANGLE</th>
<th>CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature of Lift/Rigging Supervisor     Date   Signature of Crane Operator     Date

Signature of Subcontractor Project Manager     Date   Signature of Haselden Project Manager     Date

Signature of Haselden Construction Superintendent     Date   Signature Haselden Construction Director of Safety and Health or Designee     Date

NOTES: 
_________________________________________________
_________________________________________________
_________________________________________________
_________________________________________________
HOIST AND RIGGING HAND SIGNALS

EXTEND BOOM

DOG EVERYTHING

TRAVEL

RETRACT BOOM

EXTEND BOOM (ONE HAND)

RETRACT BOOM (ONE HAND)

HOIST

LOWER

USE MAIN HOIST

USE WHIP LINE

RAISE BOOM

LOWER BOOM

MOVE SLOWLY

RAISE THE BOOM & LOWER THE LOAD

LOWER THE BOOM & RAISE THE LOAD

SWING

EMERGENCY STOP

STOP
CRANE OPERATOR EVALUATION

Project Name: Date:

By signature below, I have verified that the crane operator has a current NCCCO certification card, and current DOT medical examination card.

Superintendent: Signature:

CRANE COMPANY INFORMATION

Crane company name: Date of evaluation:

Operator name: Signature:

By signature below, I have evaluated this operator and I confirm that this operator is qualified and has the skills and experience to safely operate this crane in consideration of its size and configuration including (but not limited to) the lifting capacity, boom length any attachments (such as luffing jib), counterweight set up, safety devices, operational aids and software.

Evaluator name: Signature:

CRANE SETUP USED IN THE EVALUATION

Crane make:

Crane model:

Crane configuration:

Crane operator evaluation criteria

OSHA states that the definition of “qualified” in §1926.32 does not apply here. In other words, possession of a certificate or degree cannot, by itself, qualify an operator to operate cranes.

The employer must conduct an evaluation to verify each operator is qualified by a demonstration of:

i. The skills and knowledge necessary to operate the equipment safely, and
ii. The ability to recognize and avert risks associated with the operation.

The skills and knowledge must include those specific to the safety devices, operational aids, and software the crane is equipped with. Most importantly, the evaluation must consider the size and configuration of the crane including (but not limited to) the crane’s lifting capacity, boom length, any attachments (such as a luffing jib), and counterweight set-up.

The evaluation must also cover the operator’s ability to perform the hoisting activities required for the work assigned, including, if applicable, blind lifts, personnel hoisting, and multi-crane lifts.

This document is required as part of the final ruling on OSHA standard subpart CC. This document must be kept for the duration of the project. This document may be substituted for a company’s own documentation provided it contains the equivalent information.
1.0 Purpose

1.1 The Crisis Incident Notification section was included to give the Haselden Construction Site Superintendent the information regarding who needs to be contacted when a serious incident occurs on a job site.

1.2 If there is a death or an incident seriously injuring 1 or more employees, or a catastrophic event, the “Haselden Construction Crisis Workbook” must be followed, in addition to the procedure described in this policy.

2.0 Scope

2.1 If there is an incident where there is a death or one or more employees are injured, the Project Manager, Director of Health and Safety, CEO and the VP of Operations must be notified immediately of the occurrence. All of the above mentioned should be contacted before reporting an incident per the Incident Reporting Guidelines in this Manual.

2.2 OSHA: If there is an incident where there is a death or one or more employees are injured, or there is an amputation or loss of an eye, the Director of Health and Safety or his or her designee must contact the local OSHA office within 8 hours.

3.0 Definitions

4.0 Reference Documents

4.1 Haselden Construction Contact persons: Director of Health and Safety, VP Marketing, Chief Executive Officer. (Phone # 303-751-1478)

4.2 Occupational Safety and Health Administration (OSHA),

4.3 Code of Federal Regulations (CCFR), 29, 1910 and 1926.

4.4 Haselden Construction “Crisis Workbook”.

5.0 Responsibilities

6.0 Implementation

7.0 Attachments:

7.1 Crisis Workbook
Warning: Confidential information is contained in this plan. Legal action will be taken in the event of any intentional misuse or public disclosure of information contained herein.
## INDEX

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<th>Page</th>
</tr>
</thead>
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<td>Crisis Council Action Steps Checklist</td>
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<td>Guidelines before Communicating</td>
<td>6</td>
</tr>
<tr>
<td>Primary Crisis Contact List</td>
<td>6</td>
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<td>Press Inquiry Log</td>
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<td>Media Relations Checklist</td>
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<td>Statements to Press and Public by HC Employees</td>
<td>9</td>
</tr>
</tbody>
</table>
CRISIS NOTIFICATION SHEET
(Crisis Information Report to VP of Marketing)

Name and Title of Caller ______________________________________________________

Phone ________________________________________________________________

Location ______________________________________________________________

Call taken by ________________________________ at ________am/pm

What is the nature of the crisis? __________________________________________

______________________________________________________________

Where did the crisis occur? _____________________________________________

What action was taken? ________________________________________________

______________________________________________________________

When did you first learn of the crisis? ____________________________________

What is the extent of the damage? ______________________________________

______________________________________________________________

How many people are involved? ________________________________________

Injuries or deaths? ________________________________________________

Who have you contacted? ____________________________________________

What was the probable cause? _________________________________________

Estimated dollar loss? ____________________________________________

Are there any ongoing issues? _______________________________________

Were there any arrests? ____________________________________________
CRISIS ACTION STEPS CHECKLIST

1) The following are guidelines for your reference to determine if the incident falls into the crisis category and must be reported to VP of Marketing:

- Is there loss of life?
- Does the site/property damage affect the project?
- Has a national disaster affected the project?
- Has there been a serious criminal incident?
- Has there been an environmental incident involving a regulatory agency?
- Is the incident potentially financially damaging to the company?
- Is the Company’s reputation potentially affected?
- Is big city or national press calling?
- Is there potential that the situation will escalate?
- In your judgment, could this incident become a crisis?

A “yes” answer on any of the above should be immediately referred to VP of Marketing.

2) If you are dealing with crisis conditions, do not make media contact until approved by VP of Marketing.

3) If media contact cannot be avoided, refer all requests for information to VP of Marketing. (Do not say we have no comment at this time.)

4) On Site Action

   a) 911 or emergency personnel contacted by Project Superintendent or jobsite employee
b) Project Superintendent to immediately report incident via phone to Director of Environmental, Safety and Quality and Vice President of Marketing.

c) Project Superintendent, Director of Environmental, Safety and Quality and Vice President of Marketing hold conference call (on the emergency conference bridge) to establish the initial facts and complete the On-Site Checklist. Checklist will determine the severity of the situation.

d) Director of Environmental, Safety and Quality to contact Chief Executive Officer with briefing and report to jobsite.

e) Project Superintendent to secure jobsite, direct workers to designated muster spot, and attend to accident and/or victim(s).

f) All jobsite employees to remain in muster spot or evacuation area during crisis management. Pre-Drafted Messages will be reviewed should employees be approached by a member of the media or general public.

g) Director of Environmental, Safety and Quality (and Chief Executive Officer, if necessary) on-site to further assist in securing jobsite and managing the media.
GUIDELINES BEFORE COMMUNICATING

- NO media contact made until VP of Marketing approves.

- Any questions contact VP of Marketing; If he is not available, contact Director of Environmental, Safety and Quality.

PRIMARY CRISIS CONTACT LIST

1. Emergency Assistance: 9-1-1
   Non-Emergency Assistance: 720.913.2000

2. Rick Reubelt
   Director of Environmental, Safety and Quality Mobile: 720.341.7943
   rickreubelt@haselden.com

3. JJ Rams
   Vice President of Marketing Mobile: 303.728.3719
   jjrams@haselden.com

4. Emergency Conference Bridge Call-in Number: 877.467.3012
   Participant Code: 75351222
## CRISIS PRESS INQUIRY LOG

<table>
<thead>
<tr>
<th>Reporter</th>
<th>Telephone</th>
<th>Question</th>
<th>Follow-up</th>
<th>Time of Call</th>
</tr>
</thead>
</table>

**DATE_____**
MEDIA RELATIONS CHECKLIST

1. **One spokesperson** will speak formally for your location. (This is VP of Marketing or his designee). Emphasis should, whenever possible, be on the positive.

2. **Press Relations** – Coordination of press requests, etc. will be handled by the spokesperson. All calls from the press should be directed to the spokesperson. All press calls should be returned promptly.

3. **Only the Facts** – A fact sheet of statements should be composed for the spokesperson by VP of Marketing, or his appointed spokesperson. (Note: Inaccurate, false or misleading statements can not only damage the Company, but can also cause people to take inappropriate actions… causing additional problems for the Company.)

4. **No Speculation** – Under no circumstances should the spokesperson speculate. Stick to the fact sheet and what is known until a full investigation has been completed. The Company’s credibility is at stake.

5. **Information Flow** – The spokesperson should ask reporters if they have been in touch with any local or state officials or investigators, and if they have learned anything from them.

6. **Press Clippings** – If the crisis warrants it, a press clipping service should be retained so that the company can monitor coverage.

7. **Photographs** – Pre and post-crisis photographs should be considered for release.

8. **Documents** – The Crisis Communication Team needs to decide what material will be made available to the press. (E.g. crisis fact sheet, biographies, annual report, etc.)

9. **Legal, Medical & Financial Questions** – Decline commenting, unless credible information lessens the severity of the crisis. Professional questions are best answered by professionals. Refer them to the hospital, lawyers or bankers.

HASELDEN EMPLOYEE STATEMENTS
• If you are working on a jobsite and a member of the media approaches you to ask about an incident, the following messages may be given:

• “I’m sorry but I cannot provide you with any information about the recent incident [or situation, accident, issue, etc]. A Haselden Construction spokesperson will be here shortly and will be available to answer your questions. For your safety, please wait in the designated media area until they arrive.”

• *If necessary, show the member of the media to the designated waiting area on your jobsite.

• *If email from the media is received, please forward to JJ Rams and Philosophy Communication immediately: jjrams@haselden.com and jmiller@philosophycommunication.com.

• For more information please contact Haselden Construction’s media relations department at 303.751.1478.
1.0 Purpose

1.1 Purpose of “DEFECTIVE – DO NOT USE” WARNING TAGS.

1.1.1 Defective – Do Not Use” warning tags will be used to identify tools and equipment that must be removed from service because of defects, damage or lack of inspection will be returned to a tool room or central location for repair, inspection or disposal.

1.1.1.1 Any equipment, tools, and material that does not meet safe use criteria.

1.1.2 “Defective – Do Not Use” warning tags will NOT be used:

1.1.2.1 For Lock out/tag out (LOTO)

1.1.2.2 As a substitute for the LOTO “Danger - Do Not Operate” tag

1.1.2.3 As an “information” tag or,

1.1.2.4 For or any other purpose other than described in this procedure.

2.0 Scope

2.1 This procedure describes the intent of a “Defective – Do Not Use” warning tag.

2.2 This program applies to all Haselden projects.

3.0 Definitions

3.1 "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

4.0 Reference Documents

4.1 29 CFR 1910.145 - Specifications For Accident Prevention Signs and Tags

4.2 OSHA Worker Safety Series/Publication 3252 – Construction
4.3 SHA Publication 3075 – Controlling Electrical Hazards
4.4 29 CFR 1926.350 - Gas Welding and Cutting
4.5 OSHA Outreach Program - Training Requirements/ Construction Industry Standards
4.6 HASELDEN Welding, Torch Cutting, Soldering, Brazing
4.7 HASELDEN Abrasive Blasting

5.0 Responsibilities

5.1 Superintendents – to manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 General Requirements

6.1.1 Haselden Management and its Subcontractors:

6.1.1.1 Will use “Defective – Do Not Use” warning tags as required by this procedure.

6.1.1.2 Are responsible for supplying “Defective – Do Not Use” warning tags.

6.1.2 “Defective – Do Not Use” warning tags will be:

6.1.2.1 Similar to the example in Attachment 1.

6.1.2.2 Dated and signed by the employee placing the tag and will identify the defect, if known.

6.1.2.3 Securely attached to the equipment, tool or material using a plastic tie or other durable material;

6.1.3 The equipment, tool or material shall not be used until the deficiency is corrected.

6.1.4 Once equipment, tool or material is repaired or inspected, a competent person shall remove the ‘Defective – Do Not Use warning tag.

7.0 Attachments:

7.1 Defective/Damage Equipment, Tools And Devices: “DO NOT USE” Warning Tags
Attachment 7.1
Defective Tag Example

**NOTE:** Identify on the tag (front or back) the reasons of installing the tag.
Haselden Construction Safety Program

Subject: Delivery Truck Loading And Unloading

Approved By: Safety Department

Date: 1/15/2018

1.0 Purpose

1.1 This procedure identifies delivery truck drivers and site personnel responsibilities during the loading or unloading of vehicles. The intent is to minimize the risk of injury during loading and unloading activities. This procedure does not cover the use of specialize equipment that may be required to load and unload trucks, such as fork lifts and cranes.

2.0 Scope

2.1 This procedure applies to all delivery loading and offloading on all Haselden construction sites and related activities.

3.0 Definitions

N/A

4.0 Reference Documents

4.1 OSHA eTool – Delivery Truck Ergonomics
4.2 HASELDEN Crane Program
4.3 HASELDEN Forklift Policy
4.4 HC Rigging Policy

5.0 Responsibilities

5.1 Superintendents – to manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 Receiving Deliveries

6.1.1 If a trailer will be detached from the truck tractor, suitable load bearing material must be used under the trailer dolly to ensure that it does not sink into dirt, gravel or other soft areas.
6.1.2 After Hour or Holiday Deliveries

6.1.2.1 Subcontractors must obtain approval from Haselden Management before scheduling after hour, weekend or holiday deliveries.

6.1.2.2 Request for such deliveries will be made several days in advance to ensure access to the site will be available.

6.1.2.3 If the subcontractor’s request is approved, the following information shall be provided to the Haselden Superintendent:

   6.1.2.3.1 The company and driver name.
   6.1.2.3.2 The expected day and time of arrival.
   6.1.2.3.3 The equipment or material being delivered.

6.2 Loading and Unloading Accountability And Responsibility

6.2.1 The subcontractor expecting a delivery is accountable for the safe loading/unloading of the delivery vehicle; therefore, the loading or unloading will be under the direct supervision of the contractor requesting the delivery.

6.2.2 Subcontractor shall check delivery equipment for leaks and take measures to contain and clean up fluid spills.

6.2.3 Subcontractor shall properly dispose of all packaging, dunnage and debris.

6.2.4 Employees not involved in the activity will remain clear of the delivery operation.

6.2.5 Ensure that the delivery vehicle is properly prepared for loading or unloading:

   6.2.5.1.1 Doors or tailgates open and secured,
   6.2.5.1.2 Wheels chocked,
   6.2.5.1.3 Fifth wheel supported and,
   6.2.5.1.4 Load binders removed.

**NOTE:** The unloading supervisor will inspect the load for potential for movement before load binders are removed.

6.2.6 If vehicle making delivery or vehicle to be loaded is a boom truck, and the boom is to be used, the unloading supervisor must ensure that the boom truck is operated in accordance with the Haselden Crane Policy.

6.3 Personal Protective Equipment

6.3.1 Site personnel will ensure vehicle drivers have and wear the required PPE before exiting the cab of the vehicle:
6.3.1.1 The minimum PPE for exiting the vehicle in the construction area is:

6.3.1.1.1 Hardhat.
6.3.1.1.2 Safety glasses with side-shields.
6.3.1.1.3 Long pants.
6.3.1.1.4 Shirts, with a sleeve; short sleeves are acceptable.
6.3.1.1.5 ANSI Type II vest

6.3.1.2 While loosening chain binders and other non-ratchet type binders, the vehicle driver must wear leather gloves or equivalent hand protection.

6.4 Miscellaneous

6.4.1 A straight ladder, an A frame ladder, a stair, rolling platform ladder or work platform is required for access onto elevated truck beds or trailers. Ladder must be secured or held in place during use. If not tied off, and when not in use, the ladder must be laid down.

6.4.2 Climbing the crash bar or climbing on tires or wheels to access the trailer is prohibited.

6.4.3 Tag lines must be used to control all loads.

6.4.4 Personnel will not remain in the trailer or on the bed of a truck or truck trailer while the load is being moved.

7.0 Attachments:
1.0 Purpose

To assist project teams with identifying and controlling hazards related to demolition work in order to effectively maintain the safety and health of Haselden employees and our subcontractors.

2.0 Scope

This procedure applies to all Haselden projects and related work.

3.0 Definitions

3.1 **Biohazard:** Infectious agents presenting a risk or potential risk to the well-being of people or animals, either directly through infection or indirectly through disruption of the environment.

3.2 **Rapid Progressive Failure:** Means a method of demolition in which key structural elements are removed or destroyed, causing rapid, complete collapse of the whole structure being demolished.

3.3 **Systematic Demolition:** Means methodical dismantling of a total structure, piece by piece. It is usually carried out in reverse order of construction.

4.0 Reference Documents

4.1 29 CFR 1926 Subpart T
4.2 HC Infection Control Policy
4.3 HC Asbestos Awareness Program
4.4 HC Abrasive Blasting
4.5 HC Hazardous Energy Control Program
4.6 HC Lead program
4.7 HC Respirable Silica Hazard Control Policy
4.8 HC Respiratory Protection Program
4.9 HC Fall Protection Policy

5.0 Responsibilities

5.1 **Site Superintendent(s):**

5.1.1 Manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontractors’ work.

6.0 Implementation
6.1 **Historical Construction Data**

6.1.1 Examine as-built drawings if available.

6.2 **Communication Systems**

6.2.1 Establishing and maintaining an effective communications system during demolition activities is crucial to the safety, control, and success of the project. Communication consideration should also include emergency contingency operations and a backup system.

6.3 **Examination of Existing Structures**

6.3.1 If demolition may affect the load bearing components of the structure or in any adjacent structure where employees may be exposed, an engineering survey must be undertaken to determine the type of construction, condition of the structure, overall site conditions and possibility of unplanned collapse of any part of the structure. The following items should be included in the structural review:

6.3.1.1 The effect of the removal of any part or parts of any structure.

6.3.1.2 Examine walls to determine if they are load-bearing or if they act as ties or braces to other parts of a structure.

6.3.1.3 Check floors and supporting structures to determine if they act as diaphragms or in any way provide support to other parts of the structure.

6.3.1.4 Examine the structure to determine if it is suspended from another structure.

6.3.1.5 The stability of any cantilevered construction.

6.3.1.6 The effects of soil, water, and other lateral pressures on retaining and foundation walls resulting from the demolition of other elements.

6.3.1.7 The existence of pre-stressed elements and the required sequence of de-tensioning.

6.3.1.8 Inspect damaged or deteriorated structures to determine strength and stability.

6.3.1.9 All vessels and piping are to be examined for hazardous chemicals prior to any demolition.

6.3.1.10 Infection Control Risk Assessment. For healthcare and/or medical facility demolitions, require a review of the ICRA provided by the owner or owner’s representative.

6.4 **Third Party Support**
6.4.1 Due to the regulatory requirements and the complexity of some demolition projects, third party support from specialists, experts, consultants and/or agencies may be necessary during the planning and execution phases. These may include:

6.4.1.1 Regulatory agencies
6.4.1.2 Certified Industrial Hygienists (CIH)
6.4.1.3 Legal personnel
6.4.1.4 Engineering
6.4.1.5 Environmental experts
6.4.1.6 Computer specialists
6.4.1.7 Utilities personnel
6.4.1.8 Fire department
6.4.1.9 Medical personnel/facilities
6.4.1.10 Communication specialist
6.4.1.11 Transportation
6.4.1.12 Service personnel for equipment
6.4.1.13 Enforcement agencies
6.4.1.14 Testing laboratories

6.5 Permit and Notices

6.5.1 Review any permit or notice requirements.

6.6 Security

6.6.1 Security may be required for the safety of employees and the public.

6.6.2 Protection of equipment, tools, machinery, and vehicles against vandalism or theft must be evaluated.

6.6.3 Access to scaffolds, ladders, equipment, and materials shall not be left accessible to the public. Other considerations include:

6.6.3.1 Protection for pedestrian thoroughfare utilizing enclosures and sidewalk sheds

6.6.3.2 Catch platforms
6.6.3.3 Special lighting

6.6.3.4 Security personnel

6.6.3.5 Control stations for signing in and out complete with temporary security badges or cards

6.6.3.6 Special signs

6.6.3.7 Traffic control

6.7 Insurance

6.7.1 Due to the complexities of demolition activities, insurance coverage of all stakeholders shall be closely examined. In some cases, it may be necessary to obtain extra or special insurance depending on project needs. In any case, this shall be considered a priority item during the bidding and planning stages of a project.

6.8 Contaminants and Hazardous Materials

6.8.1 A survey of all demolition work areas shall be conducted to determine the presence of any contaminants or hazardous materials. These may include:

6.8.1.1 Bio-hazards

6.8.1.2 PCBs from fluorescent light fixtures or transformer equipment

6.8.1.3 Freon from cooling equipment

6.8.1.4 Rust inhibitors/antifreeze in piping systems

6.8.1.5 Asbestos residuals or missed abatement

6.8.1.6 Mercury from control actuators or fixtures

6.8.1.7 Silica dust

6.8.1.8 Carbon monoxide from gas-powered equipment or vehicles

6.8.1.9 Combustible dust

6.8.1.10 Slag from carbon steel pipe or steel removal using cut-off torches

6.8.1.11 Halon (used for fire suppression)

6.8.1.12 Lead

6.8.1.13 Other miscellaneous materials which may be:

6.8.1.13.1 Explosive
6.8.1.13.2 Poisonous
6.8.1.13.3 Flammable
6.8.1.13.4 Toxic
6.8.1.13.5 Corrosive bottled gases
6.8.1.13.6 Radioactive materials, or
6.8.1.13.7 Oxidizing agents

6.9 Utilities and Services

6.9.1 Underground and overhead utilities and services shall be identified, properly marked, protected, and supported during demolition activities. These may include:

6.9.1.1 Electrical power distribution lines
6.9.1.2 Gas mains and transmission lines
6.9.1.3 Oil pipelines
6.9.1.4 Telephone cables
6.9.1.5 Water mains and/or distribution lines
6.9.1.6 Drainage piping (storm and sanitary)
6.9.1.7 Steam/hot water distribution system, or
6.9.1.8 Communications cables

6.9.2 Services not found during the initial survey, but found after work commencement, shall be investigated before demolition activities continue.

6.9.3 Advice and assistance will be sought from city, municipal, and/or county authorities, and utility companies in locating and marking services entering, passing under, through, or adjacent to the structure.

6.9.4 Temporary services will be provided and maintained in accordance with the requirements of the local authorities, fire departments, utility companies and others having jurisdiction.

6.10 Waste Management

6.10.1 The scope of work should be analyzed to determine whether hazardous waste will be generated or found, and a plan shall be prepared to meet all legal and disposal requirements.
6.10.2 Waste management may include waste recovery, reduction, reuse, and recycling.

6.11 Existing Facilities

6.11.1 When the scope of work requires partial demolition of a structure that must be occupied and kept in operation, safety procedures for maintaining the following functions shall be planned.

6.11.1.1 Heating, ventilation, and air conditioning
6.11.1.2 Dust control
6.11.1.3 Noise abatement/control
6.11.1.4 Traffic control and parking
6.11.1.5 Utilities
6.11.1.6 Communications system
6.11.1.7 Pedestrian traffic
6.11.1.8 Emergency evacuation and responses
6.11.1.9 Security alarm system
6.11.1.10 Fire suppression system
6.11.1.11 Computer network system

6.12 Air Quality

6.12.1 Refer to HC Asbestos Awareness Program, HC Lead Program, HC Infection Control, HC Respirable Silica Hazard Control Policy and HC Respiratory Protection Program if airborne and respiratory hazards are anticipated or encountered.

6.12.2 Before respiratory protection is worn, feasible engineering controls shall be used to eliminate or reduce the respiratory hazard to levels that are below the PEL.

6.12.3 If feasible engineering controls do not reduce the level of respiratory hazards below the PEL, respiratory protection is required in accordance with 29 CFR 1910.134. A written respiratory protection program, medical evaluation, fit testing and employee training are required.

6.12.4 When required, air monitoring and sampling must be conducted under the direction and supervision of a Certified Industrial Hygienist.

6.13 Miscellaneous Considerations
6.13.1 This section identifies a variety of items that may apply to a demolition project

6.13.1.1 Traffic logistics. This review shall consist of:

6.13.1.1.1 Turning radius requirement for long and wide loads

6.13.1.1.2 Control for parking, storage, staging, deliveries, pick-ups and patterns of on-site traffic flow

6.13.1.1.3 Security check points

6.13.1.1.4 Phasing

6.13.2 Excavation Data – before excavation is begun;

6.13.2.1 Locate underground services and utilities

6.13.2.2 Locate other known concealed items, (i.e. tanks, support structures, abandoned utilities and service systems)

6.13.3 Control of Hazardous Energy

6.13.3.1 Hazardous energy control requirements must be closely reviewed. Hazardous energy control must be planned by all stakeholders, including all entities who have affected employees.

6.13.3.2 Refer to the Haselden Hazardous Energy Control Program.

6.13.4 Temperature Control and Ventilation

6.13.4.1 Adequate temperature control and ventilation shall be required for the productivity, safety and health of employees.

6.13.5 Phasing and Restricted Work Areas

6.13.5.1 Workers shall be prevented from working in areas where overhead and falling object hazards exist. Refer to HC Fall Protection Policy, Falling Object Protection

6.13.6 Access to the Work

6.13.6.1 Scaffolding, man lifts and work platforms shall be designed to support, without failure, the loads imposed on them, in accordance with OSHA requirements.

6.13.7 Fire Suppression Systems

6.13.7.1 If fire suppression systems must be worked on and shut down, arrangements shall be made for interim firefighting capabilities to meet insurance requirements. Additionally, fire
extinguishers shall be made available for extra machinery and equipment during demolition and restoration activities.

6.13.8 Overhead Power Lines

6.13.8.1 Examine access roads to confirm that there is proper clearance below overhead power lines.

6.13.9 Traffic Control/Load Checks

6.13.9.1 Traffic control may be required where project roadway leaves premises and merges with a busy street or highway.

6.13.9.2 Load checks shall be made on loads leaving the site to see that they are properly secured and covered if required.

7.0 Attachments:

7.1 N/A
1.0 Purpose

1.1 This document describes the policy for drilling piles, piers, caissons, and tiebacks as it relates to all Haselden Construction projects, for Haselden Construction employees and all associated subcontractors and support organizations.

2.0 Scope

2.1 These procedures outline the minimum requirements for drilling piles, piers, and shafts into the ground to provide support of structures. It addresses safe use of powered augers and other methods that may be used for deep foundation installation.

2.2 These procedures do not cover the work required to identify and locate underground installations and interferences, or the permitting requirements associated with making ground penetrations. Refer to the Haselden safety procedures on excavation, trenching and permitting for the requirements associated with locating underground installations or interferences.

3.0 Definitions

3.1 **Apron**: A horizontal structure connecting the bottom of the lead to the crane carriage.

3.2 **Construction/Power Auger**: A powered device used for drilling holes into foundations.

3.3 **Feasible**: Capable of being done or carried out because methods have been developed or technology is commercially available, and use of the method or technology does not create a greater hazard.

3.4 **Fixed Lead**: A lead connected to a crane at two points; at the boom point and at the crane carriage.

3.5 **Lead – Frame**: A structure used to guide the hammer or auger.

3.6 **Piling Equipment**: Equipment used to place foundation piles, sheet piles, etc., such as cranes with related attachments including pile drivers, vibrating hammers, and rotary boring equipment.

3.7 **Qualified Inspector**: A contractor, employee, or engineer acceptable to Haselden, who by possession of a recognized degree, certificate, or professional
standing, or who by extensive knowledge, training and experience has successfully demonstrated the ability to inspect equipment used for drilled foundations.

3.8 **Qualified Operator:** An experienced employee who has received training and has demonstrated competency to operate a specific piece of equipment.

### 4.0 Reference Documents

4.1 OSHA Safety and Health Information Bulletin-Hazards of Auger Drilling
4.2 OSHA 29 CFR 1926.603 Pile Driving Equipment
4.3 OSHA 29 CFR 1926.1400 Subpart CC Cranes and Derricks in Construction. See especially paragraph 1439.
4.4 HC Excavation and Trenching policy
4.5 HC Crane Policy
4.6 HC Spill Response Plan
4.7 HC Erosion and Storm Water Control Procedure.

### 5.0 Responsibilities

5.1 **Site Superintendent(s):**

5.1.1 Manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

### 6.0 Implementation

6.1 **Equipment Inspection**

6.1.1 All equipment used to bore holes for foundations or set pre-fabricated foundations (fixed or swing lead system, powered auger, etc.) will be inspected upon arrival at each project by the subcontractor’s Qualified Inspector.

6.1.2 Initial and monthly inspections of equipment, cranes, trucks, drivers, etc. will:

6.1.2.1 Comply with Haselden Construction’s Crane Policy requirements.

6.1.2.2 Be formally inspected by a Qualified Inspector monthly with findings documented and maintained on site.

6.1.2.3 Be in accordance with the manufacturer’s recommendations.

6.1.3 Equipment operator will conduct daily inspections of the equipment and attachments at the start of each shift and document findings.
6.1.4 Daily inspection shall be in compliance with the manufacturer’s requirements.

6.1.4.1 A copy of the equipment operator’s manual shall be available on site for all equipment and attachments.

6.1.4.2 All hose connections, including air hammer hoses and steam lines, that lead to the hammer are securely attached to the hammer using at least 1/4” diameter chain or cable to prevent line from whipping in the event the joint at the hammer breaks.

6.1.4.3 Hydraulic hammer hoses that are under pressure will be checked for leaks and deterioration due to heat.

6.1.4.4 Fixed ladders are secured and free of defects.

6.1.4.5 Defective components will be tagged “defective” and removed from service until repaired.

6.1.4.6 Daily inspection will be documented on a checklist.

6.2 Operator Qualifications

6.2.1 If the drilled foundation equipment uses a crane, the crane operator must be certified by the (NCCCO) National Commission for the Certification of Crane Operators, NCCER, (National Center for Construction Education and Research), Crane Institute of America (CIC), the Operating Engineers Certification Program (OECP), qualified by an audited employer program or certified by an accredited crane operator testing organization in accordance with OSHA requirements listed in 29 CFR 1926.1427. Certifications must be current to operate any crane.

6.2.2 The operator’s certificate must state the type and capacity of equipment for which the operator is certified.

6.2.3 Operator certification includes a current DOT medical card.

6.2.4 Only trained Operators may operate leads, hammers, augers and vibrators.

6.2.5 Subcontractor will have training programs associated with the operation of each type of equipment and will provide proof that each Operator is properly qualified to Haselden Construction upon request.

6.3 Equipment Requirements

6.3.1 Overhead protection that does not interfere with the operator’s vision must be provided.

6.3.2 Drilling equipment attachments will be operated and maintained in accordance with manufacturer’s recommendations. A copy of the
manufacturer’s operating and maintenance manuals will accompany all drilling equipment and related attachments.

6.3.3 Provisions will be made to allow for general maintenance of the leads and top sheaves from ground level.

6.3.4 Boom stops will be provided to prevent the leads from being pulled past “top dead center” towards the operator’s cab.

6.3.5 Guards will be provided across the top of the head block to prevent the cable from jumping out of the sheaves.

6.3.6 A ladder shall be attached to the leads for access to elevated locations.

6.3.7 Elevated work locations will be equipped with standard handrails and secure points for safety harness attachment.

6.3.8 Guys, outriggers, thrust-outs, or counter balances will be used to stabilize the pile driving rig as needed.

6.3.9 Equipment fueling and general maintenance:

6.3.9.1 Equipment will be shut down and allowed to cool for at least 10 minutes before refueling. During refueling, equipment will be grounded.

6.3.9.2 A 10-pound class “ABC” fire extinguisher must be available during refueling.

6.3.9.3 Hydraulic, fuel and cooling systems must be maintained to prevent leakage.

6.3.9.4 Spills must be contained, cleaned up and communicated immediately in accordance with Haselden Construction Environmental requirements and governmental regulations.

6.3.10 Hoses supplying power to an auger or vibrator are commonly routed up the crane boom or lead and are subject to separating during operation:

6.3.10.1 Secure each hose from a location on the hose approximately 12 inches from the coupler to an independent point (on the boom or lead) in a manner that will restrain the hose if it separates.

6.3.10.2 Lines supplying hydraulic power to the high-pressure equipment will be equipped with quick-acting, single action shut-off valves.

6.4 Work Practices

6.4.1 Fall Protection:

6.4.1.1 Personnel accessing elevated areas 6 feet or greater will be protected from falling at all times by means such as PFAS and a properly installed retractable lifeline. This includes falls less than
6 feet where personnel could fall into moving parts or other dangerous locations.

6.4.1.2 Continuous positive fall protection, such as a lifeline, a rope grab, or complete standard guardrails, must be used when a person is on a vertical lead or apron.

6.4.1.3 Eliminate the need for personnel to occupy the top of a pile by using feasible means such as mechanical pile threaders and remote release shackles.

6.4.1.4 Scaffolds and aerial work platforms shall be used for access to elevated work locations when feasible.

6.4.1.5 A written plan must be submitted to the Haselden project management team for any work requiring personnel to occupy the top of a pile.

6.4.1.6 If an employee is required to climb the driving lead, the equipment operator will apply brakes and necessary safety switches to ensure no uncontrolled motion of the equipment.

6.4.1.7 A safe zone will be established and maintained throughout the pile driving operation:

6.4.1.7.1 The safe zone/area will be 1-1/2 times the height of the leads.

6.4.1.7.2 The area will be barricaded and maintained free of all personnel not directly involved in the pile driving operation.

6.4.1.7.3 Only personnel essential to the operation are allowed within a radius equal to the undriven length of the pile being installed plus 10 feet.

6.4.1.7.4 Employees assigned to the pile driving operation will stand clear of the operation while the driving is in process.

6.4.1.7.5 The emergency shut-off valve and the crane winch controls must be manned at all times during driving.

6.4.1.8 Piles or sheet piling stored on the ground will be supported by blocking. Pipe piling must be stacked in well supported and braced in racks or frames unless provisions are made to prevent their movement.

6.4.2 Drilled Holes

6.4.2.1 The area within 6 feet of a hole being drilled or an open drilled hole is designated as a “restricted area.”
6.4.2.2 Personnel shall not approach the hole unless they are authorized and have been trained in the JHA for the activity.

6.4.2.3 All Holes greater than 6’ in depth and wider than 19” in diameter are a fall hazard and anyone approaching within 6 feet of the hole for any reason must use proper fall protection.

6.4.2.4 Holes deeper than 6 feet shall be covered with a cover that will support twice the intended load of workers or equipment when left unattended. The cover must be staked to prevent displacement and marked as a “Hole”.

6.4.2.5 Fall protection may be a standard guardrail or equivalent, including a casing that extends at least 39” above the walking/working surface; or a Personal Fall Arrest System (PFAS) that includes anchorage in compliance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M.

6.4.2.6 Drill rigs parked on a slope shall have the wheels blocked.

6.4.2.7 The swing radius of drill rigs shall be barricaded.

6.4.2.8 Employees shall approach the drilling equipment by first making eye contact with the operator and staying clear of blind spots.

6.4.2.9 Qualified riggers shall be used to rig rebar cages.

6.4.2.10 Employees setting rebar cages shall sound a horn or whistle before the lift is made.

6.4.2.11 All employees who are not involved in setting the cage shall remove themselves from the area of the hoisting operation by a distance equal to the length of the rebar cage plus 10 feet.

6.5 Additional Potential Hazards

6.5.1 Potential overhead hazards:

6.5.1.1 The potential for overhead hazards will be evaluated and a plan developed to eliminate/minimize employee exposure.

6.5.1.2 No part of the pile driving equipment may be operated within 15 feet of any electrical hazard without permission from the electrical provider and Haselden Construction.

6.5.1.3 The effects of vibration may have on adjacent work areas will be evaluated by the subcontractor, and information shall be presented to Haselden supervision.

6.5.1.4 Method of removal and disposal of spoiled soil will be reviewed and approved by the Haselden project team and will be in accordance to local, state, and federal laws.
6.5.1.5 Personnel must avoid skin contact with piles coated or treated with chemicals.

6.5.1.6 Drilling water, mud, grout, concrete spoils, and other contaminants must be prevented from leaving the site or entering the storm water drainage system. See the HC Erosion and Storm Water Control Procedure.

6.6 Pile Extraction

6.6.1 Permission from the onsite Haselden Superintendent is required prior to pile extraction.

6.6.1.1 No attempt will be made to extract piles which have been hammer-driven by lifting or booming up with a crane.

6.6.1.2 A steam, air, or electric operated vibratory extractor will be used.

6.6.1.3 All extraction holes, rejected, abandoned, and damaged shell pipes and piles will be filled with suitable material, such as a flowable fill, approved by the Haselden Construction management team and the Geotechnical Engineer of Record.

7.0 Attachments

7.1 N/A
1.0 Purpose

1.1 To establish guidelines for compliance with the OSHA standards for Earth Moving equipment to reduce or eliminate earth moving equipment hazards.

2.0 Scope

2.1 This procedure provides minimum requirements for inspection, operation, and operator qualifications for earth moving equipment. This program applies to Haselden and subcontractor earth moving equipment and operators.

3.0 Definitions

3.1 Competent Person – A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.2 Earth Moving Equipment - Self-propelled mobile equipment such as, but not limited to, scrapers, front end loaders, crawlers, wheel tractors, excavators, bulldozers, off-highway trucks, dump trucks, scrapers, graders, compactors, and other like equipment, with or without attachments, that are used in construction.

3.3 Qualified Inspector – An employee acceptable to Haselden, who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to inspect equipment.

3.4 Qualified Operator – An experienced person who has received training and demonstrated competency to operate a specific piece of earth-moving equipment and who has been qualified to operate the equipment by their employer.

4.0 Reference Documents

4.1 29 CFR 1926.602 - Material Handling Equipment

4.2 OSHA Safety & Health Bulletin- The Unintended Movement of Dump Truck Body Beds
4.3 OSHA Safety & Health Bulletin-Hazards Associated w/Operating Skid-Steer Loaders w/Bypassed and/or Improperly Maintained Safety Devices

4.4 OSHA Safety & Health Bulletin - Hazards of Inadequately Securing Hydraulic Excavator

4.5 HASELDEN Hazardous Energy Control Procedure

4.6 HASELDEN Respirable Silica Hazard Control Policy

4.7 HASELDEN Competent Person Policy

5.0 Responsibilities

5.1 Superintendents – manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 Operator Qualifications

6.1.1 Only qualified operators can operate earth-moving equipment. Haselden and its Subcontractors must develop and implement a training program for qualification of operators.

6.1.2 Training and qualification must be:

6.1.2.1 Specific to the equipment used.
6.1.2.2 Administered by a competent person.
6.1.2.3 Submitted to Haselden management upon request.

6.1.3 Qualified operators must:

6.1.3.1 Be physically and mentally capable to operate the equipment.

6.1.4 Supervisors are not allowed to operate any piece of earth-moving equipment unless they are a qualified operator.

6.2 Equipment Inspection

6.2.1 All pieces of earth-moving equipment (owned or rented) shall receive an initial inspection prior to their use on site. This initial inspection will be performed by a qualified inspector.

6.2.2 The operator must visually inspect the earth moving equipment daily prior to its operation and ensure the equipment is equipped with functional safety equipment as follows:

6.2.2.1 Automatic audible reverse/backup alarm;
6.2.2.1.1 The alarm will have a sound pressure level of 112 dBA +/- 4 dBA at three feet from the rear and rear quarters of the vehicle.

6.2.2.1.2 If alarm is not functioning properly, work shall be stopped or a trained spotter will be used until the alarm is repaired (temporary use only, 2 hours or less).

6.2.2.2 Factory-installed operable seat belt(s);

6.2.2.3 Factory-installed lights if the equipment will be operated after dark or under limited lighting; equipment routinely operated on public roads shall have turn signals and brake lights;

6.2.2.4 OEM pins and safety clips shall be used for attachments and shall be free from defects.

NOTE: Equipment defects or damage will be reported to the earthwork supervisor immediately so steps can be taken to make necessary repairs or replace the equipment.

6.2.3 Glass windows and doors on equipment cabs will be:

6.2.3.1.1 Free of cracks
6.2.3.1.2 Rated safety glass.

6.2.4 All rubber-tired self-propelled mobile equipment, including scrapers, front-end loaders, graders, crawler tractors, dozers, agricultural and/or industrial tractors, etc., will be equipped with rollover protection (ROPS) approved by the equipment manufacturer.

6.2.5 An ABC fire extinguisher shall be mounted on each piece of earth-moving equipment. The extinguisher shall have been serviced within the last 12 months and shall be inspected monthly.

6.3 Earth Moving Equipment Operation

6.3.1 Equipment shall be of suitable type, size and capacity for its particular use, as determined by the competent person. The following are requirements for the safe operation of earth moving equipment:

6.3.1.1 Equipment shall not be operated within 15 feet of any energized overhead electrical lines, cables, or electrical installations or within 5 feet of any buried, marked electrical lines without written authorization from the earth moving superintendent with concurrence from the Haselden Construction Superintendent and the Haselden Safety Department.

6.3.1.2 A spotter will be used whenever:
6.3.1.2.1 Equipment must travel in reverse in a congested area.

6.3.1.2.2 The view to the rear is obstructed.

6.3.1.2.3 Blind spots on the equipment create hazards to employees or property.

6.3.1.2.4 The audible back up alarm in malfunctioning (temporary use only, 2 hours or less).

6.3.1.3 Equipment operator and any passengers will sit in seats equipped with factory-installed seat belts.

6.3.1.4 Tools, personal effects, and similar items will be properly secured within the cab.

6.3.1.5 Material, tools or personal effects that have the potential to interfere with the safe operation of the equipment or to interfere with the equipment’s controls will not be placed in cabs.

6.3.1.6 Any equipment that may cause excessive vibration or superimposed loading near excavations will be re-routed.

6.3.1.7 All engines must be turned off during refueling.

6.3.1.8 Operators will bring equipment to a complete stop to talk on radios or cell phones, including hands-free cell phones.

6.3.1.9 Personnel will not occupy excavator or loader buckets during operation of the equipment.

6.3.1.10 When using tracked equipment on permanent roadway, place protection on paved roads to prevent damage.

6.3.1.11 The parking brake must be set whenever equipment is parked. All blades, buckets, scraper bowls, attachments, etc., will be lowered to the ground.

6.3.1.12 Parked equipment must never block fire lanes or emergency equipment or access.

6.3.1.13 No employee is allowed to rest directly in front, beneath or behind the wheels, bucket, tracks, rollers, blades, rippers, etc., of any piece of heavy equipment.

6.3.1.14 Personnel will not be transported in the bed of any truck unless proper passenger seats and seat belts are provided.

6.4 Excavator (Backhoes/Track-Hoes) Operation

6.4.1 The following guidelines will be used for excavators.
6.4.1.1 When excavators are used to walk or straddle an open trench with the excavator, the equipment operator will:

6.4.1.1.1 Obtain approval and confirmation from the competent person for excavation that the soil is stable enough to support the imposed loads.

6.4.1.1.2 Ensure all personnel have exited the trench before the beginning to walk or straddle trench.

6.4.1.2 When excavators are equipped with outriggers, they will be fully extended and on firm, level bearing.

6.4.1.3 Excavators must not be used for any operations exceeding the manufacturer's recommendations or the capability and capacity of the equipment (e.g. unloading a truck with an excavator boom instead of a crane).

6.4.1.3.1 If the excavator is equipped to hoist or lower by means of a winch or hook and horizontally move a suspended load, with the equipment manufacturer's approval, it is considered a crane and must be used in accordance with Haselden's Crane Policy.

6.4.1.3.2 Manufacturer’s load chart showing load and radius capabilities must be in the excavator.

6.5 Trucks With Dumping Beds

6.5.1 The following are requirements for the safe operation of dump trucks.

6.5.1.1 During loading, the truck driver and passengers:

6.5.1.1.1 May remain the cab of the vehicle if the cab of a dump truck is equipped with vertical and horizontal protection that can withstand the impact of the material being loaded and the material is less than 12 inches in diameter.

6.5.1.1.2 Must exit the vehicle if the cab has insufficient protection or the materials are larger than 12 inches in diameter.

6.5.1.2 When operator and any passenger exit the cab, they must wear personal protective equipment meeting Haselden requirements.

6.5.1.3 Personnel shall be kept clear of the sides of the truck during loading.
6.5.1.4 Dump beds will not be raised for dumping loads when any person or other equipment is within 1 ½ bed lengths from the side of the truck.

6.5.1.5 Dumping of loads will be performed on firm, level, stable, compacted surfaces.

6.5.1.6 Stop-logs or other equally effective means shall be used to prevent trucks from entering excavations.

6.5.1.7 Before and during operation of a dump truck with the bed in the raised position, the operator and supervisor must check overhead clearances for interference during forward and backward movements.

6.5.1.8 Dump trucks shall not be driven with the beds in the raised position except for immediate dumping of loads.

6.5.1.9 Dump trucks shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done. (Positive bed lock)

6.5.1.10 A positive bed lock is required when any work is performed with the bed in a raised position.

6.5.1.11 No one is permitted under an unsecured raised bed for any reason except to engage the bed lock.

6.5.1.12 No one is permitted between the tailgate and a raised bed without the bed lock being engaged.

(Refer to Haselden Hazardous Energy Control Procedure.)

6.6 Motor Graders, Dozers, Scrapers And Loaders

6.6.1 Before moving the equipment from a parked position, the operator shall walk around the machine and check for hazards.

6.6.2 Buckets shall be kept as low as possible when transporting loads.

6.6.3 Skid-steer loaders shall be provided with wrap-around type mirrors that give the operator a clear view of the area behind the machine.

6.6.4 Operators of skid-steer loaders shall only enter and exit the machine in accordance with the manufacturer’s recommendations.

6.7 Maintenance

6.7.1 Equipment must be maintained per manufacturer’s recommendations, requirements, and specifications.
6.7.2 The subcontractors will keep records of all inspections and maintenance on site. These records will be provide to Haselden and governmental agencies upon request.

6.7.3 Modifications and alterations to earth-moving equipment are not permitted without written approval from the manufacturer, or written approval from a registered professional engineer. Approval must be retained on site for inspection.

6.7.4 While performing repairs:

6.7.4.1 A face shield and chemical splash goggles shall be worn while handling or recharging liquid-filled batteries.

6.7.4.2 All raised equipment tool and hydraulic repair work shall be done in a designated location with effective positive means of supporting or positively lock out to prevent collapse

(Refer to Haselden Hazardous Energy Control Procedure)

6.7.4.3 Unless hot work is performed in a designated Hot Work Zone, a Hot Work Permit will be required.

6.8 Environmental Considerations

6.8.1 Hydraulic, cooling and fuel systems must be maintained to prevent leakage.

6.8.2 If a fluid leak occurs, the spill must be cleaned up immediately and reported in accordance with Haselden Spill Response Plan requirements and governmental regulations.

6.8.3 All oily waste shall be removed and properly disposed.

6.8.4 A damp spot on a hose or fitting is not considered a leak; however, a drip to the ground is considered a leak.

6.8.5 Damp spots on hoses and fittings should be considered a potential leak and must be repaired immediately.

6.9 Dust Control

6.9.1 Control dust in accordance with environmental regulations.

6.9.2 Comply with the requirements of 29 CFR 1926.1153 Respirable Crystalline Silica and the HC Respirable Silica Hazard Control Policy.

6.9.3 Dust emissions shall not create a hazard for the public or for employees of other contractors working on the project.
6.9.3.1 For Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials:

6.9.3.1.1 Operate equipment from within an enclosed cab

6.9.3.1.2 When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.

6.9.3.2 For heavy equipment and utility vehicles used for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials:

6.9.3.2.1 Apply water and/or dust suppressants as necessary to minimize dust emissions, or:

6.9.3.2.2 When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab

6.9.3.2.3 For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:

6.9.3.2.3.1 Is maintained as free as practicable from settled dust;

6.9.3.2.3.2 Has door seals and closing mechanisms that work properly;

6.9.3.2.3.3 Has gaskets and seals that are in good condition and working properly;

6.9.3.2.3.4 Is under positive pressure maintained through continuous delivery of fresh air;

6.9.3.2.3.5 Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (e.g., MERV-16 or better); and

6.9.3.2.3.6 Has heating and cooling capabilities.

7.0 Attachments:

7.1 Equipment Inspection Form
EARTH MOVING EQUIPMENT  
DAILY INSPECTION FORM

Equipment Description: __________________________________

Equipment Model: ____________________________ Date: ________________

Company Name: ____________________________

<table>
<thead>
<tr>
<th>INSPECTION ITEMS</th>
<th>CONDITION (Check One)</th>
<th>REMARKS/ COMMENTS</th>
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<tr>
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<td>FAIR</td>
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<td>Operator Manual In Equipment</td>
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<td>Muffler Guards</td>
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<td>Positive Dump Bed Latch</td>
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<td>Rollover Protection</td>
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<td>Side Mirrors (Both)</td>
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<td>Turn Signals</td>
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<td>Steps and Grabs</td>
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NOTE: These items are to be inspected prior to operating the forklift. Immediately report all items in need of service or repair to your supervisor so proper maintenance can be performed. DO NOT OPERATE DEFECTIVE EQUIPMENT!

Inspectors Name: ____________________________  Signature: ____________________________
1.0 Purpose:

1.1 This procedure addresses minimum requirements for the safe use of electrical welding machines, including those that also produce 110/220 volt portable generators, including:

1.1.1 Electrical hazards associated with electrical welding and use of 110/220V power provided by the equipment,

1.1.2 Electrical safety training requirements for welders.

1.2 This procedure does not address:

1.2.1 Fire prevention requirements and permits requirements that are associated with welding operations.

1.2.2 Welding equipment supplying power greater than 220 volts.

2.0 Scope

2.1 This Program applies to all Haselden projects, for work performed by Haselden and their subcontractors.

3.0 Definitions

3.1 **Brazing** - A hot work process whereby metals are joined by heating materials to suitable temperatures above 840°F using a nonferrous filler metal with a melting point below that of the base metal

3.2 **Confined Space:**

3.2.1 A space that is large enough and so configured that an employee can bodily enter and perform assigned work;

3.2.2 Has limited or restricted means for entry or exit (for example, tanks, vessels, coolers, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and

3.2.3 Is not designed for continuous occupancy.
3.3 **Dual-Polarity Welding** – Two or more welding operations occurring simultaneously when the stinger (welding end lead) is positive in at least one instance and negative in at least one other instance.

3.4 **Electric Welding Machine** – Electric welding device powered either by rectifying electrical current or by mechanical means such as a gasoline or diesel engine.

3.5 **Flame-Resistant Material** – Material that burns slowly or is self-extinguishing after the external source of ignition is removed.

3.6 **Ground** – Conducting connections, whether intentional or accidental, between an electrical circuit or equipment and the earth or to some conducting body that serves in place of the earth.

3.7 **Hot Work** – The riveting, welding, torch/flame cutting, electrical arc welding or the use of oxygen-fuel gas equipment to cut, heat, melt, braze, etc. metals either to join together or separate.

3.8 **Multi-arc Welding** – Welding operation in which the source of the welding voltage supports several stringers. Current is controlled by individual resistors located either in a single enclosure or in individual enclosures.

3.9 **Portable Welding Machine** – A gasoline or diesel-engine driven welding machine.

3.10 **Portable Generator** – Mechanically-driven electrical generator, usually 10 kW or smaller, used to supply temporary convenience power.

3.11 **Permit-Required Confined Space (Permit Space):** A confined space that has one or more of the following characteristics:

   3.11.1 Contains or has a potential to contain a hazardous atmosphere;

   3.11.2 Contains a material that has the potential for engulfing an entrant;

   3.11.3 Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

   3.11.4 Contains any other recognized serious safety or health hazard.

3.12 **Qualified Inspector** – An experienced employee who has demonstrated their ability to inspect equipment.

3.13 **Qualified Person** – An experienced employee who has:

   3.13.1 Skills and knowledge related to the construction, installation, and operations of equipment that will be used during welding operations.

   3.13.2 Received training on the potential occupational health, safety and environmental hazards associated with welding and the equipment associated with performing the task.
3.13.3 Demonstrated competency in performing the task and in using specific equipment safely.

3.14 **Soldering** - The joining of two metal surfaces with nonferrous filler metal (solder) that melts at a temperature below that of the metals to be joined. Lead, tin, and "silver" solder (which may contain cadmium), zinc, chloride and fluorides are common materials used in the soldering process. The melting temperatures of the solder and the composition of the filler determine the type of soldering.

3.15 **Welding** - The heating of a metal above its melting point, causing it to fuse to another metal surface. The major difference between the types of welding processes is the heating method of the metals and the method used to protect the heated area from solidifying before the metal unites.

3.16 **Welding Leads** – Set of electrical conductors connected to the welding source that supplies welding voltage to the work. Welding leads consist of two individual conductors; a work lead and a work return lead.

### 4.0 Reference Documents

4.1 ANSI Z49.1 2012 Safety in Welding, Cutting, and Allied Processes

4.2 29 CFR 1910.254 – Arc Welding and Cutting

4.3 29 CFR 1926 – Subpart J, Welding and Cutting; 1926.350 through 1926.353

4.4 OSHA eTool – PPE Hot Work

4.5 OSHA Safety and Health Topics – Welding, Cutting and Brazing

4.6 HASELDEN - Fire Prevention and Protection Program

4.7 HASELDEN - Personal Protective Equipment

4.8 HASELDEN - Construction Permit Required Confined Space Entry Program

4.9 HASELDEN - Respiratory Protection Program

4.10 HASELDEN – Gas Welding, Torch Cutting, Soldering, and Brazing

### 5.0 Responsibilities

5.1 **Superintendents** – manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

### 6.0 Implementation

6.1 **EMPLOYEE TRAINING**
6.1.1 Only trained, qualified employees will perform welding operations

6.1.2 Welders performing electric arc welding will be trained on the safe use, installation and inspection of equipment. Training will include:

6.1.2.1 Preventing shock hazards, from both the welding machine incoming power and the welding voltages.

6.1.2.2 Preventing burns, from flash at the welding machine incoming power cable and connections.

6.1.2.3 Using proper welding techniques and personal protective equipment (PPE).

6.1.2.4 Properly grounding the equipment.

6.1.2.5 Checking switches for proper function.

6.1.2.6 Reading and following the machine manufacturer’s instructions for safe use and inspection.

6.1.3 Maintain training records and area and personal monitoring on site and will provide Haselden a copy of the information upon request.

6.2 EXPOSURE MONITORING

6.2.1 Air sampling to verify the concentration levels of toxic fumes and gases may be necessary to determine if respiratory hazards are created in the cutting, welding, or burning of certain metals and compounds such as lead base metals, zinc, cadmium, mercury, beryllium, or exotic metals and paints.

6.2.1.1 Mechanical ventilation must be used as an engineering control before respiratory protection can be implemented.

6.2.1.2 Where respiratory hazards can be reasonably estimated, an appropriate respirator may be used, in combination with respiratory protection, while air sampling is being performed.

6.2.1.3 Where respiratory hazards cannot be reasonably estimated, the atmosphere must be considered IDLH, immediately dangerous to life and health.

6.2.1.4 Compliance with 29 CFR 1910.134 and the HASELDEN Respiratory Protection Program is required for all respirator use.

6.3 EQUIPMENT INSTALLATION AND INSPECTION REQUIREMENTS

6.3.1 A qualified person will perform inspections on a new installation.
6.3.1.1 Install and inspect all electrical connections at each new installation to ensure that the integrity of the conductor and their terminations are adequate.

6.3.1.2 Inspect stationary welding machines on a semi-annually basis. This inspection will address:

6.3.1.2.1 Insulation integrity of the supply-side conductors.

6.3.1.2.2 Adequacy of the supply-side conductor terminations.

6.3.1.2.3 Proper over-current protection for the welding machine.

6.3.1.2.4 Adequacy of the equipment grounding conductor.

6.3.1.2.5 Indications of weather or water damage.

6.3.1.2.6 Ensuring that the power source is capable of handling the maximum current requirements for the job.

6.3.2 Each electric welding machine will have power supplied by a properly sized conductor with an appropriate overcurrent protection device and switch.

6.3.2.1 Power supplied by a plug and receptacle, supply side will have a female connector interlock to make it impossible to disconnect the plug when the main disconnect is closed (energized).

6.3.2.2 Power supplied conductors will be either four-conductor cords, with ground wire included within the cord, or three-conductor cord, with an external ground wire. In either case, the ground conductor will be connected to an adequate ground.

6.3.2.3 Two single-phase welding machines installed in close proximity to each other will be connected to the same phase of the power supply to minimize the possible differences in welding voltages due to “phase relationships”.

6.4 ARC WELDING MACHINE REQUIREMENTS

6.4.1 Portable Welding Machines:

6.4.1.1 A driven ground rod or case ground to building steel is not required for portable welding machines.

6.4.1.2 Convenience receptacles must be guarded with a ground fault circuit interrupter (GFCI) if the voltage is alternating current. If the voltage is direct current, receptacles shall be disabled and not used.

6.4.2 Multi-arc Welding Machines:
6.4.2.1 Multi-arc welding machines shall not be used to supply welding power of different polarity from the same power source.

6.4.2.2 Each power source shall supply only single-polarity welding.

6.4.2.3 Different type connectors for each conductor function shall be used making it impossible to connect the work lead into the return lead connector.

6.4.2.4 It must be impossible to connect either the work lead or the return lead into the conductors supplying the resistor unit.

NOTE: This type welder should not be confused with 6/8-pac rectifier type machines that normally consist of one welding output source, either 500 or 1000 amp, connected to multiple grid units.

6.4.3 Dual-Polarity Welding:

6.4.3.1 Exposed electrode holders of different polarities shall not be brought or used closer than 10 feet from each other, or they shall be separated by a physical barrier.

6.4.3.2 Welding leads and welding machines of different polarities should be identified by different color tape when welding of different polarities is being performed in the same general work area.

6.5 FIRE PREVENTION AND PROTECTION

6.5.1 A Hot Work Permit must be requested and issued by Haselden for all hot work activities. See Definitions and HASELDEN Fire Prevention and Protection Policy.

6.5.2 Haselden site management must approve any hot work on any metal drum, barrel, tank, container or hollow structure only after the following has been achieved.

6.5.2.1 Drums, barrels, tanks, containers, or hollow structures that contained toxic or flammable substances must be filled with water or must be thoroughly cleaned of previous contents, ventilated and tested before applying heat.

6.5.2.2 Before heat is applied, a vent or opening will be provided for the release of any built-up pressure during the application of heat.

6.5.3 Designated Hot Work Zone

6.5.3.1 Haselden onsite management must review and approve any hot work zone which will not require a daily hot work permit.
6.5.3.2 A dedicated fire watch may not be required in a designated hot work zone at Haselden’s discretion.

6.5.3.3 Providing fire extinguishers and fire blankets, removal of combustible materials, and/or wetting the area down will be performed as required by environmental conditions and work activities.

6.5.3.4 Whenever the project management team or local authorities issue a “burn ban”, a dedicated fire watch will always be required.

6.5.4 Welding, Cutting, Soldering During Construction

6.5.4.1 Prior to beginning the welding, soldering, torch cutting, employees will:

6.5.4.1.1 Ensure a 10 pound “ABC – Class” fire extinguisher (minimum size) is within 20 feet of ALL hot work regardless of where the hot work is being performed.

6.5.4.1.2 Inspect the work area (around, behind and below) to ensure sparks, molten metal, or hot slag will not fall on workers, combustible or flammable materials, gas hoses, or welding leads.

6.5.4.2 Combustible material will be relocated at least 35 feet from the hot work, or the work will be covered by fire blankets.

6.5.4.3 Flammable materials will be relocated at least 50 feet from the hot work, or the hot work will be relocated.

6.5.4.4 Nearby Openings - All cracks or openings in the floor within 35 feet of hot work shall be covered or closed or precautions shall be taken to protect flammable or combustible material on the floor below from sparks which might drop through the openings. The same precautions shall be observed with regard to cracks or openings in walls, open doorways, or open or broken windows.

6.5.4.5 When hot work is being done near combustible walls, partitions, ceiling or roofs, fire resistant shields or guards will be used to prevent ignition.

Note: Roofing and other activities may require a longer fire watch period after hot work is completed. See HC Hot Work Policy.

6.5.5 Where it is necessary to observe areas that are hidden from the view of a single fire watcher (other side of partitions, walls, ceilings, etc.) additional fire watchers shall be posted.

6.6 PERSONAL PROTECTIVE EQUIPMENT
6.6.1.1 Long-sleeved natural-fiber (cotton) shirt, un-tucked and completely buttoned in front and at the wrists

6.6.1.2 Leather Welders Gloves or equivalent shall be worn by personnel performing hot work

6.6.1.3 Wear the proper eye protection.

6.6.1.4 Use a non-combustible screen if oxygen and fuel gas welding is being performed near arc-welding

6.6.1.5 Hard hats with welding hoods are required

6.6.1.6 ANSI rated safety glasses with side shields are required under welding hoods

6.6.1.7 Burning goggles are required for all oxygen-fuel gas operations

6.6.1.8 Welding hoods and burning goggles will have filter plates of the recommended shade and cover plates and be designed for easy removal. All filter lenses and plates shall meet ANSI Z87.1 – American National Standard Practice for Occupational and Educational Eye and Face Protection

6.6.1.9 Before respiratory protection is used, the employer shall use feasible engineering controls to reduce respiratory hazards to levels below the Permissible Exposure Limit (PEL).

6.6.1.10 Respiratory protection is required for personnel performing hot work when feasible engineering controls (local exhaust ventilation, general ventilation or natural ventilation) fail to reduce inhalation exposure to levels below the PEL.

6.6.1.10.1 Safety Data Sheets (SDSs) will be reviewed to determine requirements for personal and area monitoring as well as requirements for respiratory protection.

6.6.1.10.2 Respirators will be suitable for the contaminants to which employees are exposed.

6.6.1.10.3 Local ventilation will be used to exhaust the products of combustion when hot work is being performed inside a closed structure.


6.6.2 Employees within 10 feet of any hot work will wear the same PPE as the person performing the actual hot work.
6.7 HOT WORK IN CONFINED SPACES

6.7.1 Hot Work in Confined Spaces shall be considered a hazard that requires the confined space to be classified as Permit Required.

6.7.2 Ventilation in confined spaces shall be sufficient to assure adequate oxygen for life support, to prevent accumulation of asphyxiates or flammable or explosive mixtures, to prevent oxygen-enriched atmospheres, and to keep airborne contaminants in breathing atmospheres below allowable limits.

6.7.3 Work in confined spaces requires special precautions. Workers, including both owner and contractor personnel, should be familiar with written confined space work program guidelines or should have the work supervised by a trained person. Asphyxiation causes unconsciousness and death without warning. Oxygen enriched atmospheres greatly intensify combustion, and may rapidly cause severe and often fatal burns.

6.7.4 Confined spaces shall not be entered unless they are well ventilated and tested to assure they are safe for entry. When it is not practical to maintain the space safe for entry, the space shall only be entered when the following conditions are met:

6.7.4.1 The space has been tested and determined not to present an oxygen deficient or oxygen enriched atmosphere, a hazard of fire or explosion, or an atmosphere hazardous to life;

6.7.4.2 A rescue plan is in place that meets the requirements of 29 CFR 1926.1211.

6.7.5 Testing Atmospheres. Confined spaces shall be tested for toxic or flammable gases, dusts, and vapors, and for adequate or excess oxygen before entering and during occupancy. The same precautions shall apply to areas such as pits, tank bottoms, low areas, and areas near floors when heavier than air gases and vapors are present, and to areas such as tank tops, high areas and near ceilings when lighter than air gases are present.

6.7.6 Gases such as argon, propane and carbon dioxide are heavier than air. Gases such as helium and natural gas are lighter than air.

6.7.7 Adjacent Persons. Adequate ventilation in confined spaces shall be assured not only to protect welders or cutters themselves, but to protect all personnel who may be present in the area.

6.7.8 Air Quality and Quantity. The quality and quantity of air for ventilation shall be such that personnel exposures to hazardous contaminants are maintained below allowable limits.
6.7.9 Breathing air supplied by cylinders or compressors shall meet the Grade D requirements of ANSI/CGA G-7.1.

6.7.10 The supply air line for respirators shall be a dedicated line that is not capable of being valved to any other line which could allow hazardous or toxic gases into the respirator air line.

6.7.11 Additional information on air quality for respirators and their use can be found in 29 CFR 1910.134, and in the Haselden Respiratory Protection Program.

6.7.12 Prohibited Ventilation Gases. Oxygen, or any other gas or mixtures of gases, except air, shall not be used for ventilation.

6.8 WELDER RESPONSIBILITIES

6.8.1 Inspect welding leads prior to use to ensure the insulation is not damaged and the conductor is not exposed.

6.8.2 Defective/damaged welding leads and/or equipment must be removed from service until it has been either repaired or discarded.

6.8.3 Cables/welding leads with damaged insulation or exposed bare conductors can be repaired but only with a material that has equivalent insulating and flexing qualities. Electrical tape alone is not adequate.

6.8.4 Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected shall be used.

6.8.5 Welding lead connections points on the welding machine must be guarded to prevent inadvertent contact with exposed terminals.

6.8.6 Two leads shall be connected to the work piece.

6.8.7 Employees shall NOT coil or loop welding electrode cable around parts of their bodies.

6.8.8 Welding machines must be turned off while pulling leads to a new location.

6.8.9 Welding leads must not be supported by conductive material such as wire; non-conductive material shall be used.

6.8.10 Rod holders/stingers must be inspected for cracked or broken insulating covers; defective rod holders/stingers will be removed from service until they repaired or otherwise discarded.

6.8.11 Welding rods must be removed from the rod holder/stinger when left unattended. Holders shall be placed so that they cannot make electrical contact with employees or objects.
6.8.12 The pipelines or other equipment that contains or contained flammable or combustible materials must **NEVER** be a part of the welding work or return path.

6.8.13 Area is adequately ventilated and shields are in place to prevent co-workers from looking into the arc.

6.8.14 Ensuring welding machines that have been exposed to the elements (rain, snow, dew, etc.) are thoroughly dried and checked before being used.

6.8.15 Dry gloves in good condition shall be used.

6.8.16 Use of damp or wet gloves may lead to electric shock. Where moisture or perspiration is a problem, rubberized gloves or other insulating means should be used.

6.8.17 Electrode holders and guns shall not be cooled by immersion in water.

6.8.18 Water-cooled holders and guns shall not be used if any water leak or condensation exists which would adversely affect the welder’s safety.

6.8.19 Except for shielded metal arc welding, the output of the welding machine shall be electrically de-energized when electrodes or contact tips are changed.

6.8.20 Precautions shall be taken to prevent shock induced falls when the welder is working above ground level.

6.8.21 Wearers of pacemakers or other electronic equipment vital to life shall check with the life support manufacturers and their clinician to determine whether a hazard exists.

6.8.22 Welders and other persons who must work in a welding environment should inform their doctors prior to undergoing device installation procedures.

6.9 **MAINTENANCE**

6.9.1 All arc welding equipment shall be maintained in safe working order at all times.

6.9.2 Repairs shall be made by qualified personnel only.

7.0 **Attachments**
1.0 Purpose

1.1 To provide Haselden Construction employees and subcontractors with safe practices for working with electricity. A copy of this written program will be available at each Haselden Construction Jobsite for inspection and review by any affected employee.

2.0 Scope

2.1 The Electrical Safety Program applies to all Haselden Construction Employees and subcontractors whose activities may include working with electricity. This includes, but is not limited to the use of temporary power, temporary lighting, locating all concealed electrical conductors, locating buried electrical service, and identifying power lines and their voltages before beginning work activities.

3.0 Definitions

3.1 **Amperes**: The number of electrons that flow past a given point in one second. A measure of current.

3.2 **Alternating Current**: A current that flows in one direction for a period of time and then flows in the opposite direction for a period of time. Household, office and job site circuits operate with alternating current.

3.3 **Competent Person**: A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.4 **Direct Current**: A current that flows in one direction. Batteries use direct current.

3.5 **Ground Fault Circuit Interrupter (GFCI)**: A device which measures outgoing current compared to incoming current and opens the circuit if there is a difference between the two.

3.6 **Qualified Person**: A person who has received training in and has demonstrated skills and knowledge of the construction, operation, and hazards of electrical equipment and installations.
3.7 **Resistance**: Anything that retards the flow of current, measured in Ohms. Metals have low resistance. Rubber has high resistance.

3.8 **Voltage**: The electromotive force that causes electrons to flow.

4.0 **Reference Documents**

4.1 OSHA Subpart K – Electrical

4.2 NEC – National Electrical Code (Current Edition)

4.3 Haselden Hazardous Energy Control Program

4.4 Haselden Arc Flash Program

5.0 **Responsibilities**

5.1 **Site Superintendents(s):**

5.1.1 Site Superintendents are responsible for identifying electrical hazards and ensuring that the installing contractor provides adequate equipment and safety devices to protect employees from injuries due to electric shock. Site supervisors will observe electrical work activities daily during the course of their normal duties to verify compliance with safe work practices.

5.2 **All Employees:**

5.2.1 Employees are responsible for properly using GFCIs, extension cords, electrically powered tools and other electrical equipment. Employees will immediately report unsafe conditions and equipment they observe to their supervisor for removal from service.

5.2.2 Only trained and properly qualified personnel will perform installation, servicing, repairs or maintenance on electrical equipment and circuits. Employees will verify that electrical circuits, powerlines and electrically powered equipment have been shut off or de-energized and locked out in accordance with Haselden Construction’s Hazardous Energy Control procedures before performing work on these devices.

5.2.3 Employees are prohibited from removing or damaging electrical safety devices such as grounding prongs on plugs, fuses or fusible links.

6.0 **Implementation**

6.1 **De-energizing**

6.1.1 All equipment and circuits must be de-energized, locked and tagged, and verified as safe before anyone can perform work on them.

6.1.2 If a circuit cannot be de energized and must be worked on “Hot” then other safety procedures are required. These requirements are included in the National Electric Code, the Haselden Hazardous Energy Control program and the Haselden Arc Flash program.
6.2 Temporary Power

6.2.1 All 125V, 15A, 20A, and 30A receptacles used for temporary power must have GFCI protection. (NEC Article 527.6)

6.2.2 Receptacles rated other than 125V, 15A, 20A, or 30A that supply temporary power to equipment used by personnel during construction, remodeling, maintenance, repair or demolition of buildings, structures, equipment, or similar activities must comply with either GFCI protection requirements or follow a written Assured Electrical Grounding Conductor Program (AEGCP). See below for AEGCP requirements.

6.2.3 All components of the temporary power system must be rated for their particular use and exposure.

6.2.4 All temporary panels will be maintained in a safe and neat and workmanlike manner at all times.

6.2.4.1 Broken or damaged dead fronts, covers, receptacles, outlets or receptacle covers will be replaced immediately.

6.2.4.2 Weatherproof covers that do not spring back when the plug in device is removed shall be considered damaged and must be replaced, whether exposed to weather or not.

6.2.4.3 All circuit breakers must be marked identifying what they control.

6.2.4.4 All holes in panels or boxes must be closed

6.2.4.5 All breaker openings must be sealed with either a breaker or a closure plate.

6.2.4.6 No cords shall be tied directly into a temporary panel. This includes welders, tile and brick saws. A one foot maximum length pigtail with cord cap may be tied into the panel.

6.3 Ground Fault Circuit Interrupters (GFCI)

6.3.1 Haselden requires the use of GFCI protection for all construction operations. This device shall be built into all temporary power installations.

6.3.2 Employees using permanent power circuits, if those circuits are not GFCI protected, will use portable GFCIs plugged into the outlet. Portable GFCIs shall be rated for the amperage of the circuit to which they are attached, typically 20 amps.

6.3.3 GFCIs provided in temporary power installations will be tested for proper operations at least monthly. This test will be conducted utilizing an electronic GFCI tester, and the inspection will be documented.
6.3.4 GFCI pigtails, GFCIs mounted on tools and equipment, and GFCIs built into temporary generators shall be tested daily before use.

6.4 Assured Equipment Grounding Conductor Program (AEGCP)

6.4.1 This program is prohibited as the sole means for protection on all Haselden projects, and must be used in conjunction with GFCI.

6.4.2 Receptacles rated other than 125V, 15A, 20A, or 30A that supply temporary power to equipment used by personnel that do not have GFCI protection must use AEGCP following a written program.

6.4.3 All use of AEGCP without GFCI must be approved in writing by Haselden’s Director of safety and health or designee

6.5 Power Tools

6.5.1 Power tools will be grounded with grounding pins intact or will be double insulated and all extension cords must have three conductors.

6.5.2 Double-insulated tools are identified by a square-within-a-square logo or the words “double-insulated” on the label. These tools will have a two-prong plug with no ground pin and one prong will be wider than the other. Double insulated tools do not have a grounding conductor and are safe to use, but only grounded extension cords are allowed on Haselden Construction sites.

6.5.2.1 Inspection of double insulated tools shall be performed before each use. If the case is cracked or has missing screws, the double insulation may be compromised and the tool shall be removed from service.

6.5.2.2 If the tool is marked as double insulated and it has a grounded cord cap, a repair has been made by an unqualified person that may compromise the double insulation or reverse the polarity, and the tool shall be immediately removed from service.

6.5.2.3 Double insulated tool repair, including cord repair or replacement shall only be performed by a qualified person or authorized repair center.

6.5.3 Electrical insulation must be free of cuts, abrasions, or cracks.

6.5.4 Flexible Cords:

6.5.4.1 Electrical cords on shop tools, portable generators, computer equipment, typewriters, lights, coffee pots, fax machines and other equipment will be neatly coiled and placed away from vehicle, heavy equipment and employee traffic areas.

6.5.4.2 Placement of cords across roads, driveways, streets, doorways, hallways, walkways, metal stud framing, or emergency exits is prohibited. Where an electrical cord cannot be relocated, a solid rubber or other non-conducting bridge must be fixed in place to
protect the cord from damage and to prevent employees from tripping.

6.5.4.3 Electrical cords will not be allowed to hang near equipment with moving parts that could accidentally catch the cord.

6.5.4.4 All extension cords will be rated for outdoor "hard or extra-hard duty" usage and be clearly labeled, stamped or marked with the appropriate rating. Acceptable cord ratings are SJ, SJO, SJTO, S, SO, ST, & STO.

6.5.4.5 Extension cords shall be sized #12 AWG at a minimum.

6.5.4.6 Extension cords will not be fastened with staples or hung or suspended from conductive or un-insulated hangers (e.g., nails, wires, etc.)

6.5.4.7 Flexible cords will be repaired, maintained and tested by a qualified person utilizing approved parts that are suited for the particular use and approved by a recognized testing laboratory.

6.5.4.8 Cords must be suspended 7-feet high or higher when crossing access ways for foot traffic.

6.5.4.9 Repair to damaged exterior insulation of tool cords or extension cords is prohibited on Haselden projects or in Haselden facilities.

6.6 Portable Generators

6.6.1 Generators supplying voltages other than 110/220 are considered to be separately derived sources and require installation according to requirements of the National Electrical Code articles 240 and 250.

6.6.2 Portable generator circuits of 20 amperes or less shall be equipped with built-in GFCI protection provided by the generator manufacturer.

6.6.3 All portable generator circuits shall be GFCI protected.

6.6.4 Portable generators shall be grounded in accordance with the manufacturer’s recommendations.

6.7 Electrical Outlets

6.7.1 Electrical outlets must be clean, free of dirt, cracks, or evidence of water damage.

6.7.2 Cord adapters are limited to two outlets, unless product data is presented that the states an adapter with more than two outlets is rated for use in a 20-amp circuit.

6.7.3 All electrical outlets must be protected from moisture.

6.7.4 Covered receptacles must be repaired or replaced if the covers are damaged or missing.
6.8 Temporary Lighting

6.8.1 Lighting levels shall be per minimum OSHA standards.

6.8.2 Protect lamps from accidental breakage by using covers or guards, or use shatterproof lamps.

6.8.3 Use electrical light stringers made with pre-molded cords, rated for hard or extra-hard usage, maintained in good repair.

6.8.4 Never support light cords with conductive materials.

6.8.5 Provide grounding if required.

6.8.6 Maximum total watts for a 20 volt circuit shall be 1600 W.

6.8.7 Do not install receptacles on branch circuits that supply temporary lighting.

6.8.8 Temporary lighting stringers must be protected by GFCI.

6.9 Underground Utilities

6.9.1 Prior to excavating, trenching or other digging, all electrical and other underground installations will be identified and locations marked. Call the local No-Dig number having jurisdiction.

6.9.1.1 No-Dig permits must be renewed every 30 days.

6.9.2 Where underground electrical installations not installed, owned or operated by public utilities are located on a property, it will be the property owner’s responsibility to locate and mark these installations.

6.9.3 Buried electrical lines must be de-energized and locked out before excavation or trenching work begins within a five-foot distance. Where buried electrical lines cannot be de-energized, lines must be excavated and exposed completely by hand or by hydrovac excavation. Live lines will be protected with non-conductive barriers to prevent contact with heavy equipment during excavation work.

6.9.4 Haselden employees are prohibited from potholing or hand digging underground electrical utilities.

6.9.5 See Sections 6.1 and 6.2 of the HC Excavation and Trenching Policy for more requirements.

6.10 Overhead Powerlines

6.10.1 Cranes must be kept a minimum safe distance of 20 feet from overhead lines. Please see Haselden’s Crane Policy for further information.
6.10.2 Check equipment manufacturer’s operator manual for clearance requirements. Concrete pump clearances may be more restrictive than Haselden’s general equipment clearance requirements.

6.10.3 Heavy equipment, hoists, forklifts, and other equipment with elevated masts are subject to arcing if they are used in proximity to overhead powerlines. Therefore, all such equipment must be kept at a safe distance from overhead powerlines. The minimum safe clearance from a live powerline is 15 feet for lines that are carrying up to 50 kilovolts (kV), unless the equipment manufacturer’s requirements are more restrictive. **Crane clearance requirements are more restrictive. See HC Crane Policy.**

<table>
<thead>
<tr>
<th>Voltage (kV, AC)</th>
<th>Minimum Clearance Distance (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50</td>
<td>15</td>
</tr>
<tr>
<td>Over 50-200</td>
<td>20</td>
</tr>
<tr>
<td>Over 200-350</td>
<td>25</td>
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<tr>
<td>Over 350-500</td>
<td>30</td>
</tr>
<tr>
<td>Over 500-750</td>
<td>40</td>
</tr>
<tr>
<td>Over 750-1000</td>
<td>50</td>
</tr>
<tr>
<td>Over 1000</td>
<td>As established by the utility owner/operator or registered professional engineer who is a qualified person in electrical power transmission and distribution.</td>
</tr>
</tbody>
</table>

(NOTE: These HCI clearance requirements exceed OSHA standards).

6.11 **New Equipment Installations:**

6.11.1 Circuits shall be labeled to identify the equipment that they control. Where employees may become exposed to energized equipment, it shall be locked, isolated or otherwise protected from contact, tampering and vandalism.

6.11.2 Electrical rooms shall be equipped with locks before equipment inside the rooms becomes energized. They shall remain locked when unattended by a qualified person.

6.11.3 Electrical equipment must be rated for the hazardous locations where the equipment is used or installed. Equipment for flammable or combustible atmospheres must be rated explosion-proof or intrinsically safe for the specific fire Class and Division of the hazards. This also applies to flammable and combustible material storage areas where leaks could create a fire hazard. Refer to 29 CFR 1926.407 and .449r.

6.11.4 Wiring used in electrical circuits must meet National Electrical Code requirements for its intended use. This includes temporary wiring and lighting.

6.11.5 Over current protection devices such as fuses or circuit breakers must be used to interrupt current flow.

6.12 **First Aid for Electric Shock:**
6.12.1 If an employee has received an electric shock and is unconscious, call 911.

6.12.2 Before providing first aid be sure the area and employee are clear of the electrical hazard that caused the incident. Make sure all current sources are de-energized.

6.12.3 Electric shock can cause delayed health effects due to internal burns and disruption of the heartbeat. Victims of electric shock shall be immediately transported to the nearest hospital or medical clinic for observation, even if they have no apparent injuries.

6.12.4 The degree of injury caused by an electric shock depends on the amount of current, how long the body is exposed and the path the current takes through the body.

6.12.5 First aid for electric shock may require providing cardiopulmonary resuscitation (CPR) and treating the victim for shock by elevating the feet. Burns may be covered with clean cloth or dressings until the victim gets medical attention.

6.12.6 All electrical shocks must be immediately reported to the Employee’s supervisor and must be documented on a Haselden Construction incident report form.

7.0 Attachments

None
1.0 Purpose

1.1 This program outlines the standard operating procedures for all Haselden Construction job site personnel.

1.2 The Site Superintendent is designated as the program administrator. Site Superintendents have responsibility for maintaining the written program, performing compliance audits, and maintaining required training and compliance records for their assigned operating locations.

2.0 Scope

2.1 This program applies to all Haselden Construction employees, subcontractors and vendors that are on any Haselden Construction job site.

2.2 Subcontractors are required to have their own site-specific incident reporting procedures and medical treatment program in place as part of this program.

3.0 Definitions

3.1 Emergency is a situation that poses an immediate risk to health, life, property or environment. Most emergencies require urgent intervention to prevent a worsening of the situation.

4.0 Reference Documents


4.2 29 CFR 1926.35 (Employee Emergency Action Plans)

4.3 HC Crisis Management Program

5.0 Responsibilities

The following job descriptions describe the responsibilities of onsite personnel and the communications process during an emergency situation.

5.1 Employees:
5.1.1 All site employees are expected to participate in and follow the emergency response procedures. Site employees must respond to and take directions from the Haselden Construction Site Superintendent, first aid responders, supervisors and emergency response personnel.

5.1.2 If site employees are witnesses to an accident, they should (in order):

5.1.2.1 Assess the situation

5.1.2.2 Evaluate the area to ensure personal safety

5.1.2.3 Talk with the injured party to determine injuries

5.1.2.4 If unconscious immediately call for emergency personnel

5.1.2.5 Immediately notify their supervisor and call for emergency personnel.

5.1.2.6 Validate that the Haselden Project Superintendent is immediately advised of the situation

5.1.2.7 Follow the Haselden Construction Superintendent’s directions.

5.1.3 If approached by the media, on site employees shall:

5.1.3.1 Be courteous and take the individuals to the job site entrance gate. Inform them you will locate someone to speak to them as quickly as the emergency permits.

5.1.3.2 Reference Haselden Crisis Management Policy for further instructions

5.2 Foreman:

5.2.1 The foreman and subcontractors supervisors shall be knowledgeable of the site-specific emergency plan and be prepared to assist the Project Superintendent in the event of an emergency. Supervisors should affirm that all new or transferred employees to the project are aware of the procedures to follow during emergencies.

5.2.2 During an emergency, the foreman assists the Project Superintendent in the control of worker safety and site security and provides the Site Superintendent with accurate personnel head count.

5.3 Project Superintendent:

5.3.1 Conduct one or more Emergency Response Drills during the course of a project. One such drill shall be conducted during or after the structural frame is constructed.
5.3.2 During the implementation of the Site Specific Plan, the Project Superintendent or his designees (i.e. the Operations Director or Project Manager) will inform all supervisors of their responsibilities regarding the emergency response plan details as they apply to the project. The Project Superintendent will be responsible for developing site drawings that indicate meeting areas, control points, site exits, and access and exit gates.

During an emergency, the Project Superintendent assumes leadership of the emergency response team and verifies that:

5.3.2.1 The Emergency Response Plan is implemented:

5.3.2.2 The Crisis Management Program is implemented immediately if the situation warrants.

5.3.2.3 If warranted: A site work stoppage is enacted to protect all site workers from further incidence or potential exposure, provide an accurate head count, and to secure the integrity of the incident scene:

5.3.2.4 All appropriate steps to limit loss or damage to property or equipment have been taken and that corrective action, if applicable, is taken as quickly as possible:

5.3.2.5 A Haselden employee documents, photographs, and video tapes information for an accurate record of the incident.

5.4 Director of Health and Safety or Designee:

5.4.1 The Director of Health and Safety for Haselden Construction will provide additional direct support during on-site emergencies and provide assistance to the Project Superintendent throughout the entire crisis situation.

6.0 Implementation

7.0 Attachments:

7.1 N/A
1. **Purpose** - To summarize employee exposure notification guidelines required by OSHA and various sections of the Haselden Safety Policy when monitoring for chemical or physical hazards is performed.

2. **Scope** - This policy covers Haselden employees. Subcontractors are required to follow this policy and notify their employees when monitoring for hazard exposure is performed on a Haselden project.

   2.1 Where requirements of a specific Haselden Safety Policy or OSHA requirement are in conflict with this policy, the more restrictive shall apply.

3. **Definitions**

   3.1 **OEL (Occupational Exposure Limit)**: An upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials. The following hierarchy of OELs shall be used:

   3.1.1. **IDLH Atmosphere**: This is the most restrictive OEL. Work shall only be performed under the requirements of specific policy sections, “Work in IDLH Atmospheres”.

   3.1.2. **Ceiling Recommended Exposure Limit**: The ceiling value exposure limit should not be exceeded at any time.

   3.1.3. **Short Term Exposure Limit (STEL)**: A 15-minute or 30 minute Time Weighted Average (TWA) exposure limit that should not be exceeded at any time during a workday. Time limit varies by the occupational hazard and may be found in the SDS, the NIOSH Pocket Guide to Chemical Hazards, or in specific OSHA standards.

   3.1.4. **PEL (Permissible Exposure Limit)**: The occupational exposure limit established by OSHA, expressed as an eight hour TWA. If no PEL has been established, either of the following two OELs can be used.
3.1.5. National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs)

3.1.6. ACGIH® TLV® (Threshold Limit Value)

3.1.7. If no PEL, REL or TLV has been established;

3.1.7.1. Any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet shall be used.

3.2. Time Weighted Average (TWA) - The employees' average airborne exposure in any 8-hour work shift of a 40-hour workweek that shall not be exceeded.

4. Reference Documents

4.1 OSHA 29 CFR 1910 Subpart Z - Toxic and Hazardous Substances/Employee Standard Summary

4.2 OSHA 29 CFR 1910.1020 - Access to Employee Exposure and Medical Records

4.3 OSHA eTool Respiratory Protection - Exposure Assessment

4.4 OSHA Publication #3074 – Hearing Conservation

4.5 OSHA Publication #3110 - Access to Medical and Exposure Records

4.6 HASELDEN – Confined Space Policy

4.7 HASELDEN – Hazard Communication

4.8 HASELDEN Respiratory Protection Program

4.9 HASELDEN Respirable Silica Hazard Control Policy

4.10 HASELDEN Asbestos Awareness Policy

5. Responsibilities

5.1. The Superintendent shall notify the Safety Department when exposure monitoring is required by the scope of the project or in advance of when it is being performed by or on behalf of subcontractors.
5.2. Subcontractors shall comply with this policy and shall notify the Superintendent in advance of when exposure monitoring is being performed by them or on their behalf.

6. Implementation

6.1. Those employees affected by the hazard shall be given the opportunity to observe hazard exposure monitoring performed on the project. Employees observing such monitoring must be qualified to enter the monitoring environment by meeting the training and medical evaluation requirements of the specific Haselden Safety Policy or OSHA standard, and must wear the required protective equipment provided by the employer.

6.2. Those employees affected by the exposure shall be provided with the results of such monitoring in a timely manner, in accordance with the requirements of the specific Haselden Safety Policy or OSHA standard.

6.3. The employer shall establish and maintain an accurate record of all measurements required by the standard which identifies monitoring requirements for the particular hazard.

6.3.1. The record shall include the dates, number, duration and results of each of the samples taken, with a description of the sampling procedure used for sampling.

6.3.2. A description of the analytical methods if used or required shall be recorded.

6.3.3. If respiratory protection devices are used, they shall be described.

6.3.4. The names, job classifications and exposure levels of employees monitored shall be recorded if required by the specific Haselden Safety Policy or OSHA standard.

6.3.5. These records shall be maintained in accordance with the specific Haselden Safety Policy or OSHA standard.
1.0 Purpose

1.1 To assist with compliance of the OSHA Excavation and Trenching Standard and reduce or eliminate the injury potential for excavation hazards.

2.0 Scope

2.1 This section describes requirements for excavation and trenching safety for any excavation or trench that employees may enter on Haselden Projects.

2.2 See HASELDEN Earth Moving Equipment Policy for equipment requirements and operator responsibilities.

3.0 Definitions

3.1 **Benching (Benching System):** A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

3.2 **Cave-In:** The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

3.3 **Competent Person:** A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.4 **Excavation:** Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

3.5 **Faces or Sides:** The vertical or inclined earth surfaces formed as a result of excavation work.

3.6 **Hazardous Atmosphere:** An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

3.7 **Maximum Allowable Slope:** The maximum steepness of an excavation based on its soil classification (soil type).
3.8 **Potholing (Daylighting):** The process of hand digging or vacuum digging one or more small holes to positively locate a utility or other underground item.

3.9 **Shield (Shield System):** A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Shields can be either manufactured or job-built but both must be designed by a registered professional engineer in accordance with 1926.652(c)(3) or (c)(4).

3.10 **Shoring (Shoring system):** A structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

3.11 **Sloping (Sloping System):** A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in the soil type, environmental conditions of exposure, application of surcharge loads, and other factors.

3.12 **Stable Rock:** A natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

3.13 **Structural Ramp:** A ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock is not considered structural ramps.

3.14 **Support System:** A structure such as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

3.15 **Trench:** A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 m). If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6 m) or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

3.16 **Utilities:** The set of services used by public and private customers, including electricity, natural gas, water, communication lines, storm sewer, and sewage.

4.0 **Reference Documents**

4.1 OSHA 29 CFR 1926.650 (Subpart P)

4.2 HASELDEN Earth Moving Equipment Policy

4.3 HASELDEN Respiratory Protection Program
4.4 HASELDEN Confined Space Program

5.0 Responsibilities

5.1 Director of Safety and Health or Designee:

5.1.1 Verify compliance with this policy on a periodic basis

5.1.2 Update this program as regulations require or new hazards or methods are needed.

5.2 Site Superintendent(s):

5.2.1 Assure that all site employees who are required to enter an excavation are trained in excavation hazard awareness in accordance with Haselden Construction training requirements.

5.2.2 Periodically review the implementation of this program.

5.2.3 Enforce disciplinary action for violations of this program.

6.0 Implementation

6.1 Utilities

6.1.1 Prior to any excavation utilities must be located in the proposed excavation area to prevent damage during digging.

6.1.2 Digging shall not begin until the Daily Dig Permit (Attachment 7.6) is completed and signed by the HC Superintendent and the contractor doing the excavating. Completing the Daily Dig Permit requires the following actions:

6.1.2.1 Each contractor is responsible to locate utilities for their own excavation work. Call 811. Locates can take up to 72hrs.

6.1.2.2 Verify all utility operators notified by 811 have responded.

6.1.2.3 Call private location services for utilities within private property boundaries. Verify private locater has responded.

6.1.2.4 Compare location markings with civil plans and as-built drawings for the proposed excavation area.

6.1.2.5 Utilities must be clearly marked. Marking must have been made within the last 30 days, or less if required by contract or local law.

6.1.2.6 If there are any concerns with the potential for unidentified or missed utilities, those concerns must be addressed before digging.

6.1.2.7 Contact numbers for all utility operators must be on hand.

6.1.2.8 A JHA must be prepared.
6.1.2.9 If excavation is planned within 5 feet of a marked utility, potholing must be done. Follow the Potholing Policy Requirements.

6.2 Potholing Policy

6.2.1 Potholing is accomplished through various types of excavation methods and equipment. Equipment manufacturer’s instructions shall be followed.

6.2.2 Any existing utility that is within 5 feet of a proposed excavation must be potholed to verify utility location before the excavation begins.

6.2.3 Potholing is the practice of digging a test hole to expose underground utilities to ascertain the horizontal and vertical location of the utility.

6.2.4 Because of electrocution hazards, Haselden employees are prohibited from potholing or hand digging underground electrical utilities.

6.2.5 Hand digging is relatively safe for locating most utilities. Shovels and other hand tools may damage direct buried electrical cable, fiber optic cable, and plastic gas lines. Only fiberglass handled tools shall be used.

6.2.6 Vacuum excavation is the preferred method for non-destructive exposure of buried utilities, utilizing either air or water pressure to break up the soil and a vacuum device to collect the spoil.

6.2.7 Each equipment manufacturer has specific instructions describing type of nozzle, wand techniques, clearances, maximum pressures and other considerations that must be followed. These instructions should be available on the jobsite and reviewed with the equipment operator before commencing work.

6.2.8 Air vacuum excavators utilize the kinetic energy in a high velocity air stream to penetrate, expand and break-up soil. The loosened chunks of soil and rock are then removed from the hole using a powerful vacuum. A test hole is made until the buried utility is found. Air units are not effective in all soil types, especially wet, heavy clay and caliche.

6.2.9 Water vacuum excavation systems use high-pressure water to reduce and loosen the soil. The wet soil and mud slurry is removed to a spoil tank using a powerful vacuum. Water vacuum systems are effective in most soils including wet heavy clays. Heated water systems can be used to excavate frozen ground. Operational caution is also necessary as high-pressure water systems have the potential of cutting through cables or damaging pipe if not used with care.

6.2.10 Call Before You Dig

Colorado Call# 811
Colorado Online Ticket Express http://colorado811.org/ticket-express/
6.2.11 Utilities must be marked with following color codes:

6.2.11.1 Communication/fiber optic lines - *(orange)* flags or paint.

6.2.11.2 Electrical lines - *(red)* flags or paint.

6.2.11.3 Water lines - *(blue)* flags or paint.

6.2.11.4 Gas lines - *(yellow)* flags or paint.

6.2.11.5 Sewer lines - *(green)* flags or paint.

6.2.11.6 Reclaimed or landscaping water - *(purple)* flags or paint.

6.2.11.7 Proposed excavations - *(white)* flags or paint.

6.2.11.8 Survey marking - *(pink)* flags or paint.

6.3 Other Excavation Hazard Control Requirements

6.3.1 Hazardous Atmospheres

6.3.1.1 Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances have been manufactured or are stored nearby, the atmospheres in an excavation shall be tested before employees enter.

6.3.1.2 Adequate precautions shall be taken to prevent employee exposure to hazardous atmospheres. These precautions include hazard elimination, engineering controls such as ventilation, and proper respiratory protection.

6.3.1.3 Adequate precautions such as ventilation shall be taken to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit.

6.3.1.4 When hazard controls are used to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

6.3.2 Excavations 2 Feet or Deeper:

6.3.2.1 A ramp or step is required every 50 feet for access into a shallow trench. If an obstruction such as vertical formwork or a rebar curtain prevents passage across a trench, access is required on both sides of the trench.
6.3.3 Excavations 4 Feet or Deeper:

6.3.3.1 Proper egress must be established for any worker who enters into the excavation. This could be a ladder, stair or ramp.

6.3.3.2 Maximum travel distance to an egress point is 25 feet.

6.3.4 Excavations 5 Feet or Deeper:

6.3.4.1 Cave-in protection is required.

6.3.4.2 The competent person is responsible for examining all excavations. If the excavation is less than 5 feet deep and shows signs of a potential cave-in, protective systems shall be used, including sloping, benching, shielding and shoring.

6.3.4.3 Stable Rock does not require cave in protection, but it must be classified in accordance with 29 CFR 1926 Subpart P Appendix A.

6.3.5 Excavations 6 Feet or Deeper:

6.3.5.1 Fall Protection and/or Perimeter Protection is required.

6.3.5.2 Provide walkways where employees are required or permitted to cross over excavations. Guardrails which comply with §1926.502(b) must be provided where walkways are 6 feet or more above lower levels.

6.4 Barricades

6.4.1 All excavation and trenches must be barricaded.

6.4.1.1 For excavations less than 6 feet deep, a visual barricade of caution tape, rope with flagging, or equivalent means may be used to identify the excavation. A barricade shall be placed where the spoil pile does not provide warning or an obstruction to approaching employees, or if the excavation is not visible. This barricade shall be in place before the end of the shift.

6.4.1.2 Excavations that are greater than or equal to 6 feet deep and sloped at 1 ½ to 1 or steeper shall be barricaded by one of the following methods:

6.4.1.2.1 At the top of the cut, a chain link fence, orange plastic snow fence supported by posts, standard guardrail, or Jersey barrier

6.4.1.2.2 At a distance of 6 feet back from the top of the cut, two ribbons of danger tape, one each at top rail and mid rail height, supported by posts, or use one of the methods in 6.3.1.2.1.
6.4.1.3 For pits and shafts that are 6 feet deep or deeper and 19 inches or greater in any horizontal dimension, guardrail systems or hole covers shall be used.

6.4.1.3.1 **Exception:** Drilled piers. Refer to HC Policy Drilled Foundations

6.4.1.3.2 **Employees shall not be permitted for any reason inside a pit, well or shaft 5 feet deep or greater not having protective systems, or in a pit, well or shaft less than 5 feet deep where the competent person determines protective systems are required.**

6.5 **Excavation and Trenching Hazards**

6.5.1 The following list of potential hazards must be evaluated and addressed by a Competent Person before workers are allowed to enter an excavation:

6.5.1.1 Cave-in hazards

6.5.1.2 Access and egress requirements

6.5.1.3 Water accumulated or accumulating in the excavation

6.5.1.4 Vibration sources that could make the soil unstable

6.5.1.5 Underground utilities

6.5.1.6 Undermining of structures above and/or nearby the excavation

6.5.1.7 Struck-by hazards from falling or rolling rocks and debris

6.5.1.8 Confined space hazards, including hazardous atmospheres and chemical exposures

6.6 **Duties of the Competent Person**

6.6.1 A Competent Person must be on site at all times when workers are reasonably anticipated to be working within an excavation. Subcontractor must identify and submit the qualifications of their Competent Persons before the work begins. Photos will be taken and posted in the site office.

6.6.2 The Competent Person must complete the Excavation and Trenching Checklist and submit it to the Haselden Superintendent for all excavations 5’ deep or greater, or when the Competent Person determines an excavation less than 5’ deep requires protective systems.

6.6.2.1 See Attachment 7.5 of this Program, Excavation and Trenching Checklist.
6.6.3 Competent Persons may **NOT** classify soil as Type A or stable rock without the approval of the Director of Safety and Health or his designee.

6.6.4 Classify the soil by one visual and one manual test method in accordance with 29 CRE 1926 Subpart P, or:

6.6.5 Default to a Type C classification, which does not require the performance of one visual and one manual test.

6.6.6 Determine the appropriate cave-in protective system based on soil type and existing or predictable hazards within or around the excavation.

**NOTE:** A Registered Professional Engineer must be utilized for protective system design for any excavation that exceeds 20 feet in depth.

6.6.7 Perform daily inspections of excavations, the adjacent areas, and protective systems for evidence of possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. Exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

6.6.7.1 An inspection shall be conducted on days when employees will work in an excavation, prior to the start of work and as needed throughout the shift.

6.6.7.2 Inspections shall also be made after every rainstorm or other situation where cave-in hazards may be increased.

6.7 **Hazard Prevention and Control**

6.7.1 Employees cannot work in excavations or trenches that contain water unless they are properly protected. The precautions could include special support or shield systems to protect from cave-ins, or water removal to control the level of accumulating water.

6.7.2 Water removal equipment and operations shall be monitored by a competent person to ensure proper operation.

6.7.3 If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations that have received runoff from heavy rains will require inspection by a Competent Person before employees are allowed to enter.

6.7.4 Concrete barricades/Jersey barriers/K-rail, should be used whenever necessary to separate employees from vehicular traffic.
6.7.5 Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.

6.7.6 No employee shall be permitted underneath loads handled by lifting or digging equipment.

6.7.7 Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped with adequate protection for the operator during loading and unloading operations.

6.7.8 When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, spotters, mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

6.7.9 When materials are stored or when mobile equipment is operated adjacent to an un-shored excavation, the equipment must remain a safe distance from the excavation. This distance will be determined by the allowable slope of the soil based on its soil type classification.

6.7.10 When materials are stored or when mobile equipment is operated adjacent to a shored excavation, the shoring must be designed to withstand the loads imposed by the equipment.

6.7.11 Excavations that are exposed to excessive vibration may require additional safeguards.

6.7.12 Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to stabilize the structures for the protection of employees.

6.7.13 Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted except when:

   6.7.13.1 A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or

   6.7.13.2 The excavation is in stable rock; or

   6.7.13.3 A registered professional engineer has approved the determination that the structure is a sufficient distance from the excavation so as to be unaffected by the excavation activity; or

   6.7.13.4 A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

6.7.14 Protect employees from possible cave-in due to loads from adjacent sidewalks, pavements, trees, utility poles and structures.
6.7.15 Employees shall be protected from loose rock or soil that could pose a hazard by falling or rolling from an excavation face by:

6.7.15.1 Scaling to remove loose material;

6.7.15.2 Installation of protective barricades to stop and contain falling material; or equivalent protection.

6.7.16 Provide falling or rolling debris protection

6.7.16.1 Place and keep materials or equipment at least 2 feet from the edge of excavations,

6.7.16.2 Use retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations.

6.7.16.3 When shoring is used in a sloped excavation, the shoring shall extend 18” above the adjacent soil.

6.8 Soils Classification

6.8.1 The classification of soil shall be made based on the results of at least one visual and one manual analysis. Such analyses shall be conducted by a Competent Person using accepted methods per Appendix A of 29 CFR 1926.

6.8.1.1 In a layered soil system, the system shall be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.

6.8.1.2 If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

6.8.2 Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material. Potential hazards to look for are as follows:

6.8.2.1 Distressed soil. Distress is a condition where a cave-in is imminent or is likely to occur. Signs of distress are fissures in the face of or adjacent to the excavation; subsidence (settlement) of the edge of an excavation; slumping or spalling material from the face of an excavation; bulging material from the bottom of the excavation; and the raveling of small particles of material separating from and trickling into the excavation.

6.8.2.2 Existing utility and other underground structures, crossing or parallel to the excavation, and previously disturbed soil.
6.8.2.3 Layered systems that slope toward the excavation and show evidence of previous shifting.

6.8.2.4 Surface water, water seeping from the sides of the excavation, or the location of the level of the water table.

6.8.2.5 Sources of vibration that may affect the stability of the excavation.

6.8.3 Acceptable manual tests are described in 29CFR 1926 Appendix A. Examples of some manual tests are:

6.8.3.1 Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. If at least a two-inch (50 mm) length of 1/8-inch thread can be held on one end without tearing, the soil is cohesive.

6.8.3.2 The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. Taking a clump or excavated soil from the spoils pile, press the thumb into the sample. If the soil sample is Type A, the thumb will only make an indentation in the soil with great effort. If the soil sample is Type B, the thumb will sink into the soil up to the bottom of the thumbnail. If the soil sample is Type C, the thumb will sink all the way into the soil clump.

6.8.3.3 Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand-operated Shear Vane. Multiple samples must be taken from different areas of the excavation’s spoils pile and their sum averaged.

6.8.4 The Competent Person bears the burden of proof for any soils classification. Written documentation must be prepared. Form 7.5 Excavation and Trenching Checklist can be used as acceptable documentation. REMEMBER: Competent Persons may NOT classify soil as Class A or stable rock without prior approval of the Safety Director.

6.9 Cave-In Protection: Sloping, Benching and Shielding

6.9.1 The maximum allowable slope for excavations/trenches based on soil type is as follows:

6.9.1.1 Stable rock = vertical (90º)

6.9.1.2 Type A = 3/4:1 (53º)

6.9.1.3 Type B = 1:1 (45º)

6.9.1.4 Type C = 1 ½:1 (34º)

6.9.2 Benching of cohesion-less soils is not allowed.
6.9.3 Benching of Type C soils is not allowed.

7.0 Attachments:

7.1 Excavations Made in Type A Soil

7.2 Excavations Made in Type B Soil

7.3 Excavations Made in Type C Soil

7.4 Excavations Made in Layered Soil

7.5 Excavation and Trenching Checklist

7.6 Daily Dig Permit
Excavations made in Type A soil

All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of $\frac{3}{4}:1$.

All benched excavations 20 feet or less in depth shall have a maximum allowable slope of $\frac{3}{4}$ to 1 and maximum bench dimensions as follows:

**SIMPLE BENCH**

**MULTIPLE BENCH**
All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.

**UN SUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 8 FEET IN DEPTH**

All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.

**UN SUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 12 FEET IN DEPTH**
All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of \( \frac{3}{4}:1 \). The support or shield system must extend at least 18 inches above the top of the vertical side.

**SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION**

All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under 1926.652(b).
Excavations Made in Type B Soil

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

**SIMPLE SLOPE**

All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:

**SINGLE BENCH**

This bench allowed in cohesive soil only.
All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

All other sloped excavations shall be in accordance with the other options permitted in 1926.652(b).
Excavations Made in Type C Soil

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1. Benching is not permitted in Type C soil.

SIMPLE SLOPE

All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

VERTICAL SIDED LOWER PORTION

All other sloped excavations shall be in accordance with the other options permitted in 1926.652(b).
Excavations Made in Layered Soils

All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below.

B OVER A

C OVER A

C OVER B
Daily Dig Permit

**Utility Locate Ticket**

**Job Name:**

**Job #:**

**Time:**

**Company Name:**

**Location of Work:**

**Utility Locate Ticket Number:**

**Utility Locate Date:**

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**Utility Locate Checklist**

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**What utilities are in your work area?**

- Cable
- Water
- Electrical
- Fiber
- Fuel
- Gas
- Sewer
- Communications

**Utilities must be marked according to following color codes:**

- White: Proposed Excavation
- Pink: Temporary Survey Markings
- Red: Electric Power Lines, Cables, Conduit, and Lighting Cables
- Yellow: Gas, Oil, Steam, Petroleum, or Gaseous Materials
- Orange: Communication, Alarm or Signal Lines, Cables, or Conduit
- Blue: Potable Water
- Purple: Reclaimed Water, Irrigation, and Slurry Lines
- Green: Sewers and Drain Lines

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**Supervision Signatures Required**

- **Contractor Competent Person**
  - (Print)_________________________(Sign)_________________________(Date)_________________

- **Haselden Superintendent**
  - (Print)_________________________(Sign)_________________________(Date)_________________

**NOTE:** The Competent Person must complete the Excavation and Trenching Checklist and submit it to the Haselden Superintendent for all excavations 5’ deep or greater, or when the Competent Person determines an excavation less than 5’ deep requires protective systems.
Potholing Policy

1. Objective
The purpose of this policy is to describe potholing methods and recommend procedures for potholing.

2. Requirements
Potholing is accomplished through various types of excavation methods and equipment. This Policy covers general methods and procedures. Equipment manufacturer’s instructions shall be followed. Any existing utility that is within 5 feet of a proposed excavation must be potholed to verify utility location before the excavation begins.

3. Practice Description
Potholing is the practice of digging a test hole to expose underground utilities to ascertain the horizontal and vertical location of the utility. Because of electrocution hazards, Haselden employees are prohibited from locating underground electrical utilities.

3.1 Hand Dig
Hand digging a test hole with hand tools such as a shovel can be labor intensive and time consuming. Although hand digging does not require expensive equipment and is relatively safe for locating most utilities, shovels and other hand tools may damage direct buried electrical cable, fiber optic cable, and plastic gas lines. Only fiberglass handle tools shall be used.

3.2 Vacuum Excavation
Vacuum excavation is the preferred method for non-destructive exposure of buried utilities, utilizing either air or water pressure to break up the soil and a vacuum device to collect the spoil. Of the two methods, air vacuum excavation is generally preferred. Specific site characteristics may lead to a decision to use water vacuum excavation. Each equipment manufacturer has specific instructions describing type of nozzle, wand techniques, clearances, maximum pressures and other considerations that must be followed. These instructions should be available on the jobsite and reviewed with the equipment operator before commencing work.

3.2.1 Air
Air vacuum excavators utilize the kinetic energy in a high velocity air stream to penetrate, expand and break-up soil. The loosened chunks of soil and rock are then removed from the hole using a powerful vacuum. In this way a test hole is created that reveals the buried utility. Holes vary in size and shape. A typical test hole is 6 inches to 12 inches in diameter and 4 feet to 6 feet deep. However, a test hole one-foot square is also common, and holes can be considerably deep if required. For example, holes in the excess of 20 feet may be required to locate deep sewer mains. Dry or air excavation has several advantages over water vacuum excavation. For example, the air method is faster in most soils and eliminates the need for mud disposal. Since the spoil remains dry, it can immediately be used for backfilling. Air methods are safer for the operator and the utilities. One shortcoming of air units is that they are not effective in all soil types, especially wet, heavy clay and caliche.

3.2.2 Water
Water vacuum excavation systems dig the pothole using high-pressure water to reduce and loosen the soil. The wet soil and mud slurry are removed to a spoil tank using a powerful vacuum. Like air systems, a hole typically one-foot square or 6 to 8 inches in diameter is common. The maximum hole depth for both systems is dependent on the vacuum limitations. The higher density of water produces powerful forces that are effective in most soils including wet heavy clays. Heated water systems can be used to excavate frozen ground allowing efficient potholing year-round. Operational caution is also necessary as high-pressure water systems have the potential of cutting through cables or damaging pipe if not used with care.

4.0 Call Before You Dig
Colorado Call# 811
Colorado Online Ticket Express http://colorado811.org/ticket-express/
Private Locate Companies http://colorado811.org/private-locate-companies/
# Trenching and Excavation Checklist

Must Be Completed Daily Prior to Employees Entering Excavation

<table>
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<tr>
<th>Date: __________</th>
<th>Job Name: ___________________</th>
<th>Job #: ________</th>
<th>Time: ________</th>
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<tbody>
<tr>
<td>Inspector Name: _____________________________</td>
<td>Signature: _____________________</td>
<td>Current Weather Conditions: ____________________</td>
<td>Excavation Location: ____________</td>
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## Width & Depth of Excavation:

- W _______
- D _______

NOTE: A Registered Professional Engineer must design protective systems for excavations deeper than 20 feet.

### Soil Classification

- Soil has Been Classified as:
  - □ Stable Rock
  - □ A
  - □ B
  - □ C

### Manual Test(s) Performed by Inspector (check all that apply)

- □ Olive Jar
- □ Thumb Penetration
- □ 2’ Strand Test
- □ Penetrometer or Shear vane
- □ Ribbon Test
- □ Dry Strength
- □ Other Test Method ______________________________________________________

### Inspector Visual Tests Checklist

- Are areas of the excavation spalling, shifting or flowing? □ Yes □ No □ N/A
- Are areas of the excavation fissured (cracked)? □ Yes □ No □ N/A
- Is water standing or seeping into the excavation? □ Yes □ No □ N/A
- Have the soil particles been examined for sand/clay content? □ Yes □ No □ N/A
- Has the soil been previously disturbed (utilities, backfill, etc.)? □ Yes □ No □ N/A
- Are there signs the soil shifted naturally prior to excavation? □ Yes □ No □ N/A
- Are sources of vibration present that could affect stability? □ Yes □ No □ N/A

### Safety Systems for Known Hazards

- If confined space hazards are found, follow Haselden’s Confined space policy. If using respirators, refer to Haselden’s Respiratory Protection Program.

- Name hazard controls used.
  - □ air monitor □ ventilation □ respirators □ rescue equip. □ other __________________

- Is cave-in protection required (5’ or deeper) or needed? □ Yes □ No □ N/A
- If so, which cave-in protection system(s) will be utilized?
  - □ sloping □ shielding (trench box) □ shoring □ other_________________________

### Safety Inspection Items

- Proper barricades, cones or other devices in use? □ Yes □ No □ N/A
- All underground utilities located & marked? □ Yes □ No □ N/A
- When 4’ or deeper, ladders in place with travel distance < or = 25’? □ Yes □ No □ N/A
- Spoils piles at least 2’ from edge and appear stable? □ Yes □ No □ N/A
- Adjoining buildings or structures are adequately supported? □ Yes □ No □ N/A
- Do excavations 6’ or deeper with vertical walls have fall protection? □ Yes □ No □ N/A
- Cave-in protection systems designed, installed and used properly? □ Yes □ No □ N/A
Haselden Construction Safety Program

Subject: Fabrication Equipment and Fabrication Areas

Approved By: Safety Department

Date: 1/15/2018

1.0 Purpose

1.1 This procedure outlines the minimum requirements associated with the safe operation, layout, inspection and maintenance of fabrication equipment and fabrication areas. It also identifies employee qualifications and training requirements. This procedure will be used in conjunction with Haselden procedures listed in the reference section.

2.0 Scope

2.1 This program applies to Haselden and subcontractor fabrications and fabrication areas.

3.0 Definitions

3.1 Fabrication Equipment – Machinery or equipment (band saws, power saws, hydraulic and manual presses and breaks, manual and hydraulic benders and punches, power and manual shears, welding machines, plasma cutting machines and pedestal/bench grinders) that requires the employee using the machinery to have special knowledge, training, or experience.

3.2 Qualified Employee – An experienced employee that has received training and has demonstrated competency to operate a specific piece of equipment.

4.0 Reference Documents

4.1 HASELDEN – Personal Protective Equipment (PPE) Procedure and PPE/Task Specific Matrix

4.2 HASELDEN – Defective/Damage Equipment, “Do Not Use” Tags

4.3 HASELDEN – Hearing Protection

4.4 HASELDEN – Welding

4.5 HASELDEN – Fire Prevention, Protection and Extinguishers

4.6 HASELDEN – Tools

5.0 Responsibilities
5.1 **Department Managers/Superintendents/Shop Supervisor** – manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

### 6.0 Implementation

#### 6.1 General Information

6.1.1 Site/Fabrication Shop management will assign an employee to place “**Do Not Use**” tags on all newly installed shop equipment until the provision outlined in this procedure can be applied and the safety requirements determined for each piece of equipment.

6.1.2 Supervisor responsible for fabrication equipment will ensure that the requirements of this procedure are followed.

6.1.2.1 Ensure personnel that perform fabrication and those in close proximity to fabrication work adhere to all health, safety and environmental procedures associated with the task being performed. This includes:

6.1.2.1.1 Wearing the required personal protective equipment (PPE) as outlined in HC Personal Protective Equipment Procedure and the PPE/Task Specific Matrix.

6.1.2.1.2 Identifying safe work procedures and PPE requirements for each piece of shop or fabrication equipment.

6.1.2.1.3 Post signs identifying the type PPE that will be worn when using fabrication equipment and when working or visiting fabrication areas.

6.1.2.2 Ensure gloves, dangling jewelry, rings, or loose fitting clothing are not worn when operating rotating equipment and that long hair is contained within the hard hat.

6.1.2.3 Ensure approved domestically manufactured and lifting equipment rated for the task is available for moving materials and that it is maintained and inspected prior to its use.

#### 6.2 Employee Qualifications And Training

6.2.1 No employee will operate fabrication equipment for which they have not been trained except during training under the direct supervision of a qualified employee.

6.2.2 Establish a written training program to provide employees with necessary information regarding the safe operation of fabrication equipment. As a minimum the training program will include:
6.2.2.1 Daily inspection requirements.
6.2.2.2 Operating procedures.
6.2.2.3 Chemical hazards.
6.2.2.4 Safety hazards and warnings.

6.2.3 Maintain all manufacturer’s manuals and operating instructions on file.

6.3 Safety Inspections

6.3.1 Conduct on a weekly basis utilizing the ComplianceWise inspection system.

6.3.2 The Haselden Safety Department will conduct an inspection randomly to ensure compliance with this entire program and the facility where fabrication is taking place.

6.4 Fabrication Equipment

6.4.1 Defective or damaged fabrication equipment will be tagged and removed from service according to the Haselden “Defective/Damage Equipment, Tools and Devices” procedure.

6.4.2 Fabrication supervisors will:

6.4.2.1 Perform an initial inspection of all new or newly installed fabrication equipment before it is used.

6.4.2.2 Ensure all fabrication equipment is inspected (electrically and/or mechanically) by a qualified employee at least yearly and that a visual inspection will be conducted prior to daily use.

6.4.3 Fabricators and supervisors will:

6.4.3.1 Ensure fabrication equipment is maintained according to the manufacturer’s instructions and any recommendations made by a qualified employee,

6.4.3.2 Ensure a manufacturer’s representative or an employee trained and certified by the manufacturer perform complex maintenance or repairs,

6.4.3.3 Maintain inspection and maintenance records on site and,

6.4.3.4 Provide records/documentation to Haselden upon request.

6.4.4 The management team will ensure:

6.4.4.1 Equipment used for fabrication is not modified or altered without the manufacturer’s written approval, or with the approval of a
registered professional engineer, and with the consent of the Haselden management team and the safety department.

6.4.4.2 That all manufacturer’s written approvals for modifications are maintained on site and provided to Haselden upon request.

6.4.4.3 Homemade tools, fixtures or devices are not to be used without written approval from the Haselden Safety Department.

6.4.4.4 Fabrication equipment must be de-energized (locked out or unplugged with the plug under direct and constant control of the operator) whenever the need arises to change components (chucks, blades, etc).

6.5 Fabrication Areas

6.5.1 Plan and organize fabrication areas so that:

6.5.1.1 Employees have safe access and egress.

6.5.1.2 Material movement is limited.

6.5.1.3 Access to electrical panels and disconnect switches is not blocked and 3-foot clearance is maintained.

6.5.1.4 An adequate number of mounted “ABC” fire extinguishers are provided, access to the extinguishers is not blocked, and a 3-foot clearance is maintained at all times.

6.5.2 Flammable and combustible liquids will:

6.5.2.1 NOT be stored in fabrication areas unless in UL/FM approved flammable liquid storage cabinets.

6.5.2.2 Be returned to the cabinet when not in actual use.

6.5.3 Labeled waste and scrap containers, including those for liquid waste, shall be provided near each fabrication area.

6.5.4 All chemical spills will be cleaned up immediately and reported per Haselden Spill Response Plan.

6.5.4.1 A spill control kit shall be available.

6.5.5 Storage of food and eating or drinking is not allowed in fabrication areas.

7.0 Attachments

7.1 N/A
1.0 Purpose

1.1 This document describes the policy for fall protection as it relates to all Haselden Construction projects, Haselden Construction, and all associated subcontractors and support organizations.

2.0 Scope

2.1 This program applies to all Haselden construction and subcontractor activities and any related work.

3.0 Definitions

3.1 **Anchorage**: A secure point of attachment for lifelines, lanyards, or deceleration devices.

3.2 **Aerial Lift**: A boom lift, extendable boom platform, articulating boom platform, vertical tower, scissor lift, or bucket truck.

3.3 **Body Belts**: A single belt around the waist and are not adequate fall protection since they can cause injury during a severe fall. They are prohibited from being used.

3.4 **Competent Person**: An employee who by either extensive experience or background training is able to recognize hazards associated with fall protection and has the authority to take immediate corrective action. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.5 **Fall Arrest**: The form of fall protection which involves the safe stopping of a person already falling.

3.6 **Fall Protection**: Systems that either prevent a fall or arrest a fall once it has occurred with minimal or no injury to the employee.

3.7 **Fall Restraint**: A type of fall protection with a fixed length lanyard that keeps a worker’s center of gravity from reaching a fall hazard.

3.8 **Five-Point Harness**: A harness that meets the ANSI Z359.1 standard and attaches such that 5 critical points of the employee are supported- both shoulders, both hips and groin.

3.9 **Hole**: A gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.
3.10 **Infeasible:** It is technologically impossible to perform the construction work using conventional fall protection systems (guard rails, nets or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection. (Note: This is a very rare occurrence)

3.11 **Opening:** A gap or void 30 inches or more in height and 16 inches or more in width, in a wall or partition, through which employees can fall to a lower level.

3.12 **Self-Retracting Lanyard:** Also referred to as a “yo-yo” is a fall protection accessory which contains a drum-wound line which can be slowly extracted or retracted. The lanyard extends as necessary to allow the worker to move about the work area, but retracts to maintain slight tension, preventing the line from becoming slack. The drum automatically locks when the line is extracted too rapidly.

### 4.0 Reference Documents

4.1 OSHA 29 CFR 1926.500 subpart M (guardrails, handrails and covers).

4.2 ANSI Z359.1 Fall arrest systems.

4.3 EM 385 1-1 2008, 21. Fall Protection

4.4 Haselden Impalement Protection

4.5 Haselden Concrete and Masonry Construction policy

### 5.0 Responsibilities

5.1 **Director of Safety and Health or Designee:**

5.1.1 Assign responsibilities for implementation of this policy.

5.1.2 Verify compliance with this policy on a periodic basis

5.1.3 Update this program as regulatory bodies or company needs arise.

5.2 **Site Superintendent(s):**

5.2.1 Assure that all site employees are trained in fall protection in accordance with Haselden Construction training requirements before using fall protection equipment or being exposed to fall hazards.

5.2.2 Assure that a JHA has been prepared prior to employees commencing an activity where fall protection is required.

5.2.3 Assure that all equipment is available as necessary.

5.2.4 Periodically review the implementation of this program.

5.2.5 Be a resource as to what points are appropriate for anchorage.

5.2.6 Enforce disciplinary action for violations of this program.
6.0 Implementation

6.1 No employee shall be exposed to heights of 6 feet or greater without a secure means of preventing or arresting a fall. Exception: Loading or off-loading of trucks.

6.2 No employee shall be exposed to heights of 4 feet or greater on SCAFFOLDS, without a secure means of preventing or arresting a fall. Refer to HC Scaffolds policy.

6.3 100% fall protection procedures and techniques will be used in all instances where an employee is exposed to a fall of 6 feet or more.

6.4 Employees shall be protected from impalement. Refer to Haselden Impalement Protection policy.

6.5 For pits and shafts that are 6 feet deep or deeper and 19 inches or greater in any horizontal dimension, guardrail systems or hole covers shall be used. Exception: Drilled piers. Refer to HC Policy Drilled Foundations.

6.6 Masonry operations performed on scaffold heights of 4 feet or greater; fall protection is required for overhand brick laying. One acceptable means is a 32-inch tall masonry wall that has reached sufficient strength to meet the requirements of a standard guardrail.

6.7 Ladder access areas shall be provided with a gate or an offset to prevent employees from walking directly off the edge or into the hole.

6.8 Positioning devices alone are not recognized as a means of fall protection

6.9 Regardless of training in safe work practices given to employees by an employer or employee representative, and notwithstanding industry practice, maintaining employee distance from an unprotected edge shall not be recognized as a means for eliminating the requirement for fall protection provided through use of Personal Fall Arrest Systems, guardrails, or warning lines in accordance with paragraph 6.18 of this Program.

6.10 Guardrails:

6.10.1 Guardrails consist of top-rail, mid-rail, and toe board.

6.10.2 A top-rail should be installed at a height of 42 inches plus or minus 3 inches above the walking/working surface.

6.10.3 When conditions warrant, the height of the top edge may exceed the 45-inch height.

6.10.4 A mid-rail should be installed half the distance between the top-rail and the walking/working surface.

6.10.5 A toe board should be installed at the walking working surface to prevent objects from rolling or being kicked off the edge.
6.10.6 A parapet wall can substitute for a mid-rail as long as it is no lower than half the distance between the top rail and the walking/working surface.

6.10.7 Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, without deflecting 3 inches.

6.10.8 Midrails or their equivalent must be able to support 150 pounds.

6.10.9 Toe boards must be able to support 50 pounds.

6.10.10 Wood guardrails shall be #2 or better lumber grade in good condition, free from holes, splits and splinters.

6.10.11 If wooden post bases are used to attach guardrails to a slab, they shall be attached in accordance with engineered details.

6.11 Wire rope guardrails:

6.11.1 A minimum of 3 wire rope clamps must be used per connection when making an eye in the wire rope.

6.11.2 If two wire ropes are to be joined, interlocking turnback eyes with thimbles are the preferred method. Use thimbles and clips installed in accordance with the manufacturer’s instructions.

6.11.3 An alternate means to join two wire ropes is to lap the standing ends in opposite directions and join them. U bolt clips are not permitted for this method. Only Crosby Fist-Grip clips are to be used, in accordance with the manufacturer’s instructions. The number and spacing of clips varies with rope diameter.

6.11.4 No “Molly Hogan” or interwoven cable splices shall be permitted.

6.11.5 Turnbuckles should be placed in each length for easy maintenance of wire rope guardrail system.

6.11.6 Flagging is required every 6 feet.

6.11.7 All excess wire rope shall be looped and secured back to the original line.

6.11.8 Wire rope ends need to be protected to prevent cuts to employees.

6.11.9 Wire rope used as a guardrail shall not be used as an anchor point for a Personal Fall Arrest System, for positioning, or for fall restraint.

6.12 Vertical members as guardrails

6.12.1 Vertical studs or members may be used as guardrail as long as the distance between studs is not more than 16 inches.

6.12.2 If the members are lighter than 20-gauge, a horizontal support must be added to secure the studs and meet the 200-pound top rail requirement.
6.13  **Personal Fall Arrest Systems:**

6.13.1 All employees will wear and use a five-point harness that meets the ANSI standard Z359.1 when exposed to heights of 6 feet or greater.

6.13.2 Anchors shall support 5,000 pounds per person attached or, if the anchor point is part of a pre-engineered personal fall arrest system, be able to handle at least 2 times the arresting force for each person attached.

6.13.3 Shall be prevented from shearing the lanyard against the exposed edge. Bending the rope over an edge can severely weaken the rope by as much as 70% of its rated strength.

6.13.4 The anchor point must be smooth, gently contoured and rated to take the heaviest expected load.

6.13.5 All parts of the personal fall arrest system shall be inspected by the user at a minimum before each use and on a quarterly basis by a competent person.

6.13.6 No force of more than 1800 lbs. of force shall be distributed across the full body harness during a fall arrest.

6.13.7 Horizontal lifelines and/or other fall arrest systems that utilize wire rope secured with wire rope clamps must use American made, drop forged rope clamps ONLY. No splices are permitted in a horizontal lifeline. All horizontal lifelines must be engineered, and instructions for proper installation and use prepared by a qualified person must be available on site. (Manufactured horizontal lifeline systems are preferred.)

6.13.8 Personal fall arrest systems must limit free fall distance to 6 feet or less before the fall is arrested.

**NOTE:** it is acceptable when permitted by the fall arrest equipment manufacturer to allow more than a 6-foot free fall as long as fall distance calculations show that there is no potential for the employee coming into contact with a lower level or other hazard directly or in a swing and the fall forces do not exceed 1800 pounds across the harness.

6.13.9 Harnesses, lanyards, positioning devices, snap hooks, and all other personal fall arrest system components shall be used only for employee protection. Hoisting materials or other uses other than personal fall protection are strictly prohibited.

6.13.10 **Self-retracting lifelines (SRL)**

6.13.10.1 Shall be used in accordance with the manufacturer's written instructions.

6.13.10.2 Using an SRL with an anchor point below the user's D ring will not guarantee that the SRL will perform properly.

6.13.10.2.1 Increased fall forces are created. There is an increased swing fall potential. Sharp edges can damage or break the lanyard. Many SRLs are not designed or rated for this type of use.
6.13.10.2.2 Therefore, unless the SRL is rated for leading edge work, the anchor point shall always be above the user’s D ring. Supervisors will check the manufacturer’s written instructions.

6.13.10.3 Self-retracting lanyards and lifelines that limit free fall to two feet or less need to sustain, at a minimum, 3,000 pounds applied to the device with the lanyard in the fully extended position.

6.13.10.4 Self-retracting lanyards that do not limit free fall to two feet or less need to sustain, at a minimum, 5,000 pounds applied to the device with the lanyard in the fully extended position.

6.13.10.5 Some retractable lifelines provide a deceleration (energy-absorbing) function. These lifelines can include a feature that slows the fall over a distance of up to 3.5 feet.

6.13.11 Vertical Lifelines

6.13.11.1 Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

6.13.11.2 When vertical lifelines are used, each employee shall be attached to a separate lifeline.

6.13.11.3 During the construction of elevator shafts, two employees may be attached to the same lifeline in the hoist-way, provided both employees are working atop a platform that is equipped with guardrails and the strength of the lifeline and anchorage is at least 10,000 pounds.

6.13.11.4 Lifelines shall be protected against being cut or abraded.

6.13.12 All employees who operate any type of aerial lift must wear appropriate fall protection and be tied off whenever they are operating or working in a lift. Either an SRL or a 4-foot lanyard must be used. If at any time the employee must leave the platform during a lift operation activity, full 100% fall protection must be worn. Standing on the guardrails to perform work is not permitted. Methods to access hard to reach areas that involve exiting the lift may require a written plan, and the approval of the Haselden Safety Director or his designee.

6.13.13 All scissor, boom, or snorkel lifts must be in new or like new condition and have properly rated anchor points for fall protection.

6.14 Fall Protection Planning and Rescue

6.14.1 Employees must prepare a JHA for all activities where personal fall arrest systems will be used for fall protection. The JHA shall include:

6.14.1.1 A requirement for fall distance calculations. Employees shall be able to demonstrate that the equipment they are using will provide adequate clearance from lower levels, from objects below and from swing fall hazards in the event of a fall arrest.
6.14.1.2 Rescue plan and equipment. Details of a written rescue plan are required in each JHA. If the employees rely on another crew to provide fall rescue access equipment, contact names and numbers must be on the JHA, and employees shall notify other employees assisting in the rescue plan before beginning and after completing the work activity requiring the rescue plan.

6.14.1.3 Rescue equipment and rescue assistance shall be available at all times when required by employee activities.

6.14.1.4 Employees performing rescue assistance shall be trained in fall protection, proper rescue techniques and use of rescue equipment.

6.14.1.5 Lone employees working in isolation from other workers shall not be permitted to use PFAS. In the event of a fall, the employee will need assistance.

6.15 Fall Restraint:

6.15.1 Fall restraint systems may be used in lieu of fall arrest systems when the restraint system is rigged in such a way that the employee cannot get to the fall hazard.

6.15.2 Fall restraint systems must have the capacity to withstand at least three thousand (3000) pounds of force or twice the maximum expected force that is needed to restrain the person from exposure to the fall hazard.

6.16 Positioning Devices:

6.16.1 Are not recognized as a means of fall protection alone and need to be used in conjunction with a fall protection system when the employee is 6 feet or more above an adjacent surface or hazardous equipment.

6.16.2 Must limit free fall to a maximum of 2 feet.

6.17 Fall Protection for Rebar Installers, Formwork and Related Work

6.17.1 Employees on the face of reinforcing steel must be protected from falling 6 feet or more to lower levels by personal fall arrest systems. 100% tie off is required. Twin Lanyards must be tied to two separate anchor points.

6.17.2 Tying off to a #3 bar intersection is prohibited. Only #4 bars or larger are permitted for use as an anchor point, with the following additional requirements:

6.17.2.1 Forms must be adequately designed and braced to support live loads of workers climbing rebar.

6.17.2.2 Rebar mats must be secured to support loads imposed by workers.

6.17.2.3 At a minimum, attach rebar to the form at intervals of 6 feet vertical and 6 feet horizontal, beginning at 6 feet from the ground level. Never secure a rebar mat by tie wiring and nailing it to the form.
6.17.2.4 If form ties are not used for securing rebar mats, attach rebar through the form to a waler or strong back using double tie wire, or secure the mat using a rebar t-anchor pushed through the form and secured against displacement on the back side of the form. Hole size shall not exceed 1 ¼”. Nails are not to be used as t-anchors.

6.17.2.5 T-anchors and wire mat supports may be removed from the top down once rebar mats are complete if rusting or wires protruding from the finished wall are a concern.

6.17.2.6 Rebar mats shall be constructed with 16.5-gauge tie wire using double saddle ties with a wrap at no more than 6-foot spacing on vertical frame up bars. Single wire snap ties shall be used at every other intersection.

6.17.2.7 Wall hooks that attach lanyards to rebar mats shall be fastened to the intersection of horizontal and vertical bars if possible. At a minimum, attach fall protection lanyards or positioning lanyards to a back bar. Attaching to face bars of any mat is prohibited.

6.17.2.8 Only 6 foot retractable lanyards, or 4-foot shock absorbing lanyards are permitted when tying off to a rebar mat.

6.17.2.9 Fall distance shall be calculated.

6.17.2.10 A rescue plan is required that considers the possibility that the employee whose fall is arrested is an unconscious victim.

6.17.2.11 Exceptions to this policy must be accepted by the Haselden Safety Director or his designee.

6.18 **Floor Holes:**

6.18.1 All floor holes 2" or more in diameter must be protected from employees or objects falling through.

6.18.2 Holes shall be covered with material capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed while working, driving or walking on them.

6.18.3 Covers must be secured to the floor by positive means.

6.18.4 Covers must be marked with “hole”, “cover”, or a color coding system utilizing high visibility paint.

6.18.5 All floor and roof holes and openings will be covered, secured, and identified as temporary hole covers of adequate strength or barricaded with guardrail systems.

6.19 **Wall openings:**

6.19.1 Where the outside bottom edge of the wall opening is 6 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking working surface, fall hazards will be controlled by the use of a guardrail system or personal fall arrest system.
6.20  **Safety Monitoring systems:**

6.20.1 Are not permitted for use as a fall protection system unless written permission is given by Haselden Construction’s Director of Health and Safety or designee.

6.21  **Safety Net systems:**

6.21.1 Are not permitted for use as a fall protection system unless written permission is given by Haselden Construction’s Director of Health and Safety or designee.

6.21.2 Are permitted as falling object protection as long as they meet the requirements in OSHA 29 CFR 1926.500 subpart M and manufacturer’s requirements.

6.22  **Controlled Access Zones:**

6.22.1 Are not permitted for use as a fall protection system unless written permission is given by Haselden Construction’s Director of Health and Safety or designee. Controlled access zones are not recognized as an effective fall protection method.

6.23  **Limited Access Zones:**

6.23.1 Are permitted for falling object protection.

6.23.2 Visual barriers must be installed around all accessible sides. At a minimum, red danger tape must be used.

6.23.3 Must include signage identifying the company that established and controls the limited access zone, the name of the person in control of the activity and a phone number to contact for entry.

6.23.4 The person in control of the limited access zone must be able to demonstrate that the barrier will provide adequate protection to other workers from falling objects.

6.23.5 During masonry construction:

6.23.5.1 No materials or equipment except masonry and mortar shall be stored within 4 feet (1.2 m) of the working edge.

6.23.5.2 Excess mortar, broken or scattered masonry units, and all other materials and debris shall be kept clear from the work area by removal at regular intervals.

6.23.5.3 See also HC Concrete and Masonry Construction, paragraph 6.6.

6.23.6 During roofing work:

6.23.6.1 Materials and equipment shall not be stored within 6 feet (1.8 m) of a roof edge unless guardrails are erected at the edge.
6.23.6.2 Materials which are piled, grouped, or stacked near a roof edge shall be stable and self-supporting.

6.23.6.3 Erect limited access barriers below the roof if required to control falling object hazards.

6.24 **Warning Line systems:**

6.24.1 All low sloped roofs or deck edges six feet or more in height above the next lower level shall require fall protection. Conventional fall protection systems (guardrail systems, personal fall arrest systems) must be used during roofing activities unless a warning line system has been approved in writing prior to use by Haselden Construction’s Director of Health and Safety or designee. The following details apply:

6.24.1.1 Warning lines must be erected on all sides of the work area.

6.24.1.2 Warning lines must be no closer than 6 feet to the roof edge for roofing operations performed by roofers. When other trades require access to the roof during roofing operations, warning lines will be established no closer than 15 feet from the unprotected edge.

6.24.1.3 Warning lines must no closer than 15 feet to the unprotected edge for all other trades.

6.24.1.4 Warning lines will be marked with high visibility material at least every 6 feet.

6.24.1.5 They must have support stanchions that can withstand a 16-pound tipping moment 30 inches above the walking/working surface. *(Note: Orange cone shaped stanchions with heavy rectangular rubber bases are made for warning lines, and come with safety instructions that describe procedures that conform to those written in OSHA’s Subpart M. Similar stanchions used for traffic control with square or octagonal bases will not pass the tip-over test)*

6.24.1.6 They will be installed between 39 to 34 inches above the roof surface.

6.24.1.7 The rope, wire, or chain must have a minimum tensile strength of 500 lbs.

6.24.1.8 The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

6.24.1.9 Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines.

6.24.1.10 When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path, or the path shall be offset such that a person cannot walk directly into the work area.

6.24.2 Individuals who are observed outside the warning line system without using fall protection will be subject to the Haselden disciplinary policy. A two-day
suspension is the mandatory disciplinary action for the first offense. If the offending individual is found to be in violation of this program a second time they will be permanently removed from the project.

6.25 Fall Protection Plan: This option identified in 29 CFR 1926.502(k) is not permitted on Haselden projects.

7.0 Attachments:

7.1 Fall Protection Quarterly Inspection Report
7.2 Full Body Harness and Shock Absorbing Lanyard Inspection
7.3 Fall Protection Violation Observation Notice
7.4 Calculating Fall Distance
7.5 Crosby Fist Grip Installation Instructions
7.6 Warning line materials.
7.7 Warning Line Procedures
# FALL PROTECTION QUARTERLY INSPECTION REPORT

<table>
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<th>Inspected By:</th>
<th>Signature:</th>
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<td>Project Name:</td>
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**Instructions:**
1. All parts of body harness and attachments are to be checked for excessive wear and damage.
2. The ✓ symbol is for **YES or OK**. The X is for **NO or REPLACE**

<table>
<thead>
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<th>Harness Type</th>
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Any deficiencies or damage found will be cause of tagging out and removal of Harness from use until it can be examined by Haselden’s Director of Safety and Health or Designee/ Fall Protection Supplier.

**Additional Comments:**
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

______________________________________________________________________________
Full Body Harness and Shock Absorbing Lanyard Inspection:

All fall protection equipment should be inspected prior to use!!

The following is a basic guideline for inspection.

All labels must be attached and readable on the Full Body Harness and Shock-Absorbing Lanyard.

A. Full Body Harness Inspection:
   a. Beginning at one end hold the harness and bend it an inverted “U”, this will make it easier to see cracks, frays, holes, cuts, burns or any other damage to the material. Follow this procedure for the entire area of the harness inside and out. If any defects are found, do not use the harness and give it to your foreman.
   b. Check the “D” Rings and “D” ring metal wear pad (if any) for distortion, cracks, breaks, and rough or sharp edges. The “D” Ring should pivot freely.
   c. Attachment of buckles and “D” Rings should be given special attention. Note any unusual wear, frayed or cut fibers, or any distortion of the buckles or “D” Rings. Rivets should be tight and unmovable with your fingers. Bent rivets will fail under stress.
   d. Once again if any damage is found do not use the harness and give it to your foreman.

B. Shock-Absorbing Lanyard Inspection:
   a. Beginning at one end slowly rotate the lanyard so that both sides are checked for cuts, frays, holes, burns, or any other damage. If any defects are found do not use the lanyard and immediately give it to your foreman.
   b. Check all stitched areas for cuts, frays, burns or any other damage.
   c. Check the locking snap hooks/carabineers for movement and make sure the locking mechanism is working properly. Also check the hooks for elongation, cracks, or broken parts.
   d. Check the Shock Absorber covers for cuts, holes, burns, or any other damage.
   e. One again if any damage is found on any part of the shock-absorbing lanyard do not use and give it to your foreman.

All questionable equipment will be immediately taken out of service until it can be inspected again by the Director of Health and Safety and/or the supplier for the extent of the damage. If there are any questions about inspecting the equipment, please ask your superintendent, foreman and/or safety representative.
Fall Protection Violation Observation Notice

The below employee(s) were observed performing an unsafe act or creating an unsafe condition:

Date: _________________      Time: _________________

Company: ________________________       Employee Name(s):________________________
_____________________________________________________________________________

Description of incident:
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

☐ 1st Offense: (2 day suspension and retraining)
☐ 2nd Offense: (Termination)

Comments:
_____________________________________________________________________________
_____________________________________________________________________________

☐ Photo’s attached

Action Plan to correct the condition:
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

I have read and understand this notice:

Employee in Violation__________________________________________ Date ________________

Subcontractor Representative ___________________________________ Date ________________

Haselden Construction Representative ____________________________ Date ________________
7.4 Calculating Fall Distance

**Typical Fall Clearance Calculation**

- Based on free falls up to 6ft and 310lb. personnel

- **6 ft** Length of Lanyard (LL)
- **17 1/2 ft** Required Fall Clearance Distance Using Typical 6 ft Lanyard (RD)
- **3 1/2 ft** Deceleration Distance (DD)
- **6 ft** Height of Suspended Worker (HH)

- **2 ft** Safety Factor (C) Nearest Obstruction

---

**Abbreviations**

- LL = Lanyard Length
- DD = Energy Absorber Deceleration Distance (3.5 Ft Total)
- HH = Height of the Harness Dorsal D-Ring from the Worker’s Feet
- C = Clearance to Obstruction During

---

**Equation**

Fall Arrest (1 Ft Required Plus 1 Ft for D-Ring Movement and System Materials Stretch = 2 Ft Total) = RD = Required Distance Below Anchor Point to Nearest Obstruction

RD = LL + DD + HH + C

---

HC Fall Protection
7.5 Crosby Fist Grip Clips

CROSBY® FIST GRIP® CLIPS

WARNINGS AND APPLICATION INSTRUCTIONS

New Style Fist Grip®
3/16" - 5/8"
Fist Grip® Clips
3/4" - 1-1/2"

**WARNING**

- Failure to read, understand, and follow these instructions may cause death or serious injury.
- Read and understand these instructions before using clips.
- Match the same size clip to the same size wire rope.
- Do not mismatch Crosby clips with other manufacturer’s clips.
- Prepare wire rope end termination only as instructed.
- Do not use with plastic coated wire rope.
- Apply first load to test the assembly. This load should be of equal or greater weight than loads expected in use. Next, check and retighten nuts to recommended torque (See Table 1, this page).

Efficiency ratings for wire rope end terminations are based upon the catalog breaking strength of wire rope. The efficiency rating of a properly prepared loop or thimble-eye termination for clip sizes 1/8” through 7/8” is 80%, and for sizes 1” through 3-1/2” is 90%.

The number of clips shown (see Table 1) is based upon using RRL or RLL wire rope, 6 x 19 or 6 x 37 Class, FC or IWRC; IPS or XIP, XXIP. If Seale construction or similar large outer wire type construction in the 6 x 19 Class is to be used for sizes 1 inch and larger, add one additional clip. If a pulley (sheave) is used for turning back the wire rope, add one additional clip.

The number of clips shown also applies to rotation-resistant RRL wire rope, 8 x 19 Class, IPS, XIP, XXIP sizes 1-1/2 inch and smaller; and to rotation-resistant RRL wire rope, 19 x 7 Class, IPS, XIP, XXIP sizes 1-3/4 inch and smaller. For other classes of wire rope not mentioned above, we recommend contacting Crosby Engineering at the address or telephone number on the back cover to ensure the desired efficiency rating.

The style of wire rope termination used for any application is the obligation of the user.

The style wire rope termination used for any application is the obligation of the user.

For OSHA (Construction) applications, see OSHA 1926.251.

1. Refer to Table 1 in following these instructions. Turn back specified amount of rope from thimble or loop. Apply first clip one base width from dead end of rope. Use torque wrench to tighten evenly, alternating from one nut to the other until reaching the recommended torque.

2. When two clips are required, apply the second clip as near the loop or thimble as possible. Use torque wrench to tighten evenly, alternating until reaching the recommended torque. When more than two clips are required, apply the second clip as near the loop or thimble as possible, turn nuts on second clip firmly, but do not tighten. Proceed to Step 3.

3. When three or more clips are required, space additional clips equally between first two – take up rope slack – use torque wrench to tighten on each Clip evenly, alternating from one nut to the other until reaching recommended torque.

4. If a pulley (sheave) is used in place of a thimble, add one additional Fist Grip. Fist Grip spacing should be as shown.

5. **WIRE ROPE SPLICING PROCEDURES:**

The preferred method of splicing two wire ropes together is to use inter-locking turnback eyes with thimbles, using the recommended number of clips on each eye (See Figure 5).

An alternate method is to use twice the number of clips as used for a turnback termination. The rope ends are placed parallel to each other, overlapping by twice the turnback amount shown in the application instructions. The minimum number of clips should be installed on each dead end (See Figure 6). Spacing, installation torque, and other instructions still apply.

6. **IMPORTANT**

Apply first load to test the assembly. This load should be of equal or greater weight than loads expected in use. Next, check and use torque wrench to retighten to recommended torque.

In accordance with good rigging and maintenance practices, the wire rope end termination should be inspected periodically for wear, abuse, and general adequacy.

<table>
<thead>
<tr>
<th>Clip Size (in.)</th>
<th>Rope Size (in.)</th>
<th>Minimum No. of Clips</th>
<th>Amount of Rope to Turn Back in Inches</th>
<th><strong>Torque in Ft.Lbs.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>3/16</td>
<td>2</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>1/4</td>
<td>1/4</td>
<td>2</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>5/16</td>
<td>5/16</td>
<td>2</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>3/8</td>
<td>3/8</td>
<td>2</td>
<td>5/4</td>
<td>45</td>
</tr>
<tr>
<td>7/16</td>
<td>7/16</td>
<td>2</td>
<td>6/1</td>
<td>65</td>
</tr>
<tr>
<td>1/2</td>
<td>1/2</td>
<td>3</td>
<td>11</td>
<td>65</td>
</tr>
<tr>
<td>9/16</td>
<td>9/16</td>
<td>3</td>
<td>12/3/4</td>
<td>130</td>
</tr>
<tr>
<td>5/8</td>
<td>5/8</td>
<td>3</td>
<td>13/1/2</td>
<td>130</td>
</tr>
<tr>
<td>3/4</td>
<td>3/4</td>
<td>3</td>
<td>16</td>
<td>225</td>
</tr>
<tr>
<td>7/8</td>
<td>7/8</td>
<td>4</td>
<td>26</td>
<td>225</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>5</td>
<td>37</td>
<td>225</td>
</tr>
<tr>
<td>1-1/8</td>
<td>1-1/8</td>
<td>5</td>
<td>41</td>
<td>360</td>
</tr>
<tr>
<td>1-1/4</td>
<td>1-1/4</td>
<td>6</td>
<td>55</td>
<td>360</td>
</tr>
<tr>
<td>1-3/8</td>
<td>1-3/8</td>
<td>6</td>
<td>62</td>
<td>500</td>
</tr>
<tr>
<td>1-1/2</td>
<td>1-1/2</td>
<td>7</td>
<td>78</td>
<td>500</td>
</tr>
</tbody>
</table>

If a pulley (sheave) is used for turning back the wire rope, add one additional clip. See Figure 4.

If a greater number of clips are used than shown in the table, the amount of turnback should be increased proportionately.

*The tightening torque values shown are based upon the threads being clean, dry, and free of lubrication.*
7.6 Warning Line Materials
7.7 Warning Line Procedure

Warning lines are permitted only by written approval of Haselden’s Safety Director or his designee. Haselden Construction agrees to allow Subcontractor to access the work to perform work if all the following procedures are followed.

1. The Competent Person for the exposing employer is responsible to inspect the warning line and correct any deficiencies, such as sags, missing flagging, warning line that has fallen or that is not placed the proper distance from an exposed edge, or missing sections of warning line. Inspection and corrections shall be made daily before work commences.
2. Warning line construction and use must meet the minimum standards of 29CFR1926.502(f). Listed below are Haselden Construction standards that may exceed OSHA requirements.
3. Warning lines must be erected on all sides of the work area to completely enclose it.
4. Warning lines must no closer than 15 feet to the roof edge or nearest edge of a hole.
5. Warning lines will be marked with high visibility material at least every 6 feet.
6. Warning lines will have support stanchions that can withstand a 16 pound tipping moment 30 inches above the walking/working surface. (Note: Orange cone shaped stanchions with large, heavy rectangular rubber bases are made for warning line use, and come with safety instructions that describe procedures that conform with the requirements of OSHA’s Subpart M. Similar stanchions used for traffic control with small square, hexagonal or octagonal bases will not pass the tip-over test)
7. Warning lines will be installed between 39 to 34 inches above the roof surface.
8. The warning line must have a minimum tensile strength of 500 lbs. It may be made of rope, wire or chain.
9. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.
10. Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines.
11. When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path, or the path shall be offset such that a person cannot walk directly into the work area.
12. The warning line shall be maintained in safe condition throughout the work shift.
13. The warning line system may not be crossed by any person. Workers are only allowed to cross the warning line towards the roof edge if they are tied-off beforehand to an anchorage point identified by a qualified person.
14. Individuals who are observed outside the warning line system without using fall protection will be permanently removed from the project.
15. All persons working within warning lines shall be trained in this procedure, which shall become part of the Plan of the Day and Job Hazard Analysis for any work performed using warning lines. This procedure shall be reviewed and signed by all affected employees on a daily basis, and kept with the crew until the end of the shift. A signed copy of this procedure shall be submitted daily to the Haselden Construction Superintendent.

Subcontractor____________________________________  Date________________
Subcontractor Competent Person for Fall Protection Printed____________ Signature____________
Subcontractor Employee Names: Printed     Signatures

1/15/2018
1.0 Purpose

1.1 This program outlines the proper protective and preventative measures to be taken to avoid employee injury, material and equipment loss and potential fire loss to Haselden Construction, its clients and the general public.

2.0 Scope

2.1 This program pertains to all projects with focus on welding and cutting, temporary heating, flammable liquids storage, transfer and application, equipment and vehicular operation, materials storage, housekeeping, electrical transmission and any other potential heat and fuel situations.

3.0 Definitions

3.1 ABC Fire Extinguisher is a multi-purpose fire extinguisher that is UL approved and rated for extinguishing:

3.1.1 Class “A” Fire - Ordinary combustible materials such as wood, cloth, paper, trash, rubber, and plastic.

3.1.2 Class “B” Fire – Combustible or flammable liquid, oil, grease, tar, oil-based paint, lacquer, and flammable gas.

3.1.3 Class “C” Fire – Energized electrical equipment or systems where safety to personnel requires the use of electrically non-conductive extinguishing media.

3.2 Combustible Liquids: Any liquid having a flash point at or above 140°F (60°C.) and below 200°F (93.4°C.). Examples: Diesel fuel, Kerosene.

3.3 Combustion is the reaction from the rapid chemical combination of oxygen with the combustible (burnable) elements of a fuel. The act or process of burning.

3.4 Firewatch is the person(s) assigned to monitor work areas where a potential fire/explosion hazard exists during burning, cutting, welding or other heat producing operations.
3.5 **Flammable Liquids** is any liquid having a flash point below 140° F. (60° C.) and having a vapor pressure not exceeding 40 lbs. per square inch (absolute) at 100° F. Examples: Gasoline, Alcohol, Acetone.

3.6 **Flash Point** is the temperature at which a liquid gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid.

3.7 **Hazardous Area** is any area where flammables or combustible materials, liquids, gases, vapors or dust are present or may be present.

3.8 **Hot Work** is any operation that involves flame, heat, or sparks to do work. This not only includes torch cutting and arc welding, but also includes operations such as copper water pipe soldering/brazing, pipe thawing, metal grinding, torch-applied roofing, asphalt kettles, plasma torches, welding, grinding metal, etc.

3.9 **Hot Work Permit** is a permit authorizing welding, cutting and or other hot work to be done on the jobsite. A permit system is a method to manage hot work operations, and by following the safeguards listed on the permit, the area is made safe for hot work operations. A successful permit system prevents fires from occurring.

3.10 **Oily Waste** is residual waste oil products including petroleum and non-petroleum oil, grease and wax, empty oil and grease containers, and rags, papers or packaging materials that contain oil, grease or wax.

3.11 **Portable Tank** is a closed container having a liquid capacity more than 60 U.S. gallons, and not intended for fixed installation.

3.12 **Safety Can** is a metal approved closed container, of not more than 5 gallons capacity, having a flash-arresting screen, spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

4.0 **Reference Documents**

4.1 OSHA 29 CFR 1926.150/151 Fire Protection and Prevention

4.2 29 CFR 1926.152 Flammable and Combustible Liquids

4.3 29 CFR 1926.154 Temporary Heating Devices

4.4 29 CFR 1926.155 Definitions

4.5 National Fire Codes published by the National Fire Protection Association (NFPA)

4.6 HASELDEN HAZCOM Policy

4.7 HASELDEN Construction Permit Required Confined Space Entry Program

4.8 HASELDEN Compressed Gas and Temporary Heat Policy
5.0 Responsibilities

5.1 Site Superintendent

5.1.1 To implement and maintain the procedures set forth in this program.

5.1.2 Develop a Fire Protection Plan Adequate for the entire life of the project.

5.2 All site employees and subcontractors

5.2.1 Each employee is responsible to comply with all applicable procedures and requirements of this program.

6.0 Implementation

6.1 Fire Protection

6.1.1 All employees will be:

6.1.1.1 Advised of the location of fire extinguishers on the site.

6.1.1.2 Trained on the basic use of a fire extinguisher.

6.1.2 Fire Extinguishers will be:

6.1.2.1 Conspicuously located.

6.1.2.2 Accessible at all times.

6.1.2.3 Certified on an annual basis by a fire protection service company.

6.1.2.4 Inspected periodically (minimum every 30 days) and maintained in operating condition. Inspections must be documented through a tagging system or equivalent. Defective or discharged equipment will be immediately replaced.

6.1.2.5 A fire extinguisher rated not less than 20 ABC will be provided for each 3,000 square feet of the protected building area or major fraction thereof. Travel distance from any point of the protected areas to the nearest fire extinguisher will not exceed 100 linear feet.

6.1.2.6 One or more fire extinguishers rated not less than 20 lb. ABC will be provided on each floor. In multi-story buildings, at least one fire extinguisher will be located adjacent to stairway.

6.1.2.7 Where more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used, a fire extinguisher rated not less than 10 lb. ABC will be provided within 50 feet.
6.1.2.8 Where hot work procedures are being conducted a 10 lb. ABC will be provided by the company performing the work not less than 20 feet.

6.1.3 Fire Sprinkler systems:

6.1.3.1 Will be installed as soon as practicable.

6.1.3.2 Will meet all national, NFPA, and local requirements.

6.1.4 Reporting and extinguishing small fires:

6.1.4.1 Haselden Construction and its subcontractors will instruct their employees if they encounter a small fire, they are to:

6.1.4.1.1 Alert employees nearby of the fire.

6.1.4.1.2 Attempt to extinguish the fire, if they have been trained to use a portable fire extinguisher.

6.1.4.1.3 Contact the Haselden Site Superintendent once the fire has been extinguished.

6.1.5 Reporting large fires:

6.1.5.1 If employees are unable to extinguish the fire or the fire grows beyond incipient stages:

6.1.5.1.1 Notify all employees in the area/building

6.1.5.2 Evacuate the area/building

6.1.5.3 Contact Emergency personnel at 911.

6.1.5.3.1 Please State your name, area/location, size of fire and type of fire (trash, oil, gasoline, electrical, etc.)

6.1.5.4 Contact the Haselden Site Superintendent.

6.1.5.5 Refer to the site specific plan and incident reporting procedures for detail information.

6.2 Fire Prevention

6.2.1 Flammable and Combustible Liquids:

6.2.1.1 Only approved containers and portable tanks will be used for storage and handling of flammable and combustible liquids.

6.2.1.2 Approved metal safety cans will be used for the handling and use of flammable liquids in quantities greater than one gallon.
6.2.1.3 For quantities of one gallon or less, the original container or approved metal safety cans will be used for storage, use and handling of flammable and combustible liquids.

6.2.1.4 Secondary containers will be labeled per GHS requirements. See Attachment 7.3, HC HAZCOM Policy.

6.2.1.5 No on-site storage containers for flammable or combustible liquids are allowed to exceed 55 gallons without written permission from Haselden Construction’s Director of safety and health or designee.

6.2.1.6 Fuel trucks that have mounted tanks in excess to this amount are allowed short term access to the site for refueling of equipment.

6.2.1.7 Flammable or combustible liquids will not be stored in areas used for exits, stairways or the passage of people.

6.2.2 Indoor Storage of Flammable and Combustible Liquids:

6.2.2.1 Not more than 15 gallons of flammable or combustible liquids will be stored in a room outside of an approved storage cabinet.

6.2.2.2 Not more than 55 gallons of flammable or 120 gallons of combustible liquids will be stored in any one storage cabinet.

6.2.2.3 Not more than three such cabinets may be located in a single storage area.

6.2.2.4 Flammable and combustible liquids in excess of that permitted in inside storage rooms will be stored outside.

6.2.3 Storage Outside Buildings:

6.2.3.1 Storage of containers (not more than 55 gallons each) will not exceed 1,100 gallons in any one pile or area. Piles or groups of containers will be separated by a 5-foot clearance. Piles or groups of containers will not be nearer than 20 feet to a building.

6.2.3.2 Within 200 feet of each pile of containers there will be a 12-foot wide access for fire control apparatus.

6.2.3.3 The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or dike at least 12 inches high. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rain water, or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.
6.2.3.4 Outdoor portable tank storage:

6.2.3.4.1 Individual tanks or barrels greater than 55 gallons must receive written permission from Haselden construction's Director of safety and health or designee for temporary storage on site.

6.2.3.4.2 Portable tanks will not be nearer than 20 feet from any building. Two or more portable tanks grouped together having a combined capacity in excess of 2,200 gallons will be separated by a 5-foot clear area. Individual portable tanks exceeding 1,100 gallons will be separated by a 5-foot clear area.

6.2.3.4.3 Within 200 feet of each portable tank, there will be a 12-foot wide access for fire control apparatus.

6.2.4 Fire Control for Flammable or Combustible Liquids Storage:

6.2.4.1 At least one portable fire extinguisher having a rating of not less than 20 lb. ABC will be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.

6.2.4.2 At least one portable fire extinguisher having a rating of not less than 20 lb. ABC will be located not less than 25 feet nor more than 75 feet from flammable liquid storage areas located outside.

6.2.4.3 At least one portable fire extinguisher having a rating of not less than 20 lb. ABC will be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable or combustible liquids.

6.2.5 Dispensing Liquids:

6.2.5.1 Areas in which flammable liquids are transferred at one time, in quantities greater than 5 gallons from one tank or container to another tank or container, shall be separated from other operations by 25-feet distance or by construction having a fire resistance of at least 1 hour.

6.2.5.2 Drainage or other means shall be provided to control spills.

6.2.5.3 Adequate natural or mechanical ventilation shall be provided to maintain the concentration of flammable vapor at or below 10 percent of the lower flammable limit.

6.2.5.4 Transfer of flammable fuels from one container to another will be done only when containers are interconnected (bonded).

6.2.5.5 The dispensing units will be protected against collision damage.
6.2.5.6 Dispensing devices and nozzles for flammable liquids will be of an approved type.

6.2.6 Handling Liquids at Point of Final Use:

6.2.6.1 Flammable liquids will be kept in closed containers when not actually in use.

6.2.6.2 Leakage or spillage of flammable or combustible liquids will be cleaned up promptly and safely.

6.2.7 Service and Refueling Areas:

6.2.7.1 Flammable or combustible liquids will be stored in approved closed containers.

6.2.7.2 The dispensing hose will be an approved type.

6.2.7.3 The dispensing nozzle will be an approved automatic-closing type without a latch-open device.

6.2.7.4 Clearly identified and easily accessible switches will be provided at a location remote from dispensing devices to shut off the power to all dispensing devices in the event of an emergency.

6.2.7.5 There will be no smoking or open flames in the areas used for: fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of flammable or combustible liquids.

6.2.7.6 Signs prohibiting smoking and open flames will be posted for flammables and combustibles.

6.2.7.7 The engines of all equipment being fueled will be shut off during the fueling operation.

6.2.7.8 Each service or fueling area will be provided with at least one fire extinguisher having a rating of not less than 20 ABC located so that an extinguisher will be within 75 feet of each pump, dispenser, underground fill pipe opening and lubrication service area.

6.2.8 Housekeeping and Clean-Up;

6.2.8.1 Regular clean-up (at least daily) of oil, oily waste, paint, grease, flammable solvents and other flammable residue of construction operations is required.

6.2.8.2 All rubbish will be cleared from buildings at least daily and work areas will be maintained free of accumulated debris.
6.2.8.3 Areas beneath and within 10 feet of buildings will be free of accumulated debris and combustible vegetation.

6.2.8.4 All rags, waste, etc., soiled by combustible or flammable materials will be placed in tightly closed metal containers for daily disposal.

6.2.9 Temporary Heating Devices: Refer to HASELDEN Compressed Gas and Temp Heat Policy for additional requirements.

6.2.9.1 All boilers, stoves and other temporary heating apparatus will be installed and operated in accordance with applicable National Fire Protection Codes (NFPA) and local regulations.

6.2.9.2 When heaters are used in confined spaces, special care will be taken to provide sufficient ventilation in order to ensure proper combustion, maintain health and safety of workers and limit temperature rise in the area. Refer to Haselden Construction Permit Required Confined Space Entry Program.

6.2.9.3 Temporary heating devices shall be installed to provide clearance to combustible material not less than the amount shown in Table F-4.

6.2.9.4 Temporary heating devices, which are listed for installation with lesser clearances than specified in Table F-4, may be installed in accordance with their approval.

<table>
<thead>
<tr>
<th><strong>Table F-4</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum clearance, (inches)</td>
</tr>
<tr>
<td>____________________________</td>
</tr>
<tr>
<td>Heating appliances</td>
</tr>
<tr>
<td>Sides</td>
</tr>
<tr>
<td>Room heater, circulating type......</td>
</tr>
<tr>
<td>Room heater, radiant type...........</td>
</tr>
</tbody>
</table>

6.2.9.5 Heaters not suitable for use on wood floors shall not be set directly upon them or other combustible materials. They shall rest on heat insulating material or at least 1-inch concrete, or equivalent. The insulating material shall extend beyond the heater 2 feet or more in all directions.
6.2.9.6 Heaters used in the vicinity of combustible tarpaulins, canvas, or similar coverings shall be located at least 10 feet from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

6.2.9.7 Stability. Heaters, when in use, shall be set horizontally level, unless otherwise permitted by the manufacturer's markings.

6.2.10 Paints and Painting:

6.2.10.1 Containers of paint, varnish, lacquer or other volatile painting materials will be kept tightly closed when not in actual use and stored in accordance with the National Fire Codes.

6.2.10.2 Paint materials in quantities other than required for daily use will be stored in a well-ventilated location free from excessive heat.

6.2.10.3 No smoking or open flame, exposed heating elements or other sources of ignition of any kind will be permitted in areas or rooms where spray painting is done.

6.2.10.4 Ventilation adequate to prevent the accumulation of flammable vapors to hazardous levels of concentration will be provided in all areas where painting is done.

6.2.11 Hot Work Procedures:

6.2.11.1 Before performing welding, cutting, grinding activities that could create sparks or other “hot work” a Welding & Cutting Hot Work Permit must be obtained.

6.2.11.2 Hot Work is considered anything that can be an ignition source. This includes but is not limited to:

6.2.11.2.1 Welding

6.2.11.2.2 Torch Cutting

6.2.11.2.3 Metal cutting

6.2.11.2.4 Anything producing sparks

6.2.11.2.5 Heating with open flame

6.2.11.3 Hot work permits must be filled out completely with all applicable boxes filled, including signatures and dates to be valid.

6.2.11.4 Hot work permits are only good for a maximum of 1 shift.

6.2.11.5 Hot work permits are nontransferable.
6.2.11.6 At minimum a 10 lb. ABC fire extinguisher will be provided within 20 ft. of hot work.

6.2.11.7 Recommend: posting the permit to the fire extinguisher.

6.2.12 Firewatch:

6.2.12.1 The Firewatch is an important member of a work crew in work areas where a potential fire or explosion hazard exists during burning, cutting, or welding operations.

6.2.12.2 The person assigned to this duty must be a worker who can remain calm during a crisis, and be aware of their surroundings while standing in one place for long periods of time.

6.2.12.3 If a fire situation occurs, the Firewatch must take immediate action by shouting a verbal alert, and attempt to extinguish or suppress the fire until help arrives. If attempts at extinguishing the fire fail the Firewatch will evacuate the area.

6.2.12.4 The specific emergency actions will be in accordance with the Emergency Evacuation Plan as developed for the specific worksite.

6.2.12.5 Duties:

6.2.12.5.1 The Firewatch will check the firefighting equipment to assure it is in serviceable condition.

6.2.12.5.2 When using a fire extinguisher in the performance of their duty, the extinguisher will be in position near the person at all times.

6.2.12.5.3 Prior to start of each shift’s work operations, the Firewatch will read the Hot Work Permit for any Special Instructions pertaining to the work.

6.2.12.5.4 The fire watch should post the hot work permit to the fire extinguisher. (Recommended)

6.2.12.5.5 The Firewatch will assure that all sewers, drains, or equipment where the potential of ignition and fire from hot slag exists are covered with fire blankets and sandbagged.

6.2.12.5.6 The Firewatch will survey the work area and remove or have removed flammable material not being used for the work operation. The Firewatch has the authority to STOP WORK whenever a hazardous situation exists.
6.2.12.5.7 The Firewatch will not leave the work area unless relieved by their supervisor or another qualified person.

6.2.12.5.8 The Firewatch will remain in position for 30 minutes after the suspension of work operations. Under certain situations or as noted on the permit, this time may be extended.

6.2.12.5.9 Afterwards, periodic checks (approximately every 15 minutes), should be made for the next 2-4 hours to insure a smoldering fire has not started or is breaking out.

7.0 Attachments:

7.1 Hot Work Permit
The person requesting the permit and a person authorized to issue a permit shall check the following items within at least 35 feet of the proposed work area and resolve any problems prior to issuing the permit.

<table>
<thead>
<tr>
<th>ITEMS TO BE INSPECTED PRIOR TO THE START OF HOT WORK</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>General condition of area housekeeping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Necessary equipment tagged out of service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire protection system in service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove all flammable and combustible materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove or cover flammable and combustible liquid storage cabinets and containers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweep or vacuum away all combustible dusts. Wet the area down after it is cleaned</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check area for combustible vapors ______%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean containers and/or purge or inert any piping or vessels prior to welding, cutting, or heating (if they are used to transport or store flammables or combustibles)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening in floors or walls shall be covered to contain sparks and hot slag</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firewatch equipped with a fire extinguisher and instructed to stay in the area for a minimum of 30 minutes after the work is complete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 lb. ABC Fire Extinguisher located within 20 feet of the operation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work area barricaded or roped off if necessary and protection for other workers in place for any falling sparks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the communications in the area (phones, radios)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notify the appropriate operations area supervision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All hot work personnel trained on site specific hot work procedures and fire suppression duties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do any smoke detectors or heat detectors need to be covered or disabled?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If so list the numbers on the heads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After hot-work is complete verify heads have been uncovered or enabled before closing permit.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: This permit may be revoked at any time for any reason

<table>
<thead>
<tr>
<th>PERMIT AUTHORIZATION AND COMPLETION SIGNATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature of Permit Requestor</td>
</tr>
<tr>
<td>Verification Signature of Haselden Superintendent that permit has been completed</td>
</tr>
</tbody>
</table>

THIS PERMIT IS VALID FOR NO MORE THAN 8 HOURS
Injury and Illness Prevention Program

Subject: First Aid Policy

Approved By: Safety Department

Date: 1/15/2018

1.0 Purpose

1.1 This section describes requirements for providing first aid capability at the job site for Haselden Construction and its subcontractors. Haselden Construction personnel may voluntarily administer first aid when needed. Emphasis is on Basic Life Support and caring for injured workers until medical help arrives.

1.2 Requirements for caring for someone with a bleeding injury are described in the Blood borne Pathogens program.

2.0 Scope

2.1 This procedure applies to all Haselden projects and related work.

3.0 Definitions

3.1 AED, Automated External Defibrillator: A portable electronic device that automatically diagnoses the potentially life threatening cardiac arrhythmias in a patient, and is able to treat them through defibrillation, the application of electrical therapy which stops the arrhythmia, allowing the heart to reestablish an effective rhythm.

3.2 BLS, Basic Life Support: A level of medical care provided by prehospital emergency medical services. Basic life support consists of essential non-invasive life-saving procedures including CPR, bleeding control, splinting broken bones, artificial ventilation, and basic airway management.

3.3 CPR, Cardiopulmonary Resuscitation: An emergency procedure in which the heart and lungs are made to work by manually compressing the chest overlying the heart and forcing air into the lungs. CPR is used to maintain circulation when the heart stops pumping.

3.4 First Aid: The provision of initial care for an illness or injury. It is usually performed by non-expert, but trained personnel to a sick or injured person until definitive medical treatment can be accessed.

3.5 Trauma: An often serious and body-altering physical injury, such as the removal of a limb.

4.0 Reference Documents

4.1 29 CFR 1926.23 First Aid and Medical Attention
4.2 ANSI/ISEA Z308.1-2015 Class A First Aid Kit Requirements

4.3 ANSI/ISEA Z308.1-2015 Class B First Aid Kit Requirements

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

5.2 Subcontractors:

5.2.1 Each subcontractor shall have at least one employee trained in first aid and CPR on the jobsite. The employee shall have proof of training that is currently valid.

5.3 On-Call:

5.3.1 For On-Call work, at least one person on site will be First-Aid/CPR trained.

6.0 Implementation

6.1 Contacting Emergency Services

6.1.1 Verify that a 911 call will contact emergency services before mobilization begins.

6.2 First Aid Kit

6.2.1 Haselden Construction, and each subcontractor shall have at least one fully stocked Class A or Class B First Aid Kit stocked with the contents listed in ANSI/ISEA Z308.1 2015 First Aid Kit Requirements, in accordance with the needs and risks identified by the employer.

6.2.2 Clearly label the first aid kit, and notify all employees where it is.

6.2.3 Inspect first aid supplies monthly.

6.2.4 Restock supplies that have been used; adjust the inventory if necessary.

6.2.5 Document these inspections on the kit or on a safety inspection form.

6.3 Red Trauma Bag

6.3.1 Every project will keep at least one well stocked Red Trauma Bag.

6.3.2 Recommended supplies for the red trauma bag include (see page 3):

6.3.2.1
6.4 First Aid Log

6.4.1 Maintain a First Aid Log.

6.4.2 Document all first aid given on the First Aid Log; all injuries require the completion of an incident report. (See incident reporting)

6.4.3 Contact the Director of Health and Safety if an injury is recordable. This information must be documented on the OSHA 300 Recordable Injury Log.

6.4.4 File these records in the project Safety Filing System:

6.4.4.1 First Aid Log

6.4.4.2 Monthly First Aid Kit Inspections

6.4.4.3 Training Records.

6.5 Cardiopulmonary Resuscitation (CPR)

6.5.1 Call 911 or emergency providers immediately if there is loss of consciousness, breathing, or pulse.

6.5.2 Only authorized, qualified and properly trained employees may attempt to render aid to a person that needs CPR.

6.5.3 CPR is to be performed on a voluntary basis.

6.5.4 CPR certification must remain current for a person to volunteer to perform CPR.

6.6 Automated External Defibrillator (AED)

6.6.1 Emergency Personnel or 911 must be called prior to any activity requiring an AED.

6.6.2 Only authorized, qualified and properly trained employees may attempt to administer an AED.

6.6.3 Any use of an AED is on a voluntary basis.
6.6.4 AED may only be used if the patient is not conscious, not breathing, or has no detectable pulse or other signs of circulation.

6.6.5 AED must be inspected and checked periodically to ensure that the status indicator shows a green check. This indicates the AED is ready for use.

6.6.6 If a Red X is shown in the indicator window please take out of service and see Operators Guide to troubleshoot.

6.6.7 AED manual and manufacturer’s instructions must be followed during use.

6.6.8 Batteries must be replaced every 3 years.

6.6.9 Please alert safety director and safety staff following any use of AED.

6.7 Training

6.7.1 Interested employees may participate in First Aid/CPR/AED training to prepare themselves to administer first aid at work, home, or elsewhere.

6.7.2 First aid training will be offered as required to maintain an adequate staff of providers.

6.7.3 CPR refresher training is recommended at a minimum of bi-annually.

6.7.4 This training should include information about blood borne pathogens.

6.7.5 All training should be documented and a copy of training records sent to the safety department.

6.7.6 All Haselden Salaried Operations staff are required to complete First Aid/CPR/AED training and keep that training current.

7.0 Attachments

7.1 First Aid Kit Requirements
Required Minimum Fill in ANSI/ISEA Z308.1-2015 Class B First Aid Kits:

- 50 - Adhesive Bandages, 1" x 3"
- 2 - Adhesive Tape 2.5 yd
- 25 - Antibiotic Treatment Application, 1/57 oz
- 50 - Antiseptic Applications 1/57 oz
- 1 - Breathing Barrier
- 2 - Burn Dressing, gel soaked, 4" x 4"
- 25 - Burn Treatment, 1/32 oz
- 2 - Cold Pack
- 2 - Eye Covering
- 1 - Eye Wash, 4 oz.
- 1 - First Aid Guide
- 10 - Hand Sanitizer, 0.9g
- 4 - Pair Exam Gloves
- 2 - Roller Bandage, 2" x 4 yds
- 1 - Roller Bandage, 4" x 4 yds
- 1 - Scissors
- 1 - Splint - min 4" x 24"
- 4 - Sterile Pad, 3" x 3"
- 1 - Tourniquet
- 4 - Trauma Pad, 5" x 9"
- 2 - Triangular Bandage, 40" x 40" x 56"
1.0 Purpose

1.1 To establish procedures to assist with compliance of the OSHA standards regarding forklifts and other powered industrial trucks. To reduce or eliminate injuries or property damage occurring during use of forklifts.

2.0 Scope

2.1 This procedure provides minimum requirements for operator training and qualifications, and the inspection, maintenance and use of Powered Industrial Trucks (Forklifts). This procedure does NOT apply to manual “pallet jacks”, but it does apply to motorized hand trucks.

3.0 Definitions

3.1 Competent Person: An employee who is capable of identifying existing and predictable hazards in the surrounding or working conditions which are unsanitary, hazardous, or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them.

3.2 Forklifts: The broad range of Powered Industrial Trucks; platform lift trucks, motorized hand trucks, specialized industrial trucks, and motorized hand trucks.

3.3 Forklift Attachment: Any device that can be added to the basic or main Forklift assembly.

3.4 Powered Industrial Trucks: Forklifts regardless of size, type, or model.

3.5 Qualified Inspector: Any Haselden or subcontractor employee acceptable to Haselden, who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to inspect equipment.

3.6 Qualified Operator: Any Haselden or subcontractor employee, who has received training acceptable to Haselden, has demonstrated competency to operate a specific type of Forklift per OSHA 1910.178 and who has been certified to operate a Forklift by their employer.

4.0 Reference Documents

4.1 29 CFR 1910.178 Powered Industrial Trucks
4.2 OSHA Safety and Health Topics – Powered Industrial Trucks

4.3 OSHA Standard Interpretations – Applicable Standards to Lifting Personnel on A Platform Supported by a Rough-Terrain Forklift

4.4 OSHA Standard Interpretations – Requirements for The Sound Level of a Warning Device (Horn) Located on a Forklift

4.5 OSHA Standard Interpretations – Powered Industrial Truck (forklift) Operator Trainer Qualifications.

4.6 OSHA Standard Interpretations – Powered Industrial Trucks: Examination Prior to Being Placed in Service; Evaluations Conducted Orally Versus Written; Multi-Level Evaluations; Seatbelt Use

4.7 OSHA Directives Compliance – Assistance/Powered Industrial Truck Operator Training Standards

4.8 OSHA Publication # 3252 – Worker Safety Series Construction

4.9 OSHA Publication #2236 – Material Handling and Storage

4.10 OSHA Powered Industrial Truck – Sample Daily Checklists for Powered Industrial Trucks

4.11 OSHA eTool – Powered Industrial Trucks (Forklifts)

4.12 HASELDEN – Defective Equipment, Tools and Devices

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 To manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 General

6.1.1 Have a written procedure that governs the inspection, operation, and operator qualifications of forklifts that:

6.1.1.1 Meets or exceeds the requirements of this procedure and the requirements of OSHA 1910.178.

6.1.1.1.1 Identifies the safety precautions that will be used if the employer is planning on driving forklifts into or onto truck trailers to load or unload materials or equipment.

6.1.2 Supervisors are **NOT** allowed to operate any forklift unless the supervisor:
6.1.2.1 Holds current authorization to operate the forklift based on training and qualification requirements of the OSHA standard.

6.1.3 Modifications or alterations to forklifts will **NOT** be made without prior written authorization from the manufacturer. Subcontractors will retain such written authorization on site.

6.1.4 Forklifts:

6.1.4.1 Will be equipped with an automatic audible backup signal alarm that is audible over the surrounding noise level.

6.1.4.2 Operated on roadways will be equipped with lights, turn signals and brake lights.

6.2 **Operator Training, Testing and Qualifications**

6.2.1 Initial and refresher training will be provided to:

6.2.1.1 Ensure that each forklift operator has the knowledge and skill to operate the forklift safely and to conduct a pre-use safety inspection of the forklift (see Attachment 7.2, Forklift Inspection Checklist),

6.2.1.2 Address the installation and use of forklift attachments that have been engineered, designed and manufactured for that specific class of forklift.

6.2.2 Only qualified operators will be permitted to operate forklifts.

6.2.3 All training, testing, and qualification will be performed by a competent person designated by the employer.

6.2.4 If training is conducted on-site, training will:

6.2.4.1 Be conducted in a location that does not endanger personnel or property.

6.2.5 Document that each operator has been trained and evaluated. Issue employees that have successfully completed forklift training proof of authorization to operate a telehandler using a form similar to Attachment 7.1 – “Forklift Operator Certification”

6.2.5.1 The certification will include:

6.2.5.1.1 The name of the operator,

6.2.5.1.2 Date of training,

6.2.5.1.3 Date of evaluation,

6.2.5.1.4 Name of the competent person performing the training and certification.
6.2.5.2 Instruct employees:

6.2.5.2.1 That they must carry proof of authorization with them at all times while operating the forklift.

6.2.5.2.2 That disabling safety devices on the forklift is grounds for immediate dismissal from the project.

6.2.5.2.3 On conducting, documenting and maintaining daily and pre-use inspections.

6.2.5.3 Maintain training and inspection records on site, and present to Haselden supervisors upon request.

6.2.6 Initial and refresher training, re-evaluation and re-qualification:

6.2.6.1 Following initial training, forklift operators will be refresher trained (re-evaluated and re-qualified) at least every three (3) years. Refresher training will include:

6.2.6.1.1 A written or oral test;

6.2.6.1.2 Hands-on demonstration of operation proficiency for the specific forklift type to be operated.

6.2.7 Refresher training must be provided and documented if the operator:

6.2.7.1 Has been observed operating the forklift in an unsafe manner;

6.2.7.2 Has been involved in an incident or near miss;

6.2.7.3 Has received an evaluation that reveals the operator is NOT operating the forklift safely;

6.2.7.4 Is assigned to drive a different type of forklift;

6.2.7.5 When a condition in the workplaces changes in a manner that could affect safe operation of the forklift.

6.3 Operating a Forklift

6.3.1 Manufacturers’ instructions must be followed when operating any forklift. The manufacturer’s operating instruction manual shall be available on the forklift.

6.3.2 All vehicle traffic regulations will be observed.

6.3.3 No individual will be allowed to stand or pass under the elevated portion of any forklift, or any load.

6.3.4 Transporting, lifting and placing loads

6.3.4.1 Loads will be stable and secured prior to lifting.
6.3.4.2 Loads that extend above the backrest shall be secured against displacement.

6.3.4.3 Loads shall not be suspended from the forks, mast or backrest, unless done in a manner approved in writing by the manufacturer.

6.3.4.4 Forklifts will not be used to elevate personnel

6.3.4.5 Passengers will not be permitted to ride in or on a forklift.

6.3.4.6 Keep body, head and limbs inside the cab while operating the equipment.

6.3.5 Whenever the equipment operator is out of the seat or has left the operator station of the forklift:

6.3.5.1 Controls will be neutralized.

6.3.5.2 Power will be shut off.

6.3.5.3 Parking brakes will be set and wheel chocked, if parked on an incline.

6.3.6 A spotter is required when operating forklift in a work area where striking employees or pedestrians or causing property damage is possible, or when the load creates a safety hazard by obstructing the operator’s view.

6.3.7 The forklift, the mast and the load must not come within 15 feet of any energized electrical equipment or overhead lines.

6.3.8 Ramps and Grades:

6.3.8.1 Ascend or descend slowly.

6.3.8.2 When the ramp or grade exceeds 10 percent (a 10-foot rise in 100 feet), loaded forklifts will be driven with the load upgrade.

6.3.8.3 Turns will not be made unless the ramp itself turns.

6.3.8.4 Loads will be tilted back and raised only as far as necessary to clear the travel surface.

6.3.9 Forklifts with Solid Rubber Tires:

6.3.9.1 Are designed to operate on concrete or asphalt.

6.3.9.2 Will not be operated on dirt or other soft surfaces.

6.3.9.3 Should the need arise to operate forklifts with solid rubber tires on unpaved surfaces, the area must be compacted, smooth, and rut free.
6.3.10 Only electrical-powered forklifts or internal-combustion-engine-powered forklifts that are equipped to minimize carbon monoxide emissions will be operated inside of a building.

6.3.11 Motorized Hand Trucks

6.3.11.1 Must have adequate skirts to prevent the operator's feet from being trapped under the hand truck.

6.3.11.2 Must be equipped with an automatic shutoff such that when the handle throttle is released the equipment will shut down.

6.4 Forklift Attachments

6.4.1 Must only be used per manufacturer's recommendations and instructions.

6.4.2 Forklifts equipped with attachments will be operated as "partially loaded" (because of the attachment) when not handling a load.

6.4.3 Loads shall not be lifted by any means other than with the load resting on the forks, or from a manufacturer provided boom lift point, unless written approval from the forklift manufacturer is obtained. Free rigging is the direct attachment to or placement of rigging equipment (slings, shackles, rings, etc.) onto the tines of a forklift for a below-the-tines lift. Free rigging or rigging from the carriage or backrest is prohibited.

6.4.4 Only those attachments that have been engineered, designed and manufactured for a specific make or model forklift by written approval from the forklift manufacturer may be used.

6.4.5 Approval letters for attachments shall be available on site.

6.5 Inspections

6.5.1 All forklifts (owned or rented) will be inspected prior to use on the project, following repairs, and daily.

6.5.2 Initial and post repair inspections will be:

6.5.2.1 Performed by a qualified inspector.

6.5.2.2 Documented on Attachment 7.2 – "Forklift Inspection Checklist" or a similar checklist form.

6.5.2.3 Documentation must be onsite or readily available to Haselden Management upon request.

6.5.2.4 A trained inspector or operator will:

6.5.2.4.1 Conduct the daily/pre-use inspections,

6.5.2.4.2 Document the inspection,
6.5.2.4.3 **NOT** operate any forklift if deficiencies are identified during the daily or pre-use inspection.

6.5.2.4.4 Place a **“Defective – Do Not Use”** tag on the steering wheel, window or any conspicuous area of the equipment.

6.5.2.4.5 Inform their supervisor that the equipment has been tagged, **“Defective – Do Not Use”**.

6.5.2.4.5.1 Exception: Use may be permitted with a spotter if the equipment can be operated safely and repaired promptly.

6.6 Maintenance

6.6.1 Preventive Maintenance:

6.6.1.1 Conduct according to the manufacturer’s recommendations.

6.6.1.2 Records for each forklift will be retained on site by the employer.

6.6.1.3 Records will be provided to the Haselden supervisor upon request.

6.6.2 All repairs will be made by a competent person in accordance with the manufacturer’s requirements.

6.6.3 Refueling:

6.6.3.1 Forklift’s engine will be shutdown prior to refueling.

6.6.3.2 A fire extinguisher will be readily available during refueling.

6.6.3.3 If a spill occurs it will be cleaned up in accordance with Haselden requirements and governmental regulations.

6.6.4 Hose and Line Failure

6.6.4.1 Hydraulic lines, fuel lines, and the cooling system must be maintained to prevent leakage.

6.6.4.2 If a line or system fails, spilled fluid or fuel shall be cleaned up and disposed of in accordance with Haselden requirements and governmental regulations.

7.0 Attachments:

7.1 Forklift Daily Inspection Form
# TELESCOPIC FORKLIFT
## DAILY INSPECTION FORM

**Equipment Description:** ________________________________

**Equipment Model:** ________________________________  **Date:** ________________

**Company Name:** ________________________________

<table>
<thead>
<tr>
<th>INSPECTION ITEMS</th>
<th>CONDITION (Check One)</th>
<th>REMARKS/ COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator Manual In Equipment</td>
<td>GOOD/Fair/Bad</td>
<td></td>
</tr>
<tr>
<td>Operator (Current Certification)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Extinguisher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load Charts Posted In Cab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Decals Intact and Legible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functioning Boom Angle Indicator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functioning Horizontal Level Indicator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back Up Alarm Is Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horn Is Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Condition/ Wear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel Lug Nuts Tight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forks In Good Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brakes Function Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive Function Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking Brake</td>
<td></td>
<td></td>
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<tr>
<td>Steering Function Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Gauges Function Proper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check Fuel Level/ No Leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Window Glass In Good Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outrigger Function Test (Up/Down)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROPS (Roll Over Protection System)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seat Belt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boom Function Test (In/Out/Up/Down)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carriage/ Fork Assembly/ No Damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carriage Function Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cab Is Free From Debris</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Induction/ Clean Filter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Clean/ Secured</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Cylinders/ No Leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Hose/ No Cracks Or Leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Fluid Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolant System/ No Leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Oil Level/ No Leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission Fluid Level/ No Leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belts &amp; Hoses In Good Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OEM Nuts and Bolts (Tightened)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** These items are to be inspected prior to operating the forklift. Immediately report all items in need of service or repair to your supervisor so proper maintenance can be performed. DO NOT OPERATE DEFECTIVE EQUIPMENT!

**Inspectors Name:** ______________________________  **Signature:** ______________________________

Revision Date 6-17-2019
Haselden Construction Safety Program

Subject: Gas Welding, Torch Cutting, Soldering, and Brazing

Approved By: Safety Department

Date: 1/15/2018

1.0 Purpose

1.1 This procedure describes minimum requirements for performing welding, torch cutting, brazing and propane soldering. It addresses:

1.1.1 Operating, inspecting, and testing electric arc, oxygen and fuel gas equipment that will be used to perform this hot work

1.1.2 Fire protection and spark containment during welding, soldering, and torch cutting work.

1.1.3 Protection of personnel and personal exposure monitoring.

1.1.4 Welding, torch cutting, soldering and brazing in confined spaces.

1.2 This procedure does NOT address:

1.2.1 Cutting, welding, gouging, brazing, etc. of metals with paints or coatings containing lead

2.0 Scope

2.1 This program applies to all Haselden projects and subcontractors.

3.0 Definitions

3.1 Brazing - A hot work process whereby metals are joined by heating materials to suitable temperatures above 840°F using a nonferrous filler metal with a melting point below that of the base metal

3.2 Confined Space:

3.2.1 A space that is large enough and so configured that an employee can bodily enter and perform assigned work;

3.2.2 Has limited or restricted means for entry or exit (for example, tanks, vessels, coolers, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
3.2.3 Is not designed for continuous occupancy.

3.3 **Flame-Resistant Material** – Material that burns slowly or is self-extinguishing after the external source of ignition is removed.

3.4 **Hot Work** – The riveting, welding, torch/flame cutting, electrical arc welding or the use of oxygen-fuel gas equipment to cut, heat, melt, braze, etc. metals either to join together or separate.

3.5 **Permit-Required Confined Space (Permit Space):** A confined space that has one or more of the following characteristics:

3.5.1 Contains or has a potential to contain a hazardous atmosphere;

3.5.2 Contains a material that has the potential for engulfing an entrant;

3.5.3 Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

3.5.4 Contains any other recognized serious safety or health hazard.

3.6 **Qualified Inspector** – An experienced employee who has demonstrated their ability to inspect equipment.

3.7 **Qualified Person** – An experienced employee who has:

3.7.1 Skills and knowledge related to the construction, installation, and operations of equipment that will be used during welding operations

3.7.2 Received training on the potential occupational health, safety and environmental hazards associated with welding and the equipment associated with performing the task

3.7.3 Demonstrated competency in performing the task and in using specific equipment safely.

3.8 **Soldering** - The joining of two metal surfaces with nonferrous filler metal (solder) that melts at a temperature below that of the metals to be joined. Lead, tin, and "silver" solder (which may contain cadmium), zinc, chloride and fluorides are common materials used in the soldering process. The melting temperatures of the solder and the composition of the filler determine the type of soldering.

3.9 **Welding** - The heating of a metal above its melting point, causing it to fuse to another metal surface. The major difference between the types of welding processes is the heating method of the metals and the method used to protect the heated area from solidifying before the metal unites

4.0 **Reference Documents**
5.0 Responsibilities

5.1 Superintendent – manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

6.0 Implementation

6.1 EMPLOYEE TRAINING

6.1.1 Only trained, qualified employees will perform welding operations.

6.1.2 Train all welders performing oxygen-fuel gas, methyl acetylene propadiene (MAPP) gas and/or propane welding, cutting, soldering, etc., in the proper care, maintenance, and use of equipment. As a minimum, employee training will address:

6.1.2.1 Compressed gas cylinders

6.1.2.2 Regulators

6.1.2.3 Torches

6.1.2.4 Flashback arrestors and check valves

6.1.2.5 Personal Protective Equipment (PPE) requirements and adequate ventilation

6.1.2.6 Fire prevention practice
6.1.3 Personnel assigned the duty of “fire watch”, as well as employees performing hot work will be trained in the use of fire extinguishers.

6.1.4 Employers whose employees perform work in confined spaces shall have a written program that complies with 29 CFR 1926.1153, Confined Spaces in Construction.

6.1.5 Personnel performing hot work in confined spaces shall be trained to work in Permit Required Confined Spaces

6.1.6 Supervisors will monitor all newly trained and newly hired employees for proficiency and safe operation

6.1.7 Personnel performing inspection and testing of welding equipment must be trained on inspection and testing requirements and methods for the equipment they are testing.

6.1.8 Subcontractors shall provide Haselden site management a copy of training, inspection, and exposure monitoring and other records upon request.

6.2 EXPOSURE MONITORING

6.2.1 Air sampling to verify the concentration levels of toxic fumes and gases may be necessary to determine if respiratory hazards are created in the cutting, welding, or burning of certain metals and compounds such as lead base metals, zinc, cadmium, mercury, beryllium, or exotic metals and paints.

6.2.1.1 Mechanical ventilation must be used as an engineering control before respiratory protection can be implemented.

6.2.1.2 Where respiratory hazards can be reasonably estimated, an appropriate respirator may be used, in combination with respiratory protection, while air sampling is being performed.

6.2.1.3 Where respiratory hazards cannot be reasonably estimated, the atmosphere must be considered IDLH, immediately dangerous to life and health.

6.2.1.4 Compliance with 29 CFR 1910.134 and the HASELDEN Respiratory Protection Program is required for all respirator use.

6.3 EQUIPMENT INSPECTION AND TESTING REQUIREMENTS

6.3.1 Employees will inspect all equipment prior to use.

6.3.1.1 Inspect for leaks, burns, worn areas and other defects
6.3.1.2 Defective equipment or equipment without current inspection must be tagged with a “Defective – Do Not Use” tag and removed from service.

6.3.2 The qualified inspector will:

6.3.2.1 Inspect and test all components of oxygen-fuel gas equipment prior to their initial use on site.

6.4 OXYGEN AND FUEL GAS EQUIPMENT REQUIREMENTS

6.4.1 Provide reverse-flow UL approved check valve attached directly to the oxygen-fuel gas torch.

6.4.2 Provide a UL approved flashback arrester attached where the gas hose enters the regulator.

6.4.3 If the torch manufacturers have placed UL approved check valves into the torch, then additional torch check valves are not required.

6.4.4 Oxygen will not be used in a hose designed for fuel gas and a fuel gas hose will not be used for oxygen.

6.5 FIRE PREVENTION AND PROTECTION

6.5.1 A Hot Work Permit must be requested and issued by Haselden for all hot work activities. See Definitions and HASELDEN Fire Prevention and Protection Policy.

6.5.2 Haselden site management must approve any hot work on any metal drum, barrel, tank, container or hollow structure only after the following has been achieved.

6.5.2.1 Drums, barrels, tanks, containers, or hollow structures that contained toxic or flammable substances must be filled with water or must be thoroughly cleaned of previous contents, ventilated and tested before applying heat.

6.5.2.2 Before heat is applied, a vent or opening will be provided for the release of any built-up pressure during the application of heat.

6.5.3 Designated Hot Work Zone

6.5.3.1 Haselden onsite management must review and approve any hot work zone which will not require a daily hot work permit.

6.5.3.2 A dedicated fire watch may not be required in a designated hot work zone at Haselden’s discretion.

6.5.3.3 Providing fire extinguishers and fire blankets, removal of combustible materials, and/or wetting the area down will be
performed as required by environmental conditions and work activities.

6.5.3.4 Whenever the project management team or local authorities issue a “burn ban”, a dedicated fire watch will always be required.

6.5.4 Welding, Cutting, Soldering During Construction

6.5.4.1 Prior to beginning the welding, soldering, torch cutting, employees will:

6.5.4.1.1 Ensure A 10 pound “ABC – Class” fire extinguisher (minimum size) is within 20 feet of ALL hot work regardless of where the hot work is being performed

6.5.5 Inspect the work area (around, behind and below) to ensure sparks, molten metal, or hot slag will not fall on workers, combustible or flammable materials, gas hoses, or welding leads.

6.5.5.1 Combustible material will be relocated at least 35 feet from the hot work, or the work will be covered by fire blankets.

6.5.5.2 Flammable materials will be relocated at least 50 feet from the hot work, or the hot work will be relocated.

6.5.5.3 Nearby Openings - All cracks or openings in the floor within 35 feet of hot work shall be covered or closed or precautions shall be taken to protect flammable or combustible material on the floor below from sparks which might drop through the openings. The same precautions shall be observed with regard to cracks or openings in walls, open doorways, or open or broken windows.

6.5.5.4 When hot work is being done near combustible walls, partitions, ceiling or roofs, fire resistant shields or guards will be used to prevent ignition.

6.5.5.5 Barricades must be established and maintained when hot work is being performed overhead

6.5.5.6 The employee on Fire Watch duty must be equipped with a minimum of 10 pound “ABC – Class” fire extinguisher.

6.5.5.7 Fire Watch must remain in place for at least 30 minutes after hot work completion

**Note:** Roofing and other activities may require a longer fire watch period after hot work is completed. See HC Hot Work Policy

6.5.6 Where it is necessary to observe areas that are hidden from the view of a single fire watcher (other side of partitions, walls, ceilings, etc.) additional fire watchers shall be posted.
6.6 PERSONAL PROTECTIVE EQUIPMENT

6.6.1.1 Long-sleeved natural-fiber (cotton) shirt, un-tucked and completely buttoned in front and at the wrists

6.6.1.2 Leather Welders Gloves or equivalent shall be worn by personnel performing hot work

6.6.1.3 Wear the proper eye protection.

6.6.1.4 Use a non-combustible screen if oxygen and fuel gas welding is being performed near arc-welding

6.6.1.5 Hard hats with welding hoods are required

6.6.1.6 ANSI rated safety glasses with side shields are required under welding hoods

6.6.1.7 Burning goggles are required for all oxygen-fuel gas operations

6.6.1.8 Welding hoods and burning goggles will have filter plates of the recommended shade and cover plates and be designed for easy removal. All filter lenses and plates shall meet ANSI Z87.1 – American National Standard Practice for Occupational and Educational Eye and Face Protection

6.6.1.9 Before respiratory protection is used, the employer shall use feasible engineering controls to reduce respiratory hazards to levels below the Permissible Exposure Limit (PEL).

6.6.1.10 Respiratory protection is required for personnel performing hot work when feasible engineering controls (local exhaust ventilation, general ventilation or natural ventilation) fail to reduce inhalation exposure to levels below the PEL.

6.6.1.10.1 Safety Data Sheets (SDSs) will be reviewed to determine requirements for personal and area monitoring as well as requirements for respiratory protection.

6.6.1.10.2 Respirators will be suitable for the contaminants to which employees are exposed.

6.6.1.10.3 Local ventilation will be used to exhaust the products of combustion when hot work is being performed inside a closed structure.

6.6.2 Employees within 10 feet of any hot work will wear the same PPE as the person performing the actual hot work.

6.7 HOT WORK IN CONFINED SPACES

6.7.1 Hot Work in Confined Spaces shall be considered a hazard that requires the confined space to be classified as Permit Required.

6.7.2 Ventilation in confined spaces shall be sufficient to assure adequate oxygen for life support, to prevent accumulation of asphyxiates or flammable or explosive mixtures, to prevent oxygen-enriched atmospheres, and to keep airborne contaminants in breathing atmospheres below allowable limits.

6.7.3 Work in confined spaces requires special precautions. Workers, including both owner and contractor personnel, should be familiar with written confined space work program guidelines or should have the work supervised by a trained person. Asphyxiation causes unconsciousness and death without warning. Oxygen enriched atmospheres greatly intensify combustion, and may rapidly cause severe and often fatal burns.

6.7.4 Confined spaces shall not be entered unless they are well ventilated and tested to assure they are safe for entry. When it is not practical to maintain the space safe for entry, the space shall only be entered when the following conditions are met:

   6.7.4.1 The space has been tested and determined not to present an oxygen deficient or oxygen enriched atmosphere, a hazard of fire or explosion, or an atmosphere hazardous to life;

   6.7.4.2 A rescue plan is in place that meets the requirements of 29 CFR 1926.1211.

6.7.5 Testing Atmospheres. Confined spaces shall be tested for toxic or flammable gases, dusts, and vapors, and for adequate or excess oxygen before entering and during occupancy. The same precautions shall apply to areas such as pits, tank bottoms, low areas, and areas near floors when heavier than air gases and vapors are present, and to areas such as tank tops, high areas and near ceilings when lighter than air gases are present.

6.7.6 Gases such as argon, propane and carbon dioxide are heavier than air. Gases such as helium and natural gas are lighter than air.

6.7.7 Adjacent Persons. Adequate ventilation in confined spaces shall be assured not only to protect welders or cutters themselves, but to protect all personnel who may be present in the area.
6.7.8 Air Quality and Quantity. The quality and quantity of air for ventilation shall be such that personnel exposures to hazardous contaminants are maintained below allowable limits.

6.7.9 Breathing air supplied by cylinders or compressors shall meet the Grade D requirements of ANSI/CGA G-7.1.

6.7.10 The supply air line for respirators shall be a dedicated line that is not capable of being valved to any other line which could allow hazardous or toxic gases into the respirator air line.

6.7.11 Additional information on air quality for respirators and their use can be found in 29 CFR 1910.134, and in the Haselden Respiratory Protection Program.

6.7.12 Prohibited Ventilation Gases. Oxygen, or any other gas or mixtures of gases, except air, shall not be used for ventilation.

6.8 WELDER RESPONSIBILITIES

6.8.1 Oxygen will never be used for any purpose other than oxygen-fuel gas welding operations.

6.8.2 If using acetylene as the fuel gas, never exceed 15 psi regulator pressure.

6.8.3 Compressed gas cylinder valves will be closed whenever the oxygen-fuel gas equipment is not actually being used and the pressure on the hoses shall be bled down.

6.8.4 Excess oxygen and/or fuel gas hoses will be kept rolled up on cylinder carts.

6.8.5 Hoses being used will be placed so sparks and slag do not fall on them and will be protected from damage of personnel and equipment.

6.8.6 At the end of the shift or when work is complete, the regulator must be removed from the cylinder and protective cylinder cap reinstalled.

6.8.7 When removing or installing regulators keep all sources of oil and grease such as dirty gloves or grease covered clothing away.

6.8.8 When a regulator is not connected to a compressed gas cylinder, the threaded compression nipples shall be capped to prevent dirt and foreign matter from entering.

6.8.9 Hoses, torches and regulators shall be stored in a well-ventilated, clean, dry, oil-free area in a manner to protect them from physical damage. NEVER store in any closed container such as a gang box.
6.8.10 Matches or cigarette lighters will not be used to light torches; torch strikers shall be used. Torches shall not be used to light smoking materials.

6.8.11 Welding rod cans:

6.8.11.1 Employer will designate selected personnel to handle welding rod cans

6.8.11.2 Rod cans will be opened per the manufacturer’s instructions, using the recommended opening tool and cut resistant gloves

6.8.11.3 Rods will be removed from can and stored according to manufacturer’s instructions

6.8.11.4 Open, metal welding rod cans will NOT be used to store or dispense welding rods or for any other purpose

6.8.11.5 Rod cans will be immediately disposed of in dumpsters or scrap metal containers

7.0 Attachments

7.1 Setting up the Equipment
7.2 Lighting/Relighting the Torch
7.3 Closing the System
7.4 Guide for Conducting Quarterly Tests
7.1 SETTING UP THE OXY-FUEL EQUIPMENT

Step 1: When not in use, compressed fuel-gas cylinders must be secured in the upright position with cylinder valve protector caps in place.
Reason: Cylinder valves can easily be knocked off, rapidly releasing the fuel gas and discharging the cylinder.

Step 2: Before installing a regulator on an oxygen or fuel cylinder, inspect the regulator valves and the cylinder valves for oil or contaminants. Do not use dirty components. Check the cylinder valves for leaks around the valve packing glands. Also check the cylinder valve threads for damage.
Reason: Oil and grease in the presence of oxygen can cause an explosion. Dirt and foreign matter can prevent the regulator and the cutting equipment from working properly. Loose cylinder valves or fittings allow leaks.

Step 3: Standing to one side of the valve nozzle, crack the cylinder valves. (If the cylinder must be opened in a confined space, do this carefully.)
Reason: This technique will blow any dirt out of the nozzle without injuring the operator.

Step 4: Check to ensure the regulator has a backflow preventer at the hose connection point. Release the tension on the regulator by adjusting the screw counterclockwise. Attach the regulator to the cylinder. Do not over-tighten the regulator compression nuts at the cylinder valves.
Reason: The backflow preventer keeps a flame in a broken hose from entering the compressed gas cylinder. Releasing tension prevents damage to the regulator diaphragm and to the regulator valve seat. Also, this will not give the operator a "full system" of gases before he or she can check the hose and torch. Over-tightening pulls the threads on both the regulator valves and the cylinder valves, eventually causing leaks.

Step 5: Open the oxygen cylinder valve slowly, standing to one side of the regulator and the gauge.
Reason: This technique limits the risk of explosions and injuries to the operator. These accidents typically occur in the front or the back of the regulator and the gauge.

Step 6: Fully open the oxygen cylinder valve.
Reason: The oxygen valve tightly seals when it is fully open or fully closed, but may leak when it is in an intermediate position.

Step 7: Open the fuel-gas cylinder valve. (Acetylene cylinder valves should not be opened more than 3/4 turn. Other cylinder valves may be opened fully.)
Reason: The fuel-gas cylinder valve (other than acetylene) tightly seals when it is fully open or fully closed, but it may leak when it is in an intermediate position.

Step 8: Attach the hose to the regulator. If the hose is new or has been out of service, purge it for five seconds for every 50 feet of hose.
Reason: Purging removes contaminants from the hose, ensuring that it does not contain an explosive mixture of residual fuel gas and air.

Step 9: Check the seating surfaces and the O-rings of the torch. Assemble the torch. Make sure the torch has a built in check valve for oxygen and acetylene.
Reason: This technique reduces the risk of leaks and backflow that could cause a fire.

Step 10: Check the orifice of the nozzle. If it is blocked, clean it only with a nozzle-cleaning tool. Do not rub the cutting or heating tip on any soft material (such as wood) to clean the tip.
Reason: Cleaning the nozzle removes any obstructions, a prime cause of backfires.
7.2 LIGHTING THE TORCH

Adhere to the following steps when lighting the torch:

**Step 1:** Open the fuel-gas valve on the torch. Then set the fuel-gas cylinder regulator to the recommended pressure: not more than 30 psi for fuel gas, and less than 15 psi for acetylene. Close the torch fuel-gas supply valve, then the fuel-gas cylinder valve. Watch the regulator pressure gauges. If the pressure drops, check for leaks in the assembly. If the pressure remains constant, reopen the fuel-gas cylinder valve slowly.

**Reason:** These techniques set the correct pressure, check for leaks, and purge the line of any explosive gas mixtures.

**Step 2:** Open the oxygen valve on the torch. Then set the oxygen cylinder regulator to the recommended pressure per the tip manufacturer’s tip chart, but not to exceed 80 psi. Close the torch oxygen supply valve, then the oxygen cylinder valve. Watch the regulator pressure gauges. If the pressure drops, check for leaks in the assembly. If the pressure remains constant, reopen the oxygen cylinder valve slowly.

**Reason:** These techniques set the correct pressure, check for leaks, and purge the lines of explosive gas mixtures.

**Step 3:** Open only the torch fuel-gas valve to a high flow rate. Light the torch with an approved torch striker.

**Reason:** A high flow of fuel gas cuts down on smoke. Lighting only fuel gas reduces the risk of flashback.

**Step 4:** Reduce the gas flow until the flame starts to smoke. Open the oxygen valve on the torch slowly to get the desired flame.

**Reason:** This technique sets the correct flow of fuel gas and oxygen for the torch tip. If less heat is required for heating, welding, or brazing, change the tip. Do not reduce the pressure or the flow of either fuel gas or oxygen.
RE-LIGHTING THE TORCH

Adhere to the following steps when re-lighting the torch:

**Step 1:** Always re-purge the system by opening and re-closing the fuel gas torch valve.  
**Reason:** This technique removes any explosive mixtures that may have accumulated in the system.

**Step 2:** Re-purge the oxygen line by opening and re-closing the oxygen torch valve.  
**Reason:** This technique removes any explosive mixtures that may have accumulated in the system.

**Step 3:** Open only the torch fuel-gas valve to a high flow rate. Light the torch with an approved spark lighter.  
**Reason:** A high flow of fuel gas cuts down on smoke. Lighting only fuel gas reduces the risk of flashback.

**Step 4:** Reduce the gas flow until the flame starts to smoke. Open the oxygen valve on the torch slowly to get the desired flame.  
**Reason:** This technique sets the correct flow of fuel gas and oxygen for the torch tip. If less heat is required for heating, welding, or brazing, change the tip. Do not reduce the pressure or the flow of either fuel gas or oxygen.
7.3 CLOSING THE SYSTEM

Adhere to the following steps when closing the system:

Step 1: Close the oxygen valve on the torch first. Then close the fuel-gas valve on the torch.
Reason: If the oxygen valve leaks, the system may backfire. If the fuel-gas valve leaks, the flame will not go out. Either situation indicates that the equipment is defective and requires immediate repairs before continuing use.

Step 2: Close both cylinder valves. Release the hose pressure by opening the torch valves and allowing gas to escape from the system.
Reason: This technique prevents leaks and fires. It also prepares the equipment for the next start-up.

Step 3: Close both regulator valves by releasing the tension on the regulator screw.
Note: When the regulator screw is turned counterclockwise, the valve is closed, and when turned clockwise, the valve is opened.
Reason: This technique prepares the equipment for the next start-up.
7.4 GUIDELINES FOR CONDUCTING QUARTERLY TESTS

Use the following guidelines for quarterly testing of specific parts of oxy-fuel equipment.

Regulators and Gauges
1. Visually inspect for damage all components of fuel-gas and oxygen regulators, including the following:
   - compression nipples and nuts
   - filter screens in the inlet nozzles
   - gauges regulator adjusting screws
2. Attach the fuel-gas and the oxygen regulators to inert gas or oil-free air systems for testing. Use transition test nipples for testing.
3. Release regulator-adjusting screws counter-clockwise. Then open the cylinder valve and verify that the high-pressure gauge is operating properly. If no inert gas or air flows through the regulator when the cylinder valve is opened, the regulator adjustment valve is in good condition and the regulator diaphragm is not damaged.
4. Block with a valve the outlet nozzle of the regulator using a plug or hose.
5. Adjust the regulator-adjusting screw clockwise until the low-pressure gauge indicates a normal operating pressure. Use soapy water to inspect the regulator and gauge connections for leaks.
6. Close the cylinder valve, and watch the gauges for a drop in pressure. A drop in pressure indicates a leak. Reopen the cylinder valve, and check the low-pressure gauge for any slight drop in pressure (needle creep). Gauge needle creep greater than 2 to 3 psi indicates that the diaphragm is damaged.

Hoses
1. Visually inspect each length of hose for burns, worn areas, decay, and other defects. If defects that could cause leaks are found, repair them or remove the hose from the system.
2. Pressurize each length of hose, and run it through a water vat to check for leaks. Use inert gas or oil-free air for this test at a pressure sufficient to indicate leaks, typically between 15 and 80 psi. Any length of hose that cannot be tested in the water vat must be tested with soapy water. Repair or replace any length of hose that has leaks.
Note: Replacement hoses shall be Grade T for use with acetylene, propane, and fuel gases.

Combination Reverse-Flow Check Valves and Flame Arresters
1. Visually inspect each check valve/arrester to verify that the inlet nozzle is free of oxidation, burns, and other defects.
2. Visually inspect each check valve/arrester by using reverse-flow pressure in the outlet nozzle to verify that the check valve is sealing. For this test, either blow through the unit or use inert gas or oil-free air at a pressure between 1 and 10 psi, sufficient to close the check valve.
3. Replace, but do not repair, defective check valves/arresters.
4. Between inspections and tests, if the units have significant backfires or flashbacks, remove the check valve/arrester for additional inspections and tests.
Cutting Torches and Mixing Chambers

1. Visually inspect for damage to all components of each torch and mixing chamber, including the following:
   • O-rings on the torch
   • Seating surface in the mixing chamber
   • Cutting tip seating surface in the torch head

2. Test the complete system, including cutting torches and mixing chambers, by following the instructions for setting up the system, lighting the torch, and re-lighting the torch in the attachments.
1.0 Purpose

1.1 To establish a process that identifies hazards on the project and creates a corrective action plan for preventing injuries and incidents. All Haselden Construction employees shall become capable of participating in preparation of a JHA prior to commencing work activities on a job site. Haselden supervisors shall become proficient at completing a JHA.

The project staff shall periodically review the effectiveness of this policy and make changes if controls are not effective.

2.0 Scope

2.1 Perform hazard identification and control to reduce injuries and incidents.

2.2 Prepare a Plan of the Day and Job Hazard Analysis or Weekly Pre-Task.

2.3 Prepare and Review Personal Risk Assessment

2.4 To help ensure proper communications and coordination in a medical facility with construction activities Method of Procedures (MOP) shall be utilized. Refer to HC Infection Control policy.

2.5 Report and record the discovery of unsafe conditions and corrective action taken.

3.0 Definitions

3.1 **Hold Point:** Identify points in any safety, quality or production process where the work needs to be stopped and reviewed to ensure all components are in place such as: permits, inspections, lockout, or allowing time for fire watch after an operation is ceased.

3.2 **POD:** Plan of the Day form which documents the work activity

3.3 **JHA:** Job Hazard Analysis identifies the steps to perform the POD, identifies hazards and how the hazards will be controlled

3.4 **Weekly Task Analysis:** A plan of weekly activities that forms the basic work plan upon which JHAs are built.

3.5 **Inspection:** a process to identify hazards on the project and place corrective measures to correct the deficiencies and prevent injuries and incidents
4.0 Reference Documents

4.1 OSHA Publication 3071, Job Hazard Analysis

4.2 Haselden Code of Safe Work Practices

4.3 Haselden Safety Submittal Policy

4.4 Haselden HAZCOM Policy

4.5 HC Infection Control Program

4.6 Haselden Respirable Silica Hazard Control Policy

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Responsible to administer the POD and Weekly Task Analysis process.

5.1.2 HC Superintendents will ensure that the task is listed and a quality JHA is attached to the POD prior to the work activity.

5.1.3 On Call Superintendents will ensure that the task for the week is listed and a quality associated JHA is attached to the weekly work activity.

5.1.4 All superintendents will ensure that each employee prepares a Personal Risk Assessment daily.

6.0 Implementation

6.1 POD and JHA

6.1.1 Document a baseline hazard analysis and perform task planning for all Haselden activities. Require that all subcontractor activities have a job hazard analysis and task planning submitted before any work can commence.

6.1.2 In activities that have hazards which may require sampling, identify the method and strategy for effective accurate measurements of these hazards.

6.1.2.1 Identify the exposure, duration, route of entry, frequency of exposure and numbers of potentially exposed employees.

6.1.2.2 Any samples, tests, or analyses that are performed must follow the applicable Haselden Construction Safety and Environmental program, and all regulatory requirements.

6.1.3 Consult employees involved in the work. Identify the scope of work being performed and complete the POD
6.1.4 For each scheduled task, a JHA must identify work steps, hazards and preventive measures.

6.1.5 JHAs are a living document to which modifications may be made during a shift depending on changing conditions or activities.

6.1.6 Workers involved shall sign the completed POD and JHA after the supervisor reviews it with them.

6.1.7 Each subcontractor must submit their POD and JHA to the Haselden superintendent responsible for their area before 2 PM the day before the Project Coordination Meeting occurs, or otherwise at the discretion of the Haselden Superintendent, to allow ample time for review, any required revisions, and acceptance.

6.1.8 In the event that a change in the plan needs to be made, the documents shall be revised and signed by the employees, then resubmitted to the Haselden superintendent.

6.1.9 Work shall not commence until a plan is submitted.

6.1.10 Haselden supervisors will keep copies of the accepted documents on file.

NOTE: A detailed Job Hazard Analysis is required for all activities where respirators are worn by trained, qualified employees to control respiratory hazards. Include specific tools, engineering controls and type of respirator to be worn.

6.2 Personal Risk Assessment

6.2.1 Each employee shall prepare a Personal Risk Assessment daily, based on the employee’s work assignment and hazards identified in the JHA, using the HC Personal Risk Assessment card.

6.2.2 The employee will list the immediate tasks to be performed.

6.2.3 If the employee is not fit for duty, the employee shall notify a supervisor.

6.2.4 Based on asking “What could go wrong?” the employee will list specific hazards and how they could affect the employee and/or the work environment.

6.2.5 The employee will list the hazard controls specific to the listed hazards.

6.2.6 Each employee shall review their PRA one-on-one with a peer, and discuss reasons why they will be safe this day.

6.3 Hazard Reporting and Analysis

6.3.1 Safety improvements and other ideas for improvement may be reported by employees on the HC Idea Form (see attached).
6.3.2 All workers are required to report hazards and near misses to their supervisor. See attached HC Report of Unsafe Conditions or Hazards.

6.3.2.1 This report can be filled out anonymously.

6.3.2.2 There will be no reprisal for filling out this report or verbally reporting any safety issue.

6.3.2.3 Any alleged reprisals will be thoroughly investigated and any violators will be disciplined using Haselden’s Code of Conduct and Disciplinary programs.

6.3.2.4 Employee safety reports will be posted at the project site to encourage further reporting and to formally document the hazard and its correction.

6.3.3 Description and location of unsafe conditions shall be recorded, with required corrective action and correction date, on the HC Safety Action Log. (Attached)

6.3.4 Workers shall be instructed to correct hazards when they are trained and able to do so safely.

6.3.5 Supervisors should photograph and note hazards during their weekly ComplianceWise inspections.

6.3.6 At Project Coordination Meetings, safety inspection findings, hazard observations and incident investigations will be used to identify trends requiring corrective action.

6.3.7 Action Plans will be developed at Project Coordination Meetings to address the trends.

6.3.8 All incidents including property damage, near misses, recordable injuries, loss time injuries, health related illnesses, fatalities, and catastrophic events will be investigated and documented by trained employees using Haselden’s Incident Reporting Program. Findings will identify causal and contributing factors.

6.4 Inspections

6.4.1 ComplianceWise inspections are to be performed by Superintendents or designees.

6.4.2 Other project operations team members may also participate in the weekly ComplianceWise inspection. Rotation of assigned safety inspectors is encouraged.

6.4.3 Safety department representatives will perform audits randomly.

7.0 Attachments:
7.1 HC Plan of the Day
7.2 HC Weekly Task Planning
7.3 HC JHA Hazard Identification Guide
7.4 HC Blank JHA & Sample JHA
7.5 HC Pre-task Planning Checklist
7.6 HC Pre-task Planning Worksheet
7.7 HC Report of Unsafe Conditions or Hazards
7.8 HC Safety Action Log
7.9 HC Personal Risk Assessment (English & Spanish)
Plan of the Day

<table>
<thead>
<tr>
<th>Scheduled Tasks</th>
<th>Activity addressed by a JHA or other supporting document</th>
<th>Hold point required Y or N if Yes identify hold point safety, quality, production</th>
</tr>
</thead>
<tbody>
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</table>

Reviewed by:
Weekly Task Planning

Monday’s Date

<table>
<thead>
<tr>
<th>Project</th>
<th>Contractor</th>
<th>Prepared by</th>
<th>Phone</th>
</tr>
</thead>
</table>

## Scheduled Tasks

<table>
<thead>
<tr>
<th>Activity addressed by a JHA or other supporting document Y or N if No a JHA is required prior to task implementation</th>
<th>Hold point required Y or N if Yes identify hold point; safety, quality, hot works, production, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
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<tr>
<td>Tuesday</td>
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<tr>
<td>Wednesday</td>
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<td>Friday</td>
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<tr>
<td>Saturday</td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
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</tr>
</tbody>
</table>

Reviewed by: ________________________________
### 7.3 JHA Hazard Identification Guide

<table>
<thead>
<tr>
<th>Tools &amp; Equipment</th>
<th>HAZARDS</th>
<th>Work Area</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal</strong></td>
<td><strong>HAZARDS</strong></td>
<td><strong>Work Area</strong></td>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td><strong>1 Can the employees come into contact with any energy source?</strong></td>
<td>• Is employee’s clothing free of oil and grease?</td>
<td>• Are portable electric limits properly grounded or double insulated?</td>
<td>• Are tools stored correctly?</td>
</tr>
<tr>
<td>• Is jewelry absent?</td>
<td>• Are electrical cords in good condition?</td>
<td>• Are all machine guards in place?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Is employee knowledgeable about the energies around him/her?</td>
<td>• Are you using a GFI?</td>
<td>• Are all safety devices functional?</td>
<td>• Is task lighting required?</td>
</tr>
<tr>
<td>• Is a respirator required?</td>
<td>• Are air hoses in good conditions?</td>
<td>• Are lockout instructions posted?</td>
<td>• Is heat stress a hazard? If so, is water provided?</td>
</tr>
<tr>
<td>• Are earplugs required?</td>
<td>• Are tool handles insulated?</td>
<td>• Are compressed gas cylinders correctly stored?</td>
<td>• Is cold temperature a problem? If so, is a warm up shack available?</td>
</tr>
<tr>
<td><strong>2 Can the employee come into contact with any hazardous materials?</strong></td>
<td>• Has employee received HAZCOM training?</td>
<td>• Are the required types of special clothing available? Do they fit well?</td>
<td>• Is there an effective local exhaust ventilation system?</td>
</tr>
<tr>
<td>• Does employee know the effects of exposure?</td>
<td>• Are screens used to enclose welding jobs?</td>
<td>• Are materials correctly secured and stored?</td>
<td>• Is there adequate ventilation?</td>
</tr>
<tr>
<td>• Is a respirator required?</td>
<td>• Are tools use for this application, well maintained?</td>
<td>• Are materials correctly labeled?</td>
<td>• When was the air last sampled</td>
</tr>
<tr>
<td>• Is the respirator the correct type and fitted correctly?</td>
<td>• Is it possible to substitute airborne spray paint guns for compressed air types?</td>
<td>• Are separate containers provided for waste disposal?</td>
<td>• Is the air sampled regularly?</td>
</tr>
<tr>
<td>• Has the employee been medically evaluated?</td>
<td>• Are compressed air guns for compressed air types?</td>
<td>• Is waste disposed of correctly?</td>
<td>• Are employees aware of reactivity issues?</td>
</tr>
<tr>
<td>• Has the employee been trained in respirator use?</td>
<td>• Are compressed air hoses in good conditions?</td>
<td><strong>Chemicals</strong></td>
<td><strong>Heat/Cold</strong></td>
</tr>
<tr>
<td>• Does the employee have a current Respirator User Card?</td>
<td>• Are tools well maintained and unlikely to slip under stress?</td>
<td>• Are you using a GFI?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Is the respirator always cleaned after use?</td>
<td>• Are tools well maintained and unlikely to break under stress?</td>
<td>• Are air hoses correctly positioned and away from the floor?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td><strong>3 Can the employee be struck by anything?</strong></td>
<td>• Are gloves required?</td>
<td>• Are tool handles correctly shaped to prevent mechanical stress?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Moving or flying objects</td>
<td>• Do gloves fit correctly?</td>
<td>• Are compressed air hoses correctly shaped to prevent mechanical stress?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Falling material</td>
<td>• Are gloves of the correct material?</td>
<td>• Can the employee approach the work area easily and without hazards from moving machinery?</td>
<td>• Are warning alarms, bells or other warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Does the hardhat fit correctly?</td>
<td>o Arm protection</td>
<td>• Is overhead apparatus maintained regularly?</td>
<td>• Is lighting adequate enough to allow for safe movement around the work area?</td>
</tr>
<tr>
<td>• Are safety glasses or other protective eyewear required?</td>
<td>o Leg protection</td>
<td>• Are secondary containment devices in place?</td>
<td>• Are warning alarms, bells or other warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Is protective eyewear of the correct type?</td>
<td>o Steel toes / metatarsal guards</td>
<td>• Are all chains, hooks, and cables in good repair?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td><strong>4 Can the employee strike against anything?</strong></td>
<td>• Are gloves required?</td>
<td>• Do the components of the workstation or parts have any sharp or jagged pieces?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Stationary or moving objects</td>
<td>• Does gloves fit correctly?</td>
<td>• Are Chinese made rigging equipment.</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Protruding objects</td>
<td>• Are gloves of the correct material?</td>
<td>• Are required types of special clothing available?</td>
<td>• Are warnings levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Sharp or jagged edges</td>
<td>o Pains not too long?</td>
<td>• Is it possible to substitute airborne spray paint guns for compressed air types?</td>
<td>• Are warning alarms, bells or other warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Does work clothing fit correctly?</td>
<td>o Jewelry absent?</td>
<td>• Are the required types of special clothing available? Do they fit well?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>o Sleeves short or buttoned?</td>
<td>o Pains not too long?</td>
<td>• Are materials correctly secured and stored?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Is jewelry absent?</td>
<td>o Rings</td>
<td>• Are materials correctly labeled?</td>
<td>• Are warning alarms, bells or other warning sounds audible to the employee?</td>
</tr>
<tr>
<td>o Necklaces</td>
<td>o Necklaces</td>
<td>• Are separate containers provided for waste disposal?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>o Bracelets</td>
<td>o Bracelets</td>
<td>• Is waste disposed of correctly?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>o Loose watch</td>
<td>o Loose watch</td>
<td><strong>Radiation</strong></td>
<td><strong>Moving or flying objects</strong></td>
</tr>
<tr>
<td><strong>5 Can the employee be caught in, on, or between anything?</strong></td>
<td>• Are gloves required?</td>
<td>• Are tool handles free of oil, grease or damage?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Pinch points</td>
<td>• Does gloves fit correctly?</td>
<td>• Is work position a potential hazard?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Protruding objects</td>
<td>• Are gloves of the correct material?</td>
<td>• Are machine guards in place?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Moving and / or stationary objects</td>
<td>o Pains not too long?</td>
<td>• Does the employee know correct procedures in event of an incident?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Does work clothing fit correctly?</td>
<td>o Jewelry absent?</td>
<td>• Are machine guards in place?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>o Sleeves short or buttoned?</td>
<td>o Pains not too long?</td>
<td>• Does the employee know correct procedures in event of an incident?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Is jewelry absent?</td>
<td>o Rings</td>
<td>• Are additional procedures in place?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>o Necklaces</td>
<td>o Necklaces</td>
<td>• Is lighting adequate?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>o Bracelets</td>
<td>o Bracelets</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>o Loose watch</td>
<td>o Loose watch</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td><strong>6 Can the employee slip, trip or fall?</strong></td>
<td>• Are safety belts or harnesses required?</td>
<td>• Are tool handles free of oil, grease or damage?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• On the same level</td>
<td>• Is footwear or the correct type?</td>
<td>• Is work position a potential hazard?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• To a lower level</td>
<td>o Non-slip soles?</td>
<td>• Are machine guards in place?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td><strong>7 Can the employee be injured by poor job design hazards?</strong></td>
<td>• Are safety belts or harnesses required?</td>
<td>• Does the employee know correct procedures in event of an incident?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Frequency</td>
<td>• Is footwear or the correct type?</td>
<td>• Are machine guards in place?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td>• Force</td>
<td>o Non-slip soles?</td>
<td>• Does the employee know correct procedures in event of an incident?</td>
<td>• Is lighting adequate?</td>
</tr>
<tr>
<td>• Stressful posture</td>
<td>o Does employee’s clothing fit correctly?</td>
<td>• Are machine guards in place?</td>
<td>• Are noise levels a factor in the event shouted warning sounds audible to the employee?</td>
</tr>
<tr>
<td><strong>Could noise level be a factor in contributing to fatigue?</strong></td>
<td>o Does employee’s clothing fit correctly?</td>
<td>• Does the employee know correct procedures in event of an incident?</td>
<td>• Is lighting adequate?</td>
</tr>
</tbody>
</table>
## JOB HAZARD ANALYSIS

Company: ____________________________ Task: ____________________________

Prepared by: _________________________ Date: ____________________________

<table>
<thead>
<tr>
<th>Work Step</th>
<th>Hazards</th>
<th>Hazard Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Contain the Area to be demolished</td>
<td>Back Injury, strains. LIST ONE HAZARD PER LINE.</td>
<td>Workers will use proper lifting techniques for moving and handling material LIST ALL HAZARD CONTROLS FOR THE CORRESPONDING HAZARD IN THIS SPACE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Name</th>
<th>Signature</th>
</tr>
</thead>
</table>

Instructions: Prepare this JHA with crew participation before beginning work. Prepare one JHA per task or work activity. List all steps in the activity, one per line. List all hazards for each work step, one per line. List all hazard controls for each hazard in one space. If more hazards are found, stop and revise the JHA. Use additional sheets if necessary. Have the JHA read aloud with the crew present. All sign.
## JOB HAZARD ANALYSIS

**Company:**

**Task:** Empty Trash Container with Crane

**Prepared by:**

**Date:**

<table>
<thead>
<tr>
<th>Work Step</th>
<th>Hazards</th>
<th>Hazard Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Prepare to fly Trash container to Roll-off Dumpster</td>
<td>1.) Trash container over-filled. (Falling Material)</td>
<td>1.) If trash is not safely contained in trash container, load shall be made safe</td>
</tr>
<tr>
<td></td>
<td>2.) Trash Containers have 4000# capacity</td>
<td>1.) Assure 4000# load limit has not been exceeded.</td>
</tr>
<tr>
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<td>3.) Unsafe Rigging</td>
<td>1.) Check that rigging @ trash container are secure 2.) Make sure tag line is available 3.) Check rigging for wear</td>
</tr>
<tr>
<td></td>
<td>2.) Connect trash container to crane rigging</td>
<td>1.) Unsafe Rigging</td>
</tr>
<tr>
<td></td>
<td>3.) Fly Trash container to roll-off Dumpster</td>
<td>1.) Crane Hook not centered over trash container. (Struck by, Caught between)</td>
</tr>
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<td></td>
<td>4.) Determine area in roll-off, trash container will be landed.</td>
<td>1.) Falling Material</td>
</tr>
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<td>1.) Slips and falls</td>
</tr>
</tbody>
</table>

### Instructions:
Prepare this JHA with crew participation before beginning work. Prepare one JHA per task or work activity. List all steps in the activity, one per line. List all hazards for each work step, one per line. List all hazard controls for each hazard in one space. If more hazards are found, stop and revise the JHA. Use additional sheets if necessary. Have the JHA read aloud with the crew present. All sign.

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<tr>
<th>Name</th>
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<table>
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</tbody>
</table>
**Pre-task Planning Checklist**

Start Date: ___________________________   Finish Date: ___________________________

Your Name: ___________________________   Job Number: __________________________

Company: _____________________________ Job Name: ____________________________

Specific Location of Work: _______________________________________________________

<table>
<thead>
<tr>
<th>Answer the following when evaluating your work</th>
<th>Are any of the following required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you walked your work area to address lighting, housekeeping, slip &amp; trip hazards etc?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Have all tools and equipment been inspected prior to use?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Are qualified operators certified / trained? (Scissor lift, forklift, crane, power actuated tools etc?)</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Are materials and tools adequate to perform the job?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Has the work plan been coordinated with other crafts in the area?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Does this task require any special permits or procedures?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Have you addressed any barricading requirements appropriate to the task?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Are you working around live systems or energized equipment?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Do you need to review SDS’s to proceed with this work?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Have employees been trained in the proper usage and disposal of PPE?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Have employees been trained in safe ladder usage?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Are enough people assigned to safely complete the task?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Is there a new hire that will need support?</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Notification to Owner</td>
<td>√ Yes   √ No   √ N/A</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>
Pre-task Planning Worksheet

Task: __________________________________________

<table>
<thead>
<tr>
<th>A: Steps for Work</th>
<th>B: Hazards</th>
<th>C: Steps Taken to Address Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

BACK SAFETY: STRETCH & FLEX

** Proper planning and stretching will help back injuries caused by heavy lifting and exertion**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will your work require LIFTING, STRETCHING or BENDING?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you completed stretch and flex today?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been trained in proper lifting techniques?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SAFE LIFTING PLAN: Will you need to get help or additional equipment. Define plan below.

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
</table>

Signatures:                                  Date
Safety:                                      
Supervisor:                                  
Crew:                                        
Other:                                       
### Signatures

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
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<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety:</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Supervisor:</td>
<td></td>
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<tr>
<td>Crew:</td>
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<tr>
<td>Other:</td>
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### Signatures

<table>
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<td>Safety:</td>
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<td>Other:</td>
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<td>Other:</td>
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</tr>
</tbody>
</table>
Haselden Construction
REPORT OF UNSAFE CONDITION, NEAR MISS OR HAZARD

<table>
<thead>
<tr>
<th>Optional: Employees may submit this form anonymously to the IIPP Program Administrator.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee's Name: _________________________________</td>
</tr>
<tr>
<td>Job Title: ______________________________________</td>
</tr>
</tbody>
</table>

| Location of Condition Believed to Be Unsafe or Hazardous: __________________________ |
| Date and Time Condition or Hazard Observed: ______________________________________ |
| Description of Unsafe Condition or Hazard: ______________________________________ |

| What Changes Would You Recommend to Correct the Condition or Hazard? ____________________ |

| Optional: |
| Signature of Employee: __________________ Date: __________________ |

Haselden Construction Response:

| Name of Person Investigating Report: __________________ |
| Results of Investigation (what was found? was condition unsafe or a hazard?) (Attach additional sheets if necessary): |

| Action Taken to Correct Hazard or Unsafe Condition, If Appropriate (or, Alternatively, Information provided to employees as to why Condition Was Not Unsafe or Hazardous) (attach additional sheets if necessary): |

| Signature of Person Investigating Report: __________________ |
HASELDEN CONSTRUCTION
SAFETY ACTION LOG

Inspector/Superintendents Name ________________________________

Telephone Number ____________________________________________

Inspector/Superintendents Signature ______________________________ Date ______________

<table>
<thead>
<tr>
<th>Description and Location of Unsafe Condition and Date Discovered by Management</th>
<th>Action To Be Taken</th>
<th>Completion Date Projected</th>
<th>Actual*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

*Note: Hazards that pose a risk of serious or substantial injury to Team Members must be corrected immediately. Other hazards should be corrected as soon as reasonably possible but in no case later than 5 working days from the date of discovery by management. Any deviation from these time requirements must be reported to the IIPP Program Administrator immediately.
One-on-One Safety Talk

Have Reviewer Initial Below

Initals  Time  Location

Why am I safe today?

The Daily Safety Topic Is:

Print Name

Haselden Construction

Personal Risk Assessment

In Case of Emergency Number:

Project Address:

Project Name:

Date:
**Tasks - What am I doing?**

List the immediate tasks you will do today on this job.

---

**Recognize the Hazards - What could go wrong?**

Be specific, how could this affect you and / or the environment?

---

**Eliminate/Control**

List how you can eliminate and / or control the hazards in your work area.

---

Are you fit for duty and ready to work today?  
☐ Yes ☐ No

If answer is no, please talk to your supervisor.

---

Who’s PRA card did you look at yesterday?

---

Who is your work partner today?

---

HASELDEN CONSTRUCTION
<table>
<thead>
<tr>
<th>Iniciales</th>
<th>Hora</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Porque estoy trabajando seguro hoy?

<table>
<thead>
<tr>
<th>Tema Diario de Seguridad:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Nombre Escrito

<table>
<thead>
<tr>
<th>Dirección del Proyecto:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nombre del Proyecto:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Fecha:
<table>
<thead>
<tr>
<th>Tareas - Que estoy haciendo?</th>
<th>Reconozca los Peligros - Que Puede ir Mal?</th>
<th>Eliminar/Controlar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indique las tareas que usted hará hoy en este proyecto.</td>
<td>Sea específico, como le puede afectar esto y/o el ambiente?</td>
<td>Indique como puede eliminar y/o controlar los peligros en su área de trabajo</td>
</tr>
<tr>
<td>____________________________</td>
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<tr>
<td>____________________________</td>
<td>____________________________</td>
<td>____________________________</td>
</tr>
<tr>
<td>Estas hábil y preparado para el trabajo hoy?</td>
<td>Cual tarjeta de este tipo miro ayer?</td>
<td>Quien es su compañero de trabajo hoy?</td>
</tr>
<tr>
<td>[ ] Si [ ] No</td>
<td>____________________________</td>
<td>____________________________</td>
</tr>
<tr>
<td>Si no, favor de hablar con su supervisor.</td>
<td>____________________________</td>
<td>____________________________</td>
</tr>
</tbody>
</table>
1.0 Purpose

1.1 This program describes minimum standard operating procedures for informing team members and contractors of the chemical hazards to which they are exposed, and provides for labeling and other forms of warning, safety data sheets, information and training. It is intended to prevent injuries and property damage, to assure compliance with state and federal OSHA regulations and to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Revision 3.

2.0 Scope

2.1 This program applies to all Haselden Construction employees and subcontractors that are involved in the handling, use, or disposal of commercial chemical products, and describes Haselden Construction’s general hazard communication program. This Hazard Communication Program must be supplemented by site specific information listing site specific chemicals and their location (attachment 7.1) must identify where the SDS are kept, and must name the responsible parties for maintaining SDS and obtaining labels (attachment 7.2). This HAZCOM program, with completed Attachments 7.1 and 7.2, is to be placed in the SDS book and stored in a location accessible to all employees. Signage shall be posted directing employees to the SDS book.

2.2 Subcontractors are required to have their own hazard communication programs that comply with state and federal regulations, and are at least as protective as this program. Subcontractors must supply SDS to Haselden Construction for every chemical product brought onto the jobsite.

2.3 If SDS are stored or available in electronic format, OSHA requires that they be immediately accessible during each work shift to employees when they are on the jobsite.

3.0 Definitions

3.1 Immediate Use: The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

3.2 Pictogram: A composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this program for application to a hazard category.
3.3 **Precautionary Statement:** A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling.

3.4 **Product Identifier:** The name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

3.5 **Safety Data Sheet (SDS):** Written or printed material concerning a hazardous chemical. The SDS is to be developed by the manufacturer or importer and shall be in English.

4.0 **Reference Documents**

4.1 Globally Harmonized System of Classification and Labeling of Chemicals (GHS) - Third revised edition

4.2 OSH HCS/GHS Final Rule dated March 26, 2012

5.0 **Responsibilities**

5.1 **Site Superintendent(s):**

5.1.1 Site Superintendents have responsibility for ensuring that the written program is maintained, audits for compliance are performed, training is conducted and records are kept for their assigned operating locations.

5.1.2 Shall ensure that Haselden employees are trained in the chemical hazards of the workplace before they are exposed to those chemicals.

6.0 **Implementation**

6.1 **Work Activities**

6.1.1 Haselden Construction employees and our subcontractors may perform the following work activities involving commercial chemical products:

6.1.1.1 Installation, repair, and removal of building materials and equipment.

6.1.1.2 Loading and unloading these materials from delivery vehicles.

6.1.2 The user is responsible for developing safe procedures for use of any hazardous chemical.

6.1.2.1 Employers that create a health hazard are responsible for protecting their employees, other employees, and the public. Such protection may include exposure analysis or exposure monitoring, engineering controls, isolation of the affected area,
notification of other employers, and the sequencing and scheduling of work.

6.2 Labels and Other Hazard Warnings

6.2.1 Commercial Products:

6.2.1.1 Haselden Construction will retain the manufacturers’ labels on commercial chemical products used or handled by team members. When chemical products are delivered to the job site, the ordering supervisor or designee is responsible for verifying that the product containers are labeled with the information required by OSHA.

6.2.1.1.1 Product identifier (name or number)

6.2.1.1.2 Signal word;

6.2.1.1.3 Hazard statement(s);

6.2.1.1.4 Pictogram(s);

6.2.1.1.5 Precautionary statement(s); and,

6.2.1.1.6 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

6.2.1.2 Employees must ensure that the required labels are in place and legible before a chemical product is stored or shipped from the job site. Employees are responsible for notifying their supervisors of any missing, damaged or defective labels. Damaged or defective labels will be replaced immediately.

6.2.2 Temporary Containers:

6.2.2.1 For hazardous chemicals or substances, (those with an SDS) when employees transfer the chemical into a secondary container (such as a Hudson Sprayer or Safety Can), the secondary container must be labeled as follows:

6.2.2.1.1 Product identifier (chemical name or trade name corresponding to the SDS filed on site), pictograms or hazard description, and words (hazard statement), pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals.

6.2.2.1.2 Attachment 7.3 is a representation of a secondary label which, with the information readily available to employees in the SDS book, meets the requirements for labeling secondary containers. This label has an adhesive backing and may be purchased from Alliance Safety Supply, 303-388-8766.
6.2.2.1.3 To fill out the secondary label, refer to the SDS or primary container label, insert the chemical or trade name in the first blank, cross out all pictograms that do not apply, and cross out the signal word that does not appear. Affix the label to the secondary container.

6.2.2.1.4 Some labels may need to be laminated and wired to an oily or residue covered container because they will not adhere.

6.2.2 For non-hazardous chemicals or substances that do not have an SDS, where employees transfer small amounts of a chemical product into temporary containers for use at a specific workstation, the temporary container must be labeled with the name of the chemical product it contains. Such labeling may be done with an indelible marker as long as it is legible and clearly identifies the contents of the container.

6.2.2.1 This labeling requirement includes non-potable water and potable, or drinking water.

6.2.2.3 Placing a chemical in a water bottle, soda can, or other container designed to hold items for human consumption is strictly prohibited. Violation of this prohibition may result in removal from the jobsite or termination.

6.3 Globally Harmonized System (GHS)

6.3.1 GHS Symbols/Pictograms are graphic representations, using a picture and a border, to convey specific information about the hazards of a chemical. Eight pictograms are used to represent standard hazard categories.

6.3.2 Signal Words: The signal word indicates the relative degree of severity a hazard. The signal words used in the GHS are

- "Danger" for the more severe hazards, and
- "Warning" for the less severe hazards.

6.3.3 Hazard Statements: Hazard statements are standardized phrases that describe the nature of the hazard and degree of the hazard. Examples are “Extremely flammable liquid or vapor” or “May cause cancer by inhalation”. An appropriate statement for each GHS hazard should be included on the label for products possessing more than one hazard.

6.4 Safety Data Sheets & Chemical Inventory List

6.4.1 The Site Superintendent or his designee at the job site is responsible for maintaining a list of the hazardous chemical products used or handled at the job site. The Site Superintendent or his designee will review this list and the SDS periodically and at least annually to ensure that the most up-to-date versions are readily accessible.
6.4.2 A list of the hazardous chemicals on site will be kept in the SDS book, typically in the front portion, just before the SDS. This is known as the chemical inventory list. For ease of use, the chemical name and common trade name should be listed, and the log should be set up with filters. See an example in Attachment 7.1.

6.5 **Employee Information and Training**

6.5.1 Employees will receive pre-assignment and annual hazard communication training from qualified staff.

6.5.2 Hazard communication training will include at least the following topics:

6.5.2.1 Contents of federal and state OSHA hazard communication standards;

6.5.2.2 Work activities that involve hazardous substances and hazardous wastes;

6.5.2.3 How to read labels and SDS;

6.5.2.4 How to obtain SDS for commercial products involved in Haselden Construction work activities;

6.5.2.5 Physical and chemical hazards of hazardous substances involved in Haselden Construction work activities;

6.5.2.6 Potential health effects and symptoms of exposure to hazardous substances involved in Haselden Construction work activities;

6.5.2.7 Safe work practices and other control measures to prevent hazardous substance exposures;

6.5.2.8 How to identify spills or releases of hazardous substances involved in Haselden Construction work activities;

6.5.2.9 First aid for hazardous substance exposures;

6.5.2.10 Incident and exposure reporting procedures and how to obtain medical evaluations after hazardous substance exposures;

6.5.2.11 Hazardous substance spill/release containment and control procedures for Haselden Construction work activities.

6.5.3 Training documentation will be maintained in the employees’ training files.

6.5.4 Employees will be trained in a language and manner that they understand.

6.6 **Non-Routine Tasks and Review of New Products**

6.6.1 The responsible supervisor must contact the Superintendent prior to assigning employees to non-routine tasks. The Superintendent will
evaluate the potential chemical and physical hazards of each task and assist the supervisor in selecting appropriate safe work practices and training materials to ensure that employees are adequately informed of those hazards and that appropriate control measures are in place before work begins.

6.7 Subcontractors

6.7.1 The Superintendent is responsible for informing Haselden Construction subcontractors of the chemical and physical hazards associated with Haselden Construction work activities before subcontractor’s employees begin work. Where SDS or site-specific safety procedures exist, copies will be made available to each subcontractor before work begins.

6.7.2 Haselden Construction Superintendents are responsible for determining whether chemical products used or stored by other subcontractors may affect Haselden Construction employees. Haselden Construction Site Superintendents are responsible for obtaining copies of SDS for such chemical product and for ensuring that all affected Haselden Construction employees have been informed of the contents of the SDS. Copies of these SDS must be readily accessible in the Haselden Construction job trailer.

7.0 Attachments:

7.1 Location Specific SDS Table of Contents

7.2 Location Specific Hazard Communication Program Elements

7.3 Secondary Label Example
<table>
<thead>
<tr>
<th>Tab</th>
<th>Trade Name</th>
<th>Chemical Name</th>
<th>Manufacturer</th>
<th>Emergency #</th>
<th>Quantity</th>
<th>Area of Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Acrylcoat</td>
<td>Acrylic Latex</td>
<td>US Spec</td>
<td>800-424-9300</td>
<td>3 gal</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>A</td>
<td>Antifreeze</td>
<td>Prediluted Engine Coolant/Antifreeze</td>
<td>Prestone</td>
<td>800-890-2075</td>
<td>20 L</td>
<td>Vehicles</td>
</tr>
<tr>
<td>C</td>
<td>Cement</td>
<td>Portland Cement</td>
<td>Lafarge</td>
<td>800-451-8346</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Clean Strip</td>
<td>Clean Strip J1A</td>
<td>Dayton Superior</td>
<td>800-424-9300</td>
<td>2 Gal</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>D</td>
<td>Diesel Fuel</td>
<td>Diesel Fuel</td>
<td>Valero</td>
<td>866-565-5220</td>
<td>20 Gal</td>
<td>Fire Cabinet</td>
</tr>
<tr>
<td>E</td>
<td>Expo Cleaner</td>
<td>Expo White Board Cleaner</td>
<td>Sanford</td>
<td>800-228-5635</td>
<td>250 mL</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>E</td>
<td>Additive Cleaner</td>
<td>Eye Wash Station Additive Concentrate</td>
<td>Health Saver</td>
<td>905-708-7962</td>
<td>100 mL</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>G</td>
<td>Gasoline</td>
<td>Gasoline Unleaded</td>
<td>Valero</td>
<td>866-565-5220</td>
<td>15 Gal</td>
<td>Fire Cabinet</td>
</tr>
<tr>
<td>G</td>
<td>Goof Off</td>
<td>Acetone</td>
<td>W.M. Barr</td>
<td>800-451-8346</td>
<td>1 gal</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>G</td>
<td>Grease</td>
<td>Petroleum Lubricating Grease</td>
<td>Lubriplate</td>
<td>800-255-3924</td>
<td>500 mL</td>
<td>Fire Cabinet</td>
</tr>
<tr>
<td>I</td>
<td>Ink</td>
<td>IMB Ink 4079 Black</td>
<td>IBM</td>
<td>800-426-4333</td>
<td>100 mL</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>I</td>
<td>Ink</td>
<td>HP 51644C</td>
<td>Hewlett-Packard</td>
<td>800-457-4209</td>
<td>100 mL</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>O</td>
<td>Oil</td>
<td>Super 345 Motor Oil</td>
<td>Lubriplate</td>
<td>800-295-3924</td>
<td>30 qts</td>
<td>Vehicles</td>
</tr>
<tr>
<td>O</td>
<td>Oil</td>
<td>2-Cycle Engine Oil</td>
<td>Lomni Specialty</td>
<td>800-524-9300</td>
<td>10 qts</td>
<td>Vehicles</td>
</tr>
<tr>
<td>O</td>
<td>Penetrating Oil</td>
<td>Super Penetrating Oil</td>
<td>AIOD</td>
<td>800-373-6729</td>
<td>400 mL</td>
<td>Fire Cabinet</td>
</tr>
<tr>
<td>P</td>
<td>Dish Soap</td>
<td>Palmolive Dishwashing Liquid</td>
<td>Colgate-Palmolive</td>
<td>201-8787533</td>
<td>1 gal</td>
<td>Office Trailers</td>
</tr>
<tr>
<td>P</td>
<td>Propane</td>
<td>Liquified Petroleum Gas</td>
<td>Agway Petroleum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>Silica</td>
<td>Silica sand</td>
<td>Black Lab</td>
<td>800-258-3878</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>Simple Green</td>
<td>Simple Green Degreaser</td>
<td>Sunshine Makers</td>
<td>800-255-3924</td>
<td>2 gal</td>
<td>Site/Office Trailers</td>
</tr>
<tr>
<td>S</td>
<td>Starting Fluid</td>
<td>Starting Fluid</td>
<td>Spray Products</td>
<td>800-424-9300</td>
<td>400 mL</td>
<td>Vehicles</td>
</tr>
<tr>
<td>W</td>
<td>WD-40</td>
<td>Organic Mixture</td>
<td>WD-40 Company</td>
<td>888-324-7596</td>
<td>400 mL</td>
<td>Site Trailer</td>
</tr>
<tr>
<td>W</td>
<td>Windex</td>
<td>Ethyleneglycol Monohexylether</td>
<td>SC Johnson</td>
<td>866-231-5406</td>
<td>1 gal</td>
<td>Office Trailers</td>
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</tbody>
</table>
LOCATION-SPECIFIC HAZARD COMMUNICATION PROGRAM ELEMENTS

Program Administrator for Hazard Communication:

Name ____________________________________________ Work Phone ____________________________

Location of SDS: ____________________________________________

Procedure for Purchasing Chemical Products: ____________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

Procedure for Obtaining Replacement Labels: ____________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________
Secondary Container Labeling Requirements

Blank Label
(Order these through Alliance Safety)

Properly Completed Label
Black out areas that do not apply (Reference SDS sheet)
Properly Labeled Secondary Container Examples
1.0 Purpose

1.1 The Haselden, Hazardous Energy Control procedure outlines the minimum requirements to protect Haselden and subcontracted employees' safety and health from unexpected release of hazardous energy whenever they are performing maintenance, repairs, service on equipment or temporary power sources, and when connecting new services to operating systems.

2.0 Scope

2.1 This procedure outlines the hazardous energy control requirements for equipment and systems that are used during construction or is incorporated into the construction. It includes mobile equipment such as cranes, excavators, and forklifts. All HC and subcontractor employees shall comply with this policy.

2.2 This policy does not apply to:

2.2.1 Work on cord and plug connected electrical equipment where hazardous energy exposure is controlled by unplugging the equipment at the energy source, with the plug being under direct control of the employee performing the service or maintenance.

2.2.2 Hot tap operations involving transmission and distribution of substances such as gas, steam, water or petroleum products when they are delivered by pressurized pipelines when:

2.2.2.1 Continuity of service is essential.

2.2.2.2 Shutdown of the system is impractical, and

2.2.2.3 Documented procedures are followed and special equipment is used that will provide effective protection to employees.

3.0 Definitions

3.1 **Affected Employee** – A person whose job requirements are to operate or use machinery or equipment on which servicing or maintenance is being performed under lockout or tag out, or whose job requirements are to work in an area in which such servicing or maintenance is being performed.
3.2 **Authorized Employee** – A person who affixes their lock or tag, per this Hazardous Energy Control procedure, on machines or equipment so that construction, servicing or maintenance on that machine or equipment may be performed by them. An authorized employee and an affected employee may be the same person when the affected employee’s duties also include performing construction, maintenance or service on a machine or equipment which must be locked out or have a tag out system implemented.

3.3 **Primary Authorized Employee** - The employee who is accountable for the HAZARDOUS ENERGY CONTROL devices when other personnel are covered by a group lockout. This should be a person knowledgeable of the energy sources associated with the job to be performed.

3.4 **Energized** - Connected to an energy source or containing residual or stored energy.

3.5 **Energy Control Device** – A mechanical device that physically prevents the transmission or release of energy, such as a circuit breaker, valve, disconnect switch, blind flange, slip blind, cap or plug. This includes accessories that go over valves and isolation devices.

**NOTE:** Push buttons, selector switches, control circuits, and other electronic controls are not energy isolating devices.

3.6 **Hazardous Energy** – Any form of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, ionizing or non-ionizing radiation, stored energy or gravity that could harm an employee.

3.7 **Group Lockout Box** - A specially designed lockout box that accepts the application of multiple personal locks.

3.8 **Lockout Device** – A device that uses a positive means such as a lock, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment, or the unexpected release of energy or chemicals.

3.9 **Personal Lock** – Lock specified as a lockout device that is uniquely keyed from any other lock with only one key and the employee installing the lock is in control of the key.

3.10 **Qualified Employee** – One who is thoroughly knowledgeable in the construction and operation of specific equipment or a specific task and the hazards associated with that equipment or task.

3.10.1 Subcontractors who are hired as electricians will be considered “qualified” if they:

3.10.1.1 Have received the training required under 29 CFR 1910.332(b)(3). Training shall be appropriate to the level of risk in the task to be performed.
3.10.1.2 Have demonstrated that they understand and can apply the training.

3.10.1.3 Are journeymen, licensed/certified, or have otherwise demonstrated to their employer that they are qualified.

3.11 Tag Out - The placement of a tag out device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tag out device is removed.

3.12 Tag Out Device - A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with a specific established procedure.

3.13 Troubleshooting – Diagnostic work on energized machinery or equipment, not to include repair or maintenance.

4.0 Reference Documents

4.1 29 CFR 1910.147 – The Control of Hazardous Energy (Lockout/Tagout)

4.2 29 CFR 1926.417 – Lockout and Tagging of Circuits

4.3 29 CFR 1910.269 - Electric Power Generation, Transmission, and Distribution and Appendices

4.4 OSHA Publication #3120 - Control of Hazardous Energy Lockout/Tagout

4.5 OSHA Publication #3075 – Controlling Electrical Hazards

4.6 CDC/NIOSH Publication No. 99-110 - Preventing Worker Deaths From Uncontrolled Release of Electrical, Mechanical, and Other Types of Hazardous Energy

4.7 29 CFR 1910 Subpart S – Electrical

4.8 29 CFR 1926 Subpart K – Electrical

4.9 OSHA Standard Interpretations - Applicability of HAZARDOUS ENERGY CONTROL Standards; Isolation and Verification Procedures (construction)

4.10 29 CFR 1926.702 - Requirements For Equipment and Tools

4.11 ANSI/ASSE Z 244.1 2016 The Control of Hazardous Energy

5.0 Responsibilities

5.1 Superintendents – Manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.
6.0 Implementation

6.1 The primary and preferred means of employee protection against exposure to hazardous energy is lockout.

6.1.1 Where lockout is possible, lockout shall always be used.

6.2 Tagout is the secondary means and shall only be used when lockout of existing energy sources is not feasible.

6.2.1 Tagout shall be used when blinding, capping or plugging is employed to prevent the release of hazardous energy.

6.2.2 Tagout procedures shall be accompanied by a risk analysis prepared by a qualified person.

6.2.3 The risk analysis shall incorporate risk reduction methods that will reduce employee exposure to hazardous energy to a level of safety that is equivalent to a lockout system.

6.3 Lockout or tagout for electrical hazards shall be applied at the circuit disconnect switch.

6.4 Only qualified electrical employees may work on electrical systems of 50 volts or higher requiring control of hazardous energy.

6.5 Lockout procedures for nonelectrical hazards may be completed by an authorized employee rather than the qualified employee.

6.6 Ensure all employees are protected from an unexpected release of energy that may occur during:

6.6.1 Energization/start-up of equipment and machinery.

6.6.2 Flow of materials or product through piping

6.6.3 Release of stored or residual energy in equipment.

6.6.4 When connecting utilities to building services (water, gas, electrical, steam, pressure main).

6.6.5 When repairing or maintaining equipment.

6.7 Follow procedures for use of lockout devices provided with equipment in accordance with the manufacturer’s warnings, instructions and recommendations.

6.8 Every energy isolating procedure shall include the following specific elements to be used to effectively isolate, de-energize and verify:

6.8.1 Identify the machine, equipment or process
6.8.2 Identify and locate all energy isolation devices; identify the amount of hazardous energy that may be released, and where in the machine, equipment or process it may be released.

6.8.3 Prepare procedures for notifying affected persons.

6.8.4 Develop procedures for isolating, shutting down, blocking, de-energizing, stabilizing or releasing stored or residual energy.

6.8.5 Prepare procedures for dissipating or controlling stored hazardous energy.

6.8.6 Procedures for installing energy isolating devices.

6.8.7 Procedures for verifying isolation and de-energization.

6.8.8 Procedures for removal of isolation devices.

6.8.9 Procedures for return to service.

6.9 Energy Isolation Devices

6.9.1 Energy isolation devices shall be uniform throughout the operation.

6.9.2 Only lockout locks and “DANGER – DO NOT USE OR OPERATE” tags will be used.

6.9.3 Devices with locks or Danger tags must **NOT** be operated.

6.9.4 Unauthorized removal of control devices are grounds for immediate removal from the project and/or termination.

6.10 Lockout/Tagout Equipment

6.10.1 Control devices will be used for energy control **ONLY**.

6.10.1.1 Control locks will be:

   6.10.1.1.1 Keyed individually and should have only one key available for each lock.

   6.10.1.1.2 Locks shall be sequentially numbered without the numbers being repeated.

   6.10.1.1.3 Locks shall be substantial enough that they cannot be removed with pliers, a saw or a grinder.

6.10.1.2 Control tags

   6.10.1.2.1 Control tags will be:
6.10.1.2.1.1 Of the same print, format, and material and provide space to list the company, name, date, and phone number of the installer.

6.10.1.2.1.2 Capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

6.10.1.2.2 Control tags that have been written on will:

6.10.1.2.2.1 **NOT** be reused.

6.10.1.2.2.2 Be destroyed after removal from the lock or equipment.

6.10.1.3 Control blinds:

6.10.1.3.1 Control blinds shall be individually marked and identified so that they may be recorded in the Energy Control Logbook.

6.11 **Energy Control Procedure**

6.11.1 Application of Locks.

6.11.1.1 Lockout shall be used to secure valves by using a chain, hasp, or valve lockout device.

6.11.1.2 Before beginning to perform the work on the system or equipment utilizing lockout, (unless utilizing GROUP HAZARDOUS ENERGY CONTROL), each authorized employee **shall**:

6.11.1.2.1 Install his personal lock that locks the energy isolating device in the non-operating position and bears the following information:

6.11.1.2.1.1 Authorized employee signature and date.

6.11.1.2.1.2 Company name, the authorized employee’s printed name, phone number and,

6.11.1.2.1.3 Reason for the lockout.

6.11.2 Application of Tags.

6.11.2.1 Before beginning to perform the work on the system or equipment utilizing tagout, each authorized employee **shall**:

6.11.2.1.1 Install his personal tag on the energy isolating device, bearing the following information:
6.11.2.1.1.1 Authorized employee signature and date.
6.11.2.1.1.2 Company name, the authorized employee’s printed name, phone number and,
6.11.2.1.1.3 Reason for the tagout.
6.11.2.1.1.4 Danger warning statement.

6.11.2.1.2 Securely attach the tag with a zip tie.
6.11.2.1.3 Protect the tag if it is located where weather or chemicals might damage it.

**NOTE** The tag must remain legible and must remain in place through the duration of the energy control event.

6.11.3 Document each HAZARDOUS ENERGY CONTROL lockout/tag out device in the control log; the control logbook may be supplemented by marking the location of the control devices on a drawing.

6.11.3.1 Verify that all control devices are in place before commencing work by walking down the system.
6.11.3.2 Verify that de-energization has been accomplished prior to work.
6.11.3.3 Control device (locks and tags) removal.

6.11.3.3.1 Control devices will **NOT** be removed from the equipment by anyone other than the authorized employee after the work is complete and it is safe to do so.

6.11.3.3.2 If the job extends beyond a single shift, the authorized employee must verify that HAZARDOUS ENERGY CONTROL is in place and effective at the beginning of each shift.

6.11.3.3.3 If work extends into another shift and another authorized employee will continue the work, the lock of the new authorized employee must be installed at the same time the lock of the relieved authorized employee is removed.

6.11.3.3.4 No one may install or remove another authorized employee’s lock or tag.

6.11.3.3.4.1 Each authorized employee will remove only the lockout/tagout device which he installed

6.11.3.3.4.2 If for any reason an authorized person’s lock or tag must be removed in his absence, the
provisions outlined in section 6.13 of this procedure will be used.

6.12 Group Lockout/Tagout (Complex HAZARDOUS ENERGY CONTROL)

6.12.1 Should the need arise to perform energy control for a complex system or multiple subcontractors or craft persons, the group lockout/tagout process will be used.

6.12.1.1 The Haselden Management team must approve the specific energy control plan; this may require developing a detailed risk assessment.

6.12.1.2 A primary authorized employee will be assigned to coordinate the group lockout/tagout.

6.12.1.3 A written, complete plan shall be prepared identifying each lockout point for each specific system or piece of equipment.

6.12.1.4 Each employee must be given the opportunity to observe the lockout and approve of the group lockout/tagout plan.

6.12.1.5 Measures to control locks and keys will be identified in the control plan.

6.12.1.6 A procedure to account for all personnel at the beginning and the end of shifts will be identified.

6.12.1.7 The plan will include instructions for coordinated removal of the locks or tags when the work is complete.


6.12.2.1 Once the Haselden Management team approves the group HAZARDOUS ENERGY CONTROL plan, the primary authorized employee will:

6.12.2.1.1 Locate the energy sources associated with the job and put in place the control devices required to achieve control.

6.12.2.1.2 Install a lock with a \("DO NOT OPERATE/DO NOT REMOVE\") tag that includes the printed name, phone number, and signature of the Primary Authorized Person.

6.12.2.1.3 The date, company or companies, and the reason for the control.

6.12.2.1.4 Document each HAZARDOUS ENERGY CONTROL lockout or tag out device in the control logbook.
6.12.2.1.5 Verify that all control devices are in place before commencing work by walking down the system.

6.12.2.1.6 Verify that de-energization has been accomplished prior to work.

6.12.2.1.7 Place all the keys for locks into the group lock box.

6.12.2.1.8 Attach a tag to identify the lockout box.

6.12.2.1.9 The Primary Authorized Person shall attach his personal lock on the group lock box.

6.12.2.2 Prior to starting any work on the equipment or system, each authorized person will:

6.12.2.2.1 Apply her personal HAZARDOUS ENERGY CONTROL lock to the “group lockout box”.

6.12.2.2.2 Remove her lock from the “group lockout box” after finishing his/her job once it is safe to do so;

6.12.2.3 If the job is not completed at the end of a shift, the Primary Authorized Person shall:

6.12.2.3.1 Elect to leave the lock on if the work will be completed on the following day; or

6.12.2.3.2 Transfer her personal lock to a “relief” Primary Authorized Person; or,

6.12.2.3.3 Remove the personal lock if she will not be returning to complete the job.

6.12.2.3.4 Demonstrate to each Authorized Person that the system is safe and that the group locks may be removed.

6.13 Removal Of Control Devices of Absent Personal

6.13.1 No employee will remove another employee’s lock and/or tag except:

6.13.1.1 In an emergency,

6.13.1.2 When the authorized employee who installed the device is unavailable to remove it.

6.13.2 Should the need arise to remove control devices the following process will be implemented:

6.13.2.1 The device may be removed by an authorized supervisor in charge of the job requiring the control and removal, provided:
6.13.2.1.1 Written procedures have been developed and employees have been trained on the removal of control devices,

6.13.2.1.2 The written procedures and employee training records have been submitted to Haselden.

6.13.2.1.3 Attachment 7.2, “Lock Removal Authorization Form” has been completed.

6.13.2.2 A control device removal form will include:

6.13.2.2.1 Verification that the authorized employee is not on the job site,

6.13.2.2.2 Make reasonable efforts to contact the authorized employee to inform him the isolating device is to be removed and,

6.13.2.2.3 Ensuring that the authorized employee is informed of the change before she resumes.

NOTE: An authorized person may cut off his own personal lock if he loses the key upon notifying their immediate supervisor and documenting on the HAZARDOUS ENERGY CONTROL Log sheet that the lock was cut off.

6.14 Hazardous Energy Control for Electrical Work

6.14.1 Energy control involving electrical equipment/systems 50 volts and above will be locked out prior to starting work. Energy control of electrical equipment will require:

6.14.1.1 The participation of a “qualified employee” (electrician) to ensure control of the electrical energy prior beginning work.

6.14.1.2 Affected personnel must wear the PPE required by the incident energy level of the equipment being worked on.

6.14.1.3 Use a single-function voltage tester; to ensure the voltage tester is functioning correctly, it will be verified with a known source, before and after the tests.

6.14.1.4 Create a physical break by removing the fuses or removing and taping the power conductors if a visible gap is not observed.

6.14.1.5 Ensure the circuits have tested “dead” prior to pulling fuses or disconnecting wiring.
6.14.1.6 Attach grounds to the system prior to beginning work.

6.15 Hazardous Energy Control for In Service Piping and Equipment Systems

6.15.1 The lockout of in-service piping or equipment will follow the steps below:

6.15.1.1 The system must be drained and flushed or purged (if required), locked or tagged.

6.15.1.2 The Authorized Employee places her lock or tag to isolate the process or initiates the Group Lockout (see section 6.12).

6.15.1.3 All Authorized Employees working on the system place their locks or tags on the group lockbox.

6.15.2 When work is complete, an Authorized Employee verifies that the system is normalized and that all other Authorized Employees have removed their locks or tags and cleared the area.

6.15.3 An Authorized Employee then returns the system to service.

6.16 Hazardous Energy Control for Mobile Equipment

6.16.1 For repairs and maintenance performed on mobile equipment, procedures shall be recorded in a JHA as required by the task.

NOTE: Work must be performed by an Authorized Person trained in this procedure. The requirement for Hazardous Energy Control for Mobile Equipment does not apply to minor tasks such as re-fueling, lubrication, changing bulbs, fuses or wiper blades, minor repairs, inspection or unjamming equipment during use.

6.16.1.1 Safe shut down

6.16.1.2 Remove battery cable and isolate.

6.16.1.3 Control valves and other isolating devices as required

6.16.1.4 Control residual energy sources other than those isolated by the shutdown, such as gravity and stored energy

   6.16.1.4.1 Park on a flat, firm surface

   6.16.1.4.2 Set parking brake

   6.16.1.4.3 Chock wheels if necessary

   6.16.1.4.4 Lower all attachments to the ground
6.16.1.4.5 Block up bed, body, attachments or boom if work must be performed in a raised position

6.16.1.4.6 Dissipate pressurized systems if work must be performed on them

6.16.1.4.7 An inflation safety cage shall be used when installing or removing tires from rims.

6.16.1.5 Allow heat to dissipate

6.16.1.6 Remove the key, or lock the cab if the equipment has no ignition key

6.16.1.7 Notify others that work is in progress with a sign, tag or flagging

6.16.1.8 Verify energy is controlled with a start-up test

6.16.1.9 Only diagnostic tests may be performed when equipment is partially or fully energized. No maintenance or service may be performed.

6.16.1.10 Remove controls when work is complete

6.16.1.11 Return to service.

6.17 Training

6.17.1 Prior to performing any work and where hazardous energy control is to be used, initial training will be provided in Hazardous Energy Control policy and procedures.

6.17.1.1 Retraining will be provided for all authorized and affected persons whenever there is:

6.17.1.1.1 A change in job assignment.

6.17.1.1.2 A change in machines, equipment, or processes that present a new hazard.

6.17.1.1.3 A change in the Hazardous Energy Control Procedure.

6.17.1.1.4 An inspection that reveals deficiencies

6.17.1.1.5 Management has reason to believe that there are inadequacies in the person’s knowledge or use of the Hazardous Energy Control Procedure.

6.17.1.1.6 Annual training will be conducted to ensure that persons involved with Hazardous Energy Control are familiar with their responsibilities.
6.18 Auditing And Inspections

6.18.1 Perform periodic audits, at least annually, to ensure that this energy control procedure continues to be implemented properly and that the persons involved are familiar with their responsibilities under this procedure.

6.18.2 Document audit findings; see Attachment 1, “Periodic Lockout/Tagout Inspection Form” for an inspection template.

7.0 Attachments:

7.1 Periodic Logout/Tagout Inspection Form

7.2 Lock Removal Form

7.3 Energy Control Log Sheet
PERIODIC LOCKOUT/TAGOUT INSPECTION FORM

<table>
<thead>
<tr>
<th>Company</th>
<th>PROJECT/LOCATION</th>
<th>EQUIPMENT/MACHINE</th>
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</table>

**AUTHORIZED**

EMPLOYEE: ___________________  INSPECTORS: ___________________

___________________________________  ________________________

___________________________________  ________________________

Date of Inspection: ____________________

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1. Were locks and lockouts properly installed to prevent the unexpected release of energy?
2. Was ownership of the locks and keys in accordance with approved written unit procedures?
3. Were tags used and properly filled out in accordance with approved written unit procedures?
4. Was the isolation log book properly kept and up to date?
5. Was the transfer of ownership of locks, tags, and keys properly handled during shift change; i.e., in accordance with the approved written unit procedures.

(If any errors in following the Safety lockout procedures were detected, the area fails, i.e. any “no” answers to the above questions constitutes a failure.)

**The subject area was inspected as required by OSHA 1910.147 and:**

**PASSED**

If failed, retraining was completed on: ________________  By: ________________
For: __________________________________________  ________________________

**FAILED**

_____________________________
LOCK REMOVAL FORM

Authorized Craftsman: ____________________________

Company Name: ____________________________

Date: ____________________________

Project/Equipment/Location: ____________________________

Tag #: ____________________________

Lock #: ____________________________

Equipment Requiring Lock / Tag Removal

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<tr>
<th>Date</th>
<th>Time</th>
<th>Notified</th>
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<td>hr/mm (am/pm)</td>
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Why is Lock or Tag Being Removed?

A reasonable effort has been made to contact the individual who applied the Lock or Tag (i.e., call by Electrical Supervisor/Subcontractor Supervisor)

FIRST CONTACT ATTEMPT
SECOND CONTACT ATTEMPT
THIRD CONTACT ATTEMPT

The person whose Lock or Tag was Removed has Knowledge of this removal and Prior to the RETURN to the original work area have been notified

COMMENTS:

Specific Procedures:

1. ____________________________
2. ____________________________
3. ____________________________

PERSON AUTHORIZED to REMOVE LOCK OR TAG on Facility Property as described above

Name: ____________________________

Yes ☐ No ☐

PERSON AUTHORIZING the above LOCK or TAG REMOVAL

Name: ____________________________

Position: ____________________________

Time: ____________________________

Date: ____________________________
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Haselden Construction Safety Program

Subject: Housekeeping
Approved By: Safety Department
Date: 1/15/2018

1.0 Purpose

1.1 To provide and maintain good order in the workplace by keeping walk paths clear of hazards, minimizing accumulation of debris and combustibles, reducing trip hazards, controlling material storage, and promoting an efficient and safe work environment.

2.0 Scope

2.1 This procedure provides an overview of the basic requirements for housekeeping in work, storage and laydown areas. It also describes safe work practices required to provide and maintain personnel pathways through these areas.

2.2 This procedure does not address details of the requirements for hazardous waste collection or disposal, or disposal of construction debris and recycling. Hazardous waste management practices shall comply with federal, state and local regulations.

3.0 Definitions

3.1 **Housekeeping** - the act of cleaning and disposal of trash, scrap or waste materials, dirt, debris or dust.

4.0 Reference Documents

4.1 29 CFR 1926.25, Housekeeping

4.2 OSHA Ergonomics eTool; Electrical, Materials Handling: Staging and Housekeeping


4.4 29 CFR 1926.250, General Requirements for Storage

4.5 29 CFR 1910.179, Handling materials – General

4.6 29 CFR 1926.56, Illumination, Table D-3

4.7 HC Electrical Safety
4.8 HC Air Compressor and Compressed Air

4.9 HC Arc Welding and Gas Welding

4.10 HC Barricades

5.0 Responsibilities

5.1 Site Superintendent

5.1.1 To implement the procedures of this program on site.

5.1.2 To periodically evaluate the implementation of this program on the project.

6.0 Implementation

6.1 Housekeeping

6.1.1 All work areas shall be kept clean on an ongoing basis or at a minimum, will be cleaned and organized at the end of each shift.

6.1.2 Oily rags and packing materials will not be allowed to accumulate on floors or in gang boxes. Oily waste must be disposed of in containers with self-closing lids.

6.1.3 Trash barrels, recycling containers, dumpsters, lugger tubs, and roll-off boxes will be placed as needed so that employees can discard trash and scrap material.

6.1.4 Drinking water stations, saw tables and wood cutting setups, insulation application areas, and fabrication areas require trash receptacles. Contents should be identified.

6.1.5 Small round objects, such as pieces of conduit, pipe, all thread, bolt tips and welding rods will be properly discarded and NEVER placed on the ground or floor. A welding rod disposal container is required at each welding location.

6.1.6 Welding rods, nuts and bolts can fall through grating and must not be placed on the grating - they must be kept in containers.

6.1.7 Flammable paints or solvents must be stored or staged in areas designated as flammable storage.

6.1.8 Scrap lumber will have the nails or staples bent flush or removed, stacked and placed in a location where they are not a puncture hazard, and then removed daily from work areas.
6.1.9 Trash chutes and anchorage to buildings must be designed by a qualified person. Safety department approval is required.

6.1.10 Labeled containers for scrap metals, wood, cardboard or other materials will be provided and utilized when recycling is required, or when the benefit of recycling outweighs its cost.

6.1.11 Electrical cords, welding leads, and air-hoses must be run in a manner so as to minimize tripping hazards or run overhead at least 7 feet. See Haselden Electrical Safety, Air Compressor and Compressed Air, Arc Welding and Gas Welding procedures for details.

6.2 Order And Arrangement

6.2.1 Subcontractors will be assigned specific laydown and material storage areas.

6.2.2 Assignment of laydown and storage areas shall be clearly identified. The subcontractor shall assign a supervisor to maintain the area in a neat, orderly condition.

6.2.3 Barricades with signs are required where it is necessary to divide areas shared by multiple subcontractors.

6.2.4 Do not place material directly on the ground. Long material must be stored on a minimum of 4x4 inch dunnage. Smaller items such as valves, bolt boxes, cans, etc., must be stored on pallets.

6.2.5 Leave sufficient space between rows of stored materials to allow access for employees and equipment.

6.2.6 Material should not be delivered to the work area until it is needed. Excess material must be removed immediately when it is no longer required.

6.2.7 Store floats, trailers, wagons tool boxes and equipment in an orderly manner, squaring them up with adjacent materials or structures.

6.2.8 Tape barricades will be maintained at 36” to 42” above ground, square and level.

6.2.9 Return ladders to proper storage when not in use.

6.2.10 Minimize stack height of stored materials. Do not exceed floor loading capacity.

6.2.11 Stacked material must be stored at least 6 feet away from any open-sided floor edge or floor opening.

6.2.12 If material must be stored closer than 6 feet from an edge or opening, a barricade suitable for falling object protection, such as plywood fastened to the guardrail, shall be used.
6.2.13 Material that can become airborne from wind must be secured.

6.2.14 Long material such as lumber, scaffold braces, scaffold plank, conduit, pipe, or sheet materials, must not be stored leaning unsecured.

6.2.15 All material must be properly stacked and secured to prevent sliding or collapse; material that can roll must be chocked.

6.2.16 Material that is top heavy or in some other way subject to tipping over, must be guyed or otherwise secured.

6.2.17 Containers made of cardboard and other material that quickly deteriorates will not be used in areas exposed to the weather.

6.2.18 Store frequently accessed materials at waist height to minimize bending and stooping.

6.2.19 Materials must not block firefighting equipment, aisles, stairways or exits from any building.

6.2.20 Perform safety audits of laydown and storage areas.

6.3 Personnel Pathways And Work Areas

6.3.1 When planning and establishing personnel pathways, refer to HC Barricade policy.

6.3.2 Ensure pathways and work areas have adequate natural or artificial lighting:

   6.3.2.1 Lighting shall meet the requirements outlined in 29 CFR 1926.56, Illumination Table 3-D.

   6.3.2.2 In areas that have lighting levels that do not meet the requirements of Illumination Table 3-D, or in areas where lighting levels are otherwise inadequate to illuminate the task so it can be done safely to produce a quality product, task lighting may be required. The party performing the work shall perform a workplace evaluation and develop a plan to adequately illuminate the task, ensuring that walkways, work areas and egress paths are lighted.

6.3.2.3 Never store material in pathways or at landing areas, such as at the top or bottom of ladders, ramps or stairs.
7.0 Attachments

7.1 N/A
1.0 Purpose

1.1 To establish the minimum requirements Haselden Construction and its subcontractors for the guarding of reinforcing steel, conduit, metal stakes, or other protruding objects to eliminate the hazard of impalement.

2.0 Scope

2.1 This procedure applies to all Haselden Construction projects, their employees and their subcontractors.

3.0 Definitions

3.1 Impalement - The traumatic penetration of an organism by an elongated foreign object such as a stake, pole, or reinforcing steel.

4.0 Reference Documents

4.1 OSHA 29 CFR 1926.701(b)
4.2 WWW.CARNIECAPS.COM
4.3 HC Concrete and Masonry Policy

5.0 Responsibilities

5.1 Director of Safety and Health

5.1.1 To update this program as regulatory bodies or company needs arise.
5.1.2 To verify compliance with this policy on a periodic basis.

5.2 Site Superintendent

5.2.1 To assure that all site employees are trained in impalement protection in accordance with this policy.
5.2.2 To assure that impalement prevention equipment is available as necessary.
5.2.3 To periodically review the implementation of this program.
5.2.4 To identify what type of impalement protection is appropriate.
5.2.5 To enforce disciplinary action for violations of this program.

6.0 Implementation

6.1 All protruding reinforcing steel, conduit, metal stakes or other protruding objects onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement.

6.2 Rebar caps shall be used according to manufacturer’s requirements.

6.3 Mushroom caps shall not be used or permitted on any Haselden projects.

6.4 Carnie caps shall be installed per manufacturer’s requirements. This includes but is not limited to:
   6.4.1 Caps must be placed at a minimum of every 8 feet.
   6.4.2 Wood must be secured to the cap.
   6.4.3 2x4 can be used with (#4-#9) rebar and the proper cap.
   6.4.4 2x6 can be used with (#5-#16) rebar and the proper cap.
   6.4.5 Carnie caps cannot be used individually.
   6.4.6 The system must cover all protruding rebar to be effective.

6.5 Protective devices (covers or wooden troughs) for rebar are adequate if they are capable of withstanding at least 250 pounds dropped from a height of 10 feet and are properly secured.

6.6 Metal stakes 42 inches or lower in height must be protected to eliminate the hazard of impalement.

6.7 All rebar caps and protection systems must be in good condition.

6.8 Rebar caps and impalement protection systems must only be used on the size of rebar they are designed for.

7.0 Attachments

7.1 N/A
1.0 Purpose

1.1 This procedure describes requirements for reporting incidents involving occupational injuries and illnesses, chemical exposures, near misses or property damage.

2.0 Scope

2.1 Incident reporting, investigation and follow up apply to all Haselden Construction (HC) employees, contracted subcontractors and vendors that are on any HC job site or property.

2.2 All HC employees and subcontractors are responsible for reporting and investigating all incidents on a HC job site that involve one of their employees including all secondary subcontractor employees and reporting it to the HC project superintendent.

3.0 Definitions

3.1 Amputation: The traumatic loss of a limb or other external body part. Amputations include a part, such as a limb or appendage that has been severed, cut off, amputated (either completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; amputations of body parts that have since been reattached. Amputations do not include avulsions, enucleations, de-glovings, scalpings, severed ears, or broken or chipped teeth.

3.2 Fatality: Death of an Employee as a result of an occupational (work-related) injury or illness, regardless of the time between the original injury/illness and the actual date of death

3.3 First Aid Case: When any of the following are administered to an employee. Only these items are considered to be first aid treatment.

3.3.1 Using a non-prescription medication at nonprescription strength

3.3.2 Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment)

3.3.3 Cleaning, flushing or soaking wounds on the surface of the skin

3.3.4 Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™ (other wound closing
devices such as sutures, staples, etc., are considered medical treatment)

3.3.5 Using hot or cold therapy (heating pads or ice)

3.3.6 Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc.

3.3.7 Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.)

3.3.8 Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister

3.3.9 Using eye patches

3.3.10 Removing foreign bodies from the eye using only irrigation or a cotton swab

3.3.11 Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means

3.3.12 Using finger guards

3.3.13 Using massages (physical therapy or chiropractic treatment are considered medical treatment)

3.3.14 Drinking fluids for relief of heat stress

3.4 Hospitalization: A formal admission to the in-patient service of a hospital or clinic for care or treatment.

3.5 Incident: Any unplanned occurrence resulting in occupational injury, illness, or chemical exposure.

3.6 Near Miss: Any unplanned occurrence that comes very close to causing an incident without actually doing so. For example, scaffolding collapse without injuring anyone or damaging any property.

3.7 Illness: Any medical condition or disorder, other than a one-time injury, that is caused by exposure to environmental factors associated with employment. This includes acute and chronic illnesses and diseases that may be caused by inhalation, ingestion, skin absorption, or direct contact with a hazardous substance. It also includes chronic dermatitis, heat rash, heat stress illness, fainting, hypothermia, and loss of consciousness due to oxygen deficiency or chemical exposures.

NOTE: All occupational illnesses are OSHA recordable. They must be recorded on the OSHA 300 Log and reported to the workers compensation insurance carrier, regardless of their seriousness.

3.8 Injury: Cuts, sprains, strains, broken or cracked bones, amputations, burns, etc. that are caused by a one-time workplace incident or by a single chemical exposure in the workplace.
3.9 **Lost Time Injury or Illness:** Any non-fatal occupational (work related) injury or illness that causes the employee to lose at least one day of regularly scheduled work AFTER the date of the injury. Any non-fatal occupational illness that causes the employee to lose at least one day of regularly scheduled work AFTER the date the illness is first diagnosed.

3.10 **Modified Duty:** A temporary restructuring of an employee’s normal work duties that may include modification of essential or non-essential functions of the job, limitation of working hours, changes in working conditions or physical modification of the work place.

3.11 **OSHA Recordable Injury or Illness without Lost Workdays:** Injuries requiring medical treatment more than first aid but without work restrictions or lost work days after the date of injury or first diagnosis.

3.12 **Property Damage:** Any non-injury, non-illness that results in damages to property that could include tools, equipment, buildings, vehicles, personal items, and property that is worth more than or estimated to be worth more than $500.

3.13 **Restricted Work Injury or Illness:** Any non-fatal occupational injury or illness without lost work days that results in transfer to another position or termination of employment; or restricts the Employees’ physical ability to move; OR that prevents him from performing any of the duties associated with their normal work description.

4.0 **Reference Documents**

5.0 **Responsibilities**

5.1 **All Haselden Construction Employees and their Subcontracted Contracted Employees:**

5.1.1 Shall immediately report ALL incidents, property damages and near misses to your immediate Supervisor and the Haselden Construction designated Site Superintendent regardless of their seriousness. Work activities with a history of many minor injuries or near misses may indicate the presence of hazards that need correcting.

5.1.2 Should an individual state they do not want to report an incident or fill out an incident report the Supervisor must report this situation to the Haselden Project Superintendent immediately. The Superintendent is to immediately contact Haselden Director of Safety and Health to determine a course of action.

5.1.3 A written report must be submitted to Haselden’s Safety Department within 24 Hours of any incident, property damage, or near miss.

5.1.4 Incident reports can be hand written scanned and then emailed, or filled out and submitted through the “Compliance Wise” Safety system.

5.1.5 Provide at least the following information when reporting an incident or near miss:
5.1.5.1 Date, time and specific location of incident, property damage or near miss.

5.1.5.2 Work location and street address where incident or near miss occurred.

5.1.5.3 Names of all individuals, their employers or contractors, delivery personnel or vendors involved in or who may have witnessed the incident or near miss.

5.1.5.4 Names of injured personnel and witnesses, including the names of all employees, their employers or other contractors who were present when the incident happened.

5.1.5.5 Name, address, and phone number of hospital or other medical clinic where injured personnel are treated or examined.

5.1.5.6 A Description of the incident and types of injuries or damage which occurred.

5.1.5.7 Description of any property damage, chemical spills, or environmental releases, both on or off the site.

5.1.6 Assist Supervisors in investigating each incident and near miss, completing written reports, and putting corrective actions in place where necessary.

5.2 Supervisor(s) and Site Superintendent(s):

5.2.1 Obtain emergency medical assistance for injured and ill employees as needed following the sites specific medical protocols.

5.2.2 Ensure each and every injured employee will be post-incident drug tested per the HC Substance abuse policy.

5.2.3 Immediately report all incidents, property damages, vehicle incidents, and major near misses by telephoning the Haselden Construction Director of Health and Safety or Designee.

5.2.4 Should an individual state they do not want to report an incident or fill out an incident report the Supervisor must report this situation to the Haselden Project Superintendent immediately. The Superintendent is to immediately contact Haselden Director of Safety and Health to determine a course of action.

5.2.5 Complete a written Incident Report the day of the incident. Immediately fax or email a copy of the completed report to the Director of Health and Safety. Confidential Fax # 303-728-3799 (See forms in 7.1, 7.2, 7.3 attached to this procedure.) Incident Reports can also be filled out on “Compliance Wise.” Please contact the Haselden Safety department for further information on this process.
5.2.6 Ensure employees are following their Transitional Duty/Return to work restrictions to help in a speedy recovery and release to full duty.

5.3 Health and Safety Department:

5.3.1 Immediate Phone Reports to OSHA

5.3.1.1 The Health and Safety Department will report the following types of injuries and illnesses to the nearest state OSHA office within 8 hours of the incident or of HC’s first knowledge of the incident.

   5.3.1.1.1 Any work-related death
   5.3.1.1.2 Any incident that requires hospitalization of one or more persons
   5.3.1.1.3 Amputation
   5.3.1.1.4 Loss of an eye

5.3.2 Assist in all major investigations and follow ups on major incidents, near misses, property damages, vehicle damages.

6.0 Implementation

6.1 Reporting Timeline

6.1.1 Incident
6.1.2 Contact Safety Department (within 1 hour of the incident)
6.1.3 Injured worker signs Designated Provider form and selects a clinic he/she wants to go to.
6.1.4 Salary employee brings the injured worker to the clinic
6.1.5 Injured worker takes drug test, if he/she refuses the drug test they are fired immediately
6.1.6 Preliminary information filled out in incident report (within 8 hours of incident)
6.1.7 Incident report finalized (within 24 hours of incident)
6.1.8 Send paperwork of follow-up visits to Safety Director after each visit

6.2 Fatalities, Injuries, and Illness Requiring Medical Treatment beyond First Aid.

6.2.1 Obtain emergency medical assistance for injured and ill employees as needed following the sites specific medical protocols.
6.2.2 A list of at least four physicians, corporate medical providers, or a combination of both, where available, shall be provided by the employer so as to afford the injured employee the opportunity to select a treating physician. At least one of the designated providers must be at a distinct location from the other three and have distinct ownership.

6.2.3 Employees must designate their choice of clinic on the Medical Providers List and sign the form. (see sample form below)

6.2.4 Haselden employees may not drive themselves to the clinic under any circumstances. The manager is to take the employee into the facility and provide basic information to the clinic manager.

6.2.5 Each injured employee will be required to submit to an observed post-incident urine test for drugs and alcohol per the HC Substance abuse policy. The manager who takes the employee to the treating facility may not sit in on the Doctors interview and subsequent medical evaluation unless the injured employee approves or requests it.

6.2.6 The Manager needs to ensure that they have identified to the clinic the company who the injured employee works for. Please make sure the clinic reads our medical directives and protocols in their computer system so they know we have a return to work program.

6.2.7 Return the employee to the project once the doctor has released the employee to work so an appropriate investigation of the incident can occur. If necessary maintain contact with treating physicians and emergency room personnel to ensure they receive appropriate information regarding possible chemical exposures and physical requirements of each Employee’s job description.

6.2.8 Immediately report all of these types of incidents by telephoning the Haselden Construction Director of Health and Safety or his Designee.

6.2.9 Complete a written Incident Report the day of the incident. Immediately fax or email a copy of the completed report to the Director of Health and Safety. Confidential Fax # 303-728-3799 (Use hard copy to collect information, Use report in ComplianceWise.)

6.2.10 Maintain weekly contact with injured and ill employees to help them return to work as soon as medically appropriate and to demonstrate concern for their health.

6.2.11 Haselden project employees and their subcontractors shall provide modified duty for injured employees.

6.2.12 All subcontractors will cooperate with Haselden Construction by having a return to work program established at the time of contract or a letter of intent is issued. Each contractor agrees to return all workers back to work as soon as the treating provider releases an employee irrespective of the restrictions placed on an employee. Each contractor shall arrange for modified work or temporary assignments for injured workers in accordance with any and all medical or physical restrictions.
6.2.13 HC prohibits all site personnel from re-enacting incidents, due to the potential for causing additional injuries and property damage.

6.3 **First Aid Cases**

6.3.1 Complete a written Incident Report within 24 hours of the incident for cases that require only immediate first aid at the work site. (Use the ComplianceWise system to report)

6.3.2 An immediate report by phone is not required, however if the first aid incident is significant please call the Haselden Construction Director of Health and Safety or his Designee.

6.3.3 HC prohibits all site personnel from re-enacting incidents, due to the potential for causing additional injuries and property damage.

6.4 **Near Miss Investigations**

6.4.1 Investigate every near miss the day of the occurrence. Develop corrective actions for each incident and follow-up on these corrections to ensure timely implementation.

6.4.2 Interview any witnesses and document their full names, contact information such as work phone numbers, and employers. Use witness form in 7.2 of this program.

6.4.3 Document near miss investigations and corrective actions in a written incident report. Keep following each corrective action until it is completed and document the completion dates in writing on the investigation report.

6.4.4 HC prohibits all site personnel from re-enacting incidents, due to the potential for causing additional injuries and property damage.

6.4.5 An immediate report by phone is not required, however if the near miss is significant please call the Haselden Construction Director of Health and Safety or his Designee.

6.4.6 Send all original copies of all incident reports, investigations, and follow-up memos to the Director of Health and Safety or his Designee.

6.5 **Property Damage/Vehicle Incident Report**

6.5.1 All property damages greater than $500 must be immediately reported to Haselden’s Director of Safety and Health or His Designee.

6.5.2 Vehicle incidents must also be reported immediately to Haselden’s Fleet Manager.

6.5.3 A written report must be submitted to Haselden’s Safety Department within 24 hours of the occurrence.
6.5.4 HC prohibits all site personnel from re-enacting incidents, due to the potential for causing additional injuries and property damage.

7.0 Attachments

7.1 Incident Report
7.2 Witness Report
7.3 Medical Provider's List (Sample)
INCIDENT REPORT

This form will need to be completely filled out by the employees’ supervisor and signed by the employee, supervisor or site superintendent. Please inform the Safety Department the day of the Incident/injury as to what occurred. Fax or email a copy of this report to 303-728-3799, and send the original the Haselden Construction Safety and Risk Department within 24 hours of the incident.

☐ Injury Report  ☐ Near Miss  ☐ Property Damage
☐HC employee  ☐Subcontractor  ☐ Other ______________________

Today’s Date: ______________________

Injury/Incident Date: ______________________ Time of Injury/Incident: ______________________

Weather conditions at the time of incident/injury: ______________________

Job #: ______________________ Job Name: ______________________

Injured Employee’s Name: ______________________ Date of Birth: ____________

Home Address: ______________________

(Street) (City) (State & Zip)

Employee Home Phone: ______________________

Date of Hire: ______________________ Job Title: ______________________

Work Hours: ______________________

Area on job site where Incident occurred: ______________________

Describe what happened: ______________________

____________________________________

____________________________________

____________________________________

Describe equipment, chemicals, materials, tools, vehicles the employee was using at time of the incident: ______________________

____________________________________

____________________________________

____________________________________

What may have caused this incident? ______________________

____________________________________

____________________________________

____________________________________
Did employee stop working? Yes / No

If Yes, was the employee paid in full? Yes / No

Did employee sign the Designator Provider List? Yes / No

Was the employee encouraged to go to the medical clinic? Yes / No

Did the employee go to the medical clinic? Yes / No

If yes, which clinic did employee receive care? ______________________________________________________________________

If no, please explain: ______________________________________________________________________

Injury occurred to what part of the body (e.g. finger, hand, leg): __________

What type of injury (e.g. cut, possible fracture, no visible sign): __________

Did Employee return to work? Yes / No If yes, date: __________

Witness(s) Name: ______________________________________________________________________

(All witness(s) will need to complete a witness questionnaire see form Appendix W)

Check One

<table>
<thead>
<tr>
<th>No Medical Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor: Self treated</td>
</tr>
<tr>
<td>Advise the employee to update safety/risk department if future treatment is needed. Verify by recording the date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor: Clinic/Hospital/Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>If first aid has been administered, advise the employee to update the safety/risk department if future treatment is needed. Verify by recording the date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major: Emergency care 911 call</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of treatment: ____________</td>
</tr>
<tr>
<td>Name of hospital or clinic: ____________</td>
</tr>
</tbody>
</table>

Was this incident caused by an unsafe condition? Yes / No If yes, describe unsafe condition: ______________________________________________________________________

What work activity was he performing: ______________________________________________________________________

Does the work practice need to be changed: Yes / No

If yes, please describe recommended change: ______________________________________________________________________

Was the employee made aware of the safety hazards on the job site? Yes / No

Is a job hazard analysis/pre task plan on file? Yes / No

If no, explain why: ______________________________________________________________________

1/15/2018 Page 2 of 3 HC Incident Report
If personal protective equipment was required or recommended was it worn?  Yes / No

If no, explain why: ____________________________

______________________________

COMPLETE THIS SECTION FOR EQUIPMENT ACCIDENTS/PROPERTY DAMAGE

Location of accident (e.g. job site, public road) __________________________

Type of vehicles involved in accident (e.g. forklift, truck, car) __________________________

Were seat belts being used? □ used □ not used

Describe what happened: __________________________________________

______________________________

Pavement: □ Asphalt □ Steel □ Concrete □ Brick/stone □ Gravel/dirt □ other __________

Condition: □ Dry □ Wet □ Slippery □ Pot holes □ other

Was any other property damaged as a result of this accident?  Yes / No

If yes, please describe: __________________________________________

______________________________

Drivers Name: ____________________________ Drivers phone number: ____________________________

Draw an accident sketch. Show and label roadway, number of lanes, direction of travel and signs. Number each vehicle and show direction of travel from point hazard was noticed to point of impact by a solid line and any travel after impact by a dotted line.

Symbols: Your vehicle=1 Other vehicle=2 Building=3 Pedestrian= Point of impact

Employee’s Signature: ________________ Date: ________________

Supervisor/Superintendent Signature: ________________ Date: ________________
**Witness Report**

To whom it may concern:

We have been advised that you were a witness to an accident or incident involving an HC or HC subcontractor employee. We would appreciate your completing the following questionnaire to help us with an investigation and to prevent future accidents from occurring. Thank you for your time and cooperation.

Sincerely,

Site Superintendent

**Incident Date and Location:**

**Witness Information**

Name:

Phone Number:

Company Name:

(Please check all that apply)

- [ ] I was the employee involved in the incident
- [ ] I saw what happened just before the accident.
- [ ] I actually saw the accident myself.
- [ ] I saw what happened after the accident.

**Accident Information**

Please describe exactly what you saw and heard relating to this accident:

<p>| |</p>
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<tbody>
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</tbody>
</table>

**Other Witness Information**

Please list names of any other witnesses that you may be aware of:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Witness Signature: Date:
DESIGNATED PROVIDER LIST NOTIFICATION

Notice Regarding Authorized Providers for work related injuries.

If you are claiming a work related injury please select from the choices below and read through the following information provided for you reference. Pursuant to C.R. S. 8-43-404(5)(a)(I)(A) and WCRP Rule 8-2, if you are claiming that you suffered a work related injury and believe you need medical care you are required to select and treat with an approved medical provider. Insurance for the claim is provided by:

Pinnacol Assurance
7501 E. Lowery Boulevard
Denver, CO 80230
Phone: 303-361-4431
Fax: 303-361-5431

The injury or illness I suffered is:  □ Not Work Related  □ Work Related

I feel that medical care regarding my injury or illness is:  □ Not Wanted  □ Is Wanted
(Drug testing may be required if medical care is not wanted or is wanted)

If medical care is being sought, please choose from the list of providers and print the name of that provider in the lines below.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

I understand that medical assistance provided by someone other than the above selection is NOT authorized and will be denied.

__________________________________________________________
Employee Name Printed

__________________________________________________________
Employee Signature

__________________________________________________________
Date
Revision 2017 04 17
### Denver Area

<table>
<thead>
<tr>
<th>Option</th>
<th>Location</th>
<th>Hours</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concentra Littleton</td>
<td>M-F 8:00 am – 5:00 pm</td>
<td>303-798-1009</td>
<td>303-798-1324</td>
</tr>
<tr>
<td></td>
<td>20 W Dry Creek Circle Suite 100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Littleton, CO 80122</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Concentra Tech Center</td>
<td>M-F 8:00am-6:00pm</td>
<td>303-792-7368</td>
<td>303-858-7076</td>
</tr>
<tr>
<td></td>
<td>11877 E Arapahoe Rd</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Centennial, CO 80112</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Concentra Highlands Ranch</td>
<td>M-F 8am-8pm Sat. 8am-4pm</td>
<td>303-346-3627</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9330 S. University Blvd. Suite 100 &amp; 120</td>
<td>Sun: 10am-4pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Highlands Ranch, CO 80126</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Concentra Thornton</td>
<td>M-F 8am-5pm</td>
<td>303-287-7070</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500 E. 84th Ave Suite B-14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thornton, CO 80229</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Northern CO

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Hours</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ft. Collins</td>
<td>Concentra Ft. Collins Lemay</td>
<td>M-F 7am-7pm Sat. 9am-1pm</td>
<td>970-221-5811</td>
<td></td>
</tr>
<tr>
<td></td>
<td>620 S Lemay Ave. Ft. Collins, CO 80524</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longmont</td>
<td>Workwell</td>
<td>M-F 8am-5pm</td>
<td>303-702-1612</td>
<td></td>
</tr>
<tr>
<td></td>
<td>205 S. Main St. Suite C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Longmont, CO 80501</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Mountain Region

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Hours</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steamboat</td>
<td>Steamboat Medical Group</td>
<td>M-F 8am-7pm Sat. 9am-2pm</td>
<td>970-879-0203</td>
<td></td>
</tr>
<tr>
<td>Springs</td>
<td>1475 Pine Grove Rd. #102</td>
<td>Sun. 9am-12pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steamboat Springs, CO 80487</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avon</td>
<td>VVMC-Avon Occupational Health Clinic</td>
<td>M-F 8am-4:30pm</td>
<td>970-569-7715</td>
<td></td>
</tr>
<tr>
<td></td>
<td>230 Chapel Pl. Unit D101</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avon, CO 81620</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rifle</td>
<td>Grand River Primary Care</td>
<td>M-F 8:00 AM-5:00 PM</td>
<td>970-625-1100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>501 Airport Rd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rifle, CO 81650</td>
<td></td>
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</tr>
</tbody>
</table>

### Wyoming

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Hours</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laramie</td>
<td>Stitches Acute Care Center</td>
<td>M-F 8am-8pm Sat. 9am-6pm</td>
<td>307-721-1794</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3810 Grand Ave.</td>
<td>Sun. 9am-4pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laramie, WY 82070</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casper</td>
<td>Urgent Care of Casper</td>
<td>M-F 8am-8pm Sat &amp; Sun 9am-5pm</td>
<td>307-265-1110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2546 E 2nd St. Suite 200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Casper, WY 82609</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheyenne</td>
<td>Stitches Acute Care</td>
<td>M-F 9am-7pm Sat &amp; Sun 10am-4pm</td>
<td>307-514-9888</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1919 Central Avenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cheyenne, WY 82001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheyenne</td>
<td>HealthReach Urgent Care</td>
<td>M-F 7am-9pm Sat &amp; Sun 8am-5:30pm</td>
<td>307-635-3500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2030 Blue Grass Circle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.0 Purpose

1.1 This document is designed to provide some guidelines for working in a health care facility. Special considerations are needed when working in health care facilities to help ensure compliance with the facilities health and safety programs.

2.0 Scope

2.1 This document applies to all Haselden Construction work in medical facilities.

3.0 Definitions

4.0 Reference Documents

4.1 Joint Commission on Accreditation of Healthcare Organizations www.jcaho.org

4.2 Centers of Medicare and Medicaid Services (CMS) www.cms.hhs.gov

4.3 Occupational Health and Safety Administration (OSHA) www.osha.gov


4.7 National Fire Protection Agency (NFPA) Life Safety Codes

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Responsible for managing and implementing this program.

6.0 Implementation

6.1 General Workplace Safety
6.1.1 Employees will be knowledgeable of the medical facilities’ safety policies, security policies, patient confidentiality requirements, facilities code of conduct and fire plan related to their work.

6.1.2 Employees will maintain free and clear exits and hospital corridors at all times.

6.1.3 Ladders and tools will not be left unattended at any time in public access areas.

6.1.4 Smoking is strictly prohibited in health care facilities. All construction personnel who wish to smoke will adhere to the medical facilities’ smoking policy. Smoking in unapproved areas of the medical facility may result in removal from the job.

6.1.5 Medical facility badging policy will be followed (including criminal background checks if required). Badges must be worn at all times while working in the facility and returned to the appropriate office if an employee will not be returning to the job site.

6.1.6 Existing water, bathroom, electrical, food, or vending services will not be used for construction activities or workers unless they have been previously approved by facility management for construction use.

6.1.7 Good housekeeping practices will be enforced.

6.1.8 When construction hazards exist that cannot be eliminated, hazard-specific engineering and administrative controls, training in safe work practices, and Personal Protective Equipment will be implemented.

6.2 Method of Procedures (MOPs)

6.2.1 To help ensure proper communications between the medical facility and construction activities MOPs should be utilized.

6.2.2 MOPs should include (see attached forms):

6.2.2.1 Plan of construction activities
6.2.2.2 Safety measures
6.2.2.3 Utility shut down notifications
6.2.2.4 Fire alarm service outages
6.2.2.5 Hours of work to be performed
6.2.2.6 Hot work
6.2.2.7 Infection Control Risk Assessment (ICRA)

6.3 Fire Detection Systems / Fire Safety
6.3.1 At no time will any of the medical facilities fire detection system be disabled without prior approval from the medical facility.

6.3.1.1 Hospital Management will be given prior notification of any disruptions to the fire detection system due to construction activities which include disabling of any detection device and restoral of that device when work is complete.

6.3.2 Interim Life Safety Measures (ILSM)

6.3.2.1 In order to maintain a safe environment for patients, staff, and visitors when life safety systems are disabled due to construction activities, medical facilities may be required to enact ILSM. If such measures are necessary, all construction personnel will follow the facility's procedures.

6.3.2.2 ILSM include ensuring emergency access routes through or around construction areas, posting a fire watch, participating in facility fire drills, attending and/or conducting additional training in fire safety, and adding additional fire extinguishers.

6.3.3 All welding, cutting or soldering within the medical facility will require a hot work permit. (See attached hot work permit). It is necessary to check with the medical facility as to their hot work permit requirements and any forms required by the facility.

6.3.3.1 All safety precautions will be followed while performing hot work.

6.3.4 All construction debris must be removed at the end of the work day to help minimize the risk of fire.

6.3.5 Accumulation of combustible materials will be kept to a minimum and will be properly stored at all times.

6.4 Utility Shut Downs

6.4.1 Utility systems are essential to the safety and health of patients and employees working in a medical facility. At NO TIME will any utility systems be interrupted, shut down, or maintenance performed without prior written approval from the medical facility. Unscheduled interruption to any utility system will not be tolerated.

6.5 Infection Control

6.5.1 Construction projects will follow the medical facility’s requirements for controlling construction related contaminants.

6.5.2 An infection control risk assessment (ICRA) will be completed prior to the start of the project and a permit obtained from the infection control department of the medical facility. (See attached ICRA example.)

6.5.2.1 A copy of the infection control construction permit will be retained in the superintendents’ office and a copy posted in the work area.
6.5.2.2 All requirements on the permit will be followed unless prior permission is received to alter the permit.

6.5.2.3 An infection control construction monitoring form will be completed as necessary, but at a minimum, on a weekly basis to help ensure compliance. (See attached Infection Control Construction Site Monitoring Form).

6.5.2.4 Subcontractor employee training for site specific (ICRA/INFECTION CONTROL) requirements will be received by all affected employees prior to work commencing. All supporting documentation will be maintained on site.

6.5.3 General Precautions include:

6.5.3.1 Proper ventilation including the use of negative air machines with HEPA filters.

6.5.3.2 The project site must be completely contained by impervious barriers which may include:

- 6.5.3.2.1 Temporary sheetrock or fire-rated plywood walls with metal studs.
- 6.5.3.2.2 Double poly with a 1" gap.
- 6.5.3.2.3 All seams properly sealed and access clearly marked.
- 6.5.3.2.4 All temporary walls, partitions or enclosures will be sealed by tape or caulk at all seams, joints, floors, ceilings, and decks to prevent air, dust, or particulate matter from leaving the work zone.
- 6.5.3.2.5 All work zone ductwork, shafts, or common air chases will be sealed or diverted from the work zone.
- 6.5.3.2.6 Facility medical gas, water, and sewer lines systems will be appropriately tagged “Do Not Use, Out of Service” and blanked.

6.5.3.3 Determination of the type of barrier will be based on the type of project, location and duration.

6.5.3.4 If a project will be contained to a single room/area, sealing of door may be acceptable.

6.5.3.5 Tacky mats will be placed as appropriate and maintained to control tracking of dust and debris from the construction area.

6.5.3.6 Wet mopping will be done as necessary to help control the tracking of dust throughout the medical facility.

6.5.3.7 All movement of material to and from the job site will be coordinated with the medical facilities representative, and will
strictly follow the designated route; this includes the use of elevators.

7.0 Attachments:

7.1 Method Of Procedure (MOP)
7.2 Fire Alarm disable Request
7.3 Hot Work Permit
7.4 Infection Control Construction Site Monitoring form
7.5 Infection Control Construction Permit
7.6 Infection Control JHA
## JOB SITE NAME:

<table>
<thead>
<tr>
<th>Method of Procedure (MOP)</th>
<th>24 Hour Notice Required</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date:</th>
<th>Facilities Project Manager:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus/Building:</td>
<td>Floor:</td>
</tr>
</tbody>
</table>

### Description of work to be performed:

- [ ]
- [ ]
- [ ]

### Other areas affected by this work:

- [ ]
- [ ]
- [ ]

### Proposed start date & time: Proposed completion date & time:

- [ ]
- [ ]

### Duration of Work activity: General Contractor:

- [ ]
- [ ]

### Contact Name: Phone Number:

- [ ]
- [ ]

### Subcontractor:

- [ ]
- [ ]

### Contact Name: Phone Number:

- [ ]
- [ ]

### Is Hot Work Permit Required? Is a Scheduled Utility Outage form required? Is a Fire Alarm Disable form completed? Is an Infection Control Permit completed?

- [ ]
- [ ]
- [ ]

### Safety Issues, Environmental Concerns, Noise Levels. Odor, Etc.:

- [ ]
- [ ]
- [ ]

### Additional comments:

- [ ]
- [ ]
- [ ]

### Submitted by: Date:

- [ ]
- [ ]
**FIRE ALARM DISABLE REQUEST**

**24 HOUR NOTICE REQUIRED**

<table>
<thead>
<tr>
<th>Building</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor</td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td></td>
</tr>
<tr>
<td>Room</td>
<td></td>
</tr>
</tbody>
</table>

(PLEASE INDICATE NAME OF UNIT, CLINIC OR AREA INVOLVED; I.E. ORTHOPEDIC CLINIC, NICU, CAFETERIA, RADIOLOGY ETC.)

<table>
<thead>
<tr>
<th>Date of Disable</th>
<th>Time of Disable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date to Enable</td>
<td>Time to Enable</td>
</tr>
</tbody>
</table>

**Reason for Disable:**

<table>
<thead>
<tr>
<th>Reason for Disable</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
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</tbody>
</table>

**THIS REQUEST MUST BE DELIVERED TO THE MEDICAL FACILITIES ENGINEERING DEPARTMENT OR PLANT OPERATIONS AT LEAST ONE WORKING DAY PRIOR TO THE SHUT DOWN OF THE FIRE ALARM ZONE(S). MONDAY DISABLES MUST BE TURNED IN THE PROCEEDING FRIDAY BY 12:00 NOON. ZONES ARE DISABLED BETWEEN THE HOURS OF 6:30 AM TO 3:30 PM ONLY.**

<table>
<thead>
<tr>
<th>Person accepting responsibility of disabled zone(s) and notification of zone occupants while area is disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Company/Department</td>
</tr>
<tr>
<td>Campus Extension or Emergency contact number:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Submitted by:</th>
<th>Phone #</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## HOT WORK PERMIT

<table>
<thead>
<tr>
<th>Site</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requestor of Permit</td>
<td></td>
</tr>
<tr>
<td>Hot Work Location</td>
<td></td>
</tr>
<tr>
<td>Duration of Permit Date</td>
<td>Time</td>
</tr>
<tr>
<td>Nature of Work</td>
<td></td>
</tr>
</tbody>
</table>

The person requesting the permit and a person authorized to issue a permit shall check the following items within at least 35 feet of the proposed work area and resolve any problems prior to issuing the permit.

### ITEMS TO BE INSPECTED PRIOR TO THE START OF HOT WORK

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>General condition of area housekeeping.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Necessary equipment tagged out of service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire protection system in service.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove all flammable and combustible materials.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove or cover flammable and combustible liquid storage cabinets and containers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweep or vacuum away all combustible dusts. Wet the area down after it is cleaned.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check area for combustible vapors ____%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean containers and/or purge or inert any piping or vessels prior to welding, cutting, or heating (if they are used to transport or store flammables or combustibles).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening in floors or walls shall be covered to contain sparks and hot slag.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firewatch equipped with a fire extinguisher and instructed to stay in the area for a minimum of 30 minutes after the work is complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work area barricaded or roped off if necessary and protection for other workers in place for any falling sparks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the communications in the area (phones, radios).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notify the watch engineer or appropriate operations area supervision.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All hot work personnel trained on site specific hot work procedures and fire suppression duties.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PERMIT AUTHORIZATION AND COMPLETION SIGNATURES

<table>
<thead>
<tr>
<th>Signature of Permit Requestor</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature of Permit Authorizer</td>
<td>Date</td>
</tr>
</tbody>
</table>

Verification Signature of Requestor that All Permit Requirements Have Been Completed | Date |

**THIS PERMIT IS VALID FOR NO MORE THAN 8 HOURS**

**NOTE:** This permit may be revoked at any time for any reason.
Infection Control Construction Site Monitoring Form

Date: ______________ Project: ______________________________

Time: ______________ Location in Hospital: ____________________

Inspector Name and Title: _______________________________________

<table>
<thead>
<tr>
<th>Item</th>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was ICRA done and IC permit posted</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are appropriate barriers in place for the project: Polyethylene,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>plywood, gypsum board, and hard door on ante room?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barriers Sealed, no tears or penetrations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tacky mats in place and kept clean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door are closed at all times and/or sealed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjacent ceiling areas/tiles intact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjacent floor area clean, no dust tracked. Mopped as necessary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows properly sealed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative pressure machines in use in construction area. Negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pressure check with respect to hallway/patient area</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Negative air machines are plugged into emergency circuits or</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>procedures in place for a utility failure?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air flow and pressure differential being monitored. Reports on file</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEPA filter being used, properly installed and changed as needed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return air ducts within construction zone properly covered with at</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>least 6 mil polyethylene sheeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debris removed properly, daily and as scheduled with hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debris carriers clean, free of dust, and covered during transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thru the facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do debris need to be misted with spray solution prior to removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are small items (tools, saws) transported through the facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>covered or properly wrapped</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior to removal of any construction barrier, is all construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>debris removed, are vacuumed with HEPA filter vac and wet mopped.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The person to contact, the contact information is available for</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>instances where work stoppage must be requested/required?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods are in place for protecting patients, visitors, staff, or</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>material traffic that must pass through the construction zone?</td>
<td></td>
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</tbody>
</table>
Infection Control Construction Permit

<table>
<thead>
<tr>
<th>Location of Construction:</th>
<th>Project Start Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Coordinator:</td>
<td>Estimated Duration:</td>
</tr>
<tr>
<td>Contractor Performing Work</td>
<td>Permit Expiration Date:</td>
</tr>
<tr>
<td>Supervisor:</td>
<td>Telephone:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>CONSTRUCTION ACTIVITY</th>
<th>YES</th>
<th>NO</th>
<th>INFECTION CONTROL RISK GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TYPE A: Inspection, non-invasive activity</td>
<td>GROUP 1: Low Risk</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>TYPE B: Small scale, short duration, moderate to high levels</td>
<td>GROUP 2: Medium Risk</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>TYPE C: Activity generates moderate to high levels of dust, requires greater 1 work shift for completion</td>
<td>GROUP 3: Medium/High Risk</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>TYPE D: Major duration and construction activities Requiring consecutive work shifts</td>
<td>GROUP 4: Highest Risk</td>
<td></td>
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</tr>
</tbody>
</table>

**CLASS I**
1. Execute work by methods to minimize raising dust from construction operations.
2. Immediately replace any ceiling tile displaced for visual inspection.
3. Minor Demolition for Remodeling

**CLASS II**
1. Provides active means to prevent air-borne dust from dispersing into atmosphere
2. Water mist work surfaces to control dust while cutting.
3. Seal unused doors with duct tape.
4. Block off and seal air vents.
5. Wipe surfaces with disinfectant.
6. Contain construction waste before transport in tightly covered containers.
7. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area.
8. Place dust mat at entrance and exit of work area.
9. Remove or isolate HVAC system in areas where work is being performed.

**CLASS III**
1. Obtain infection control permit before construction begins.
2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system.
3. Complete all critical barriers or implement control cube method before construction begins.
4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.
5. Do not remove barriers from work area until complete project is thoroughly cleaned by Env. Services Dept.
6. Vacuum work with HEPA filtered vacuums.
7. Wet mop with disinfectant.
8. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.
10. Cover transport receptacles or carts. Tape covering.
11. Remove or isolate HVAC system in areas where work is being performed.

**Class IV**
1. Obtain infection control permit before construction begins.
2. Isolate HVAC system in area where work is being done to prevent contamination of duct system.
3. Complete all critical barriers or implement control cube method before construction begins.
4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.
5. Seal holes, pipes, conduits, and punctures appropriately.
6. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.
7. All personnel entering work site are required to wear shoe covers.
8. Do not remove barriers from work area until completed project is thoroughly cleaned by the Environmental Service Dept.
9. Vacuum work area with HEPA filtered vacuums.
10. Wet mop with disinfectant.
11. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.
12. Contain construction waste before transport in tightly covered containers.
13. Cover transport receptacles or carts. Tape covering.
14. Remove or isolate HVAC system in areas where work is being done.

**Additional Requirements:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Initial</th>
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<tbody>
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</table>

Exceptions/Additions to this permit are noted by attached memoranda

Permit Request By: ____________________________  Permit Authorized By: ____________________________

Date: ____________________________  Date: ____________________________
# Infection Control JHA

<table>
<thead>
<tr>
<th>Task/Activity</th>
<th>Hazards</th>
<th>Preventative Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working inside a Medical Facility</td>
<td>All workers entering the medical facility will be properly attired. This includes but is not limited to: Boots, Long pants, and shirts with at least 4&quot; sleeves.</td>
<td>Minimum PPE must be worn at all times inside the hospital (hard hat, safety glasses, high visibility vest. Other PPE may be needed dependent upon task.)</td>
</tr>
<tr>
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<td></td>
<td>ID badges must be worn at all times</td>
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<td></td>
<td>When walking through the hospital to the construction area - only enter authorized areas. Do not enter any other areas. Do not explore the hospital or look into rooms.</td>
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<tr>
<td></td>
<td>Be quiet and respectful while in the hospital. No yelling or foul language</td>
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<tr>
<td></td>
<td>Facilities personnel, patients, and the public always have the right of way.</td>
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<tr>
<td></td>
<td>Tobacco use is prohibited in all areas of the hospital.</td>
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<tr>
<td></td>
<td>Employees will utilize temporary power brought in from the outside. Any use of standard wall recepticles must be used with a Ground Fault Circuit Interrupter (GFCI).</td>
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<tr>
<td></td>
<td>All workers must clean up scrap, dust, dirt, and debris as they work. - cleaning up at the end of the task or at the end of the day is not acceptable.</td>
<td>No doors or roof hatches may be propped open or locks defeated for both security and fire protection reasons.</td>
</tr>
<tr>
<td></td>
<td>Carts and materials must never be stored in hallways, doorways, stairwells, or any area other than the construction area without express consent from Haselden Management.</td>
<td>Flammable or combustable materials may not be stored in the Medical Facility overnight. They must be removed and stored in a proper outside location.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gas cans or gas powered equipment are not permitted in the hospital.</td>
</tr>
<tr>
<td></td>
<td>Any Hot Work being performed requires a daily Hot Work Permit. This can be obtained from Haselden construction.</td>
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</tr>
<tr>
<td></td>
<td>All Hot Work must have a fire watch and be posted in hot work area for at least 30 minutes after hot work is complete.</td>
<td>An ABC rated and inspected fire extinguisher must be within 20' of hot work.</td>
</tr>
<tr>
<td></td>
<td>Breaks and Lunch will only be allowed in Haselden designated break areas.</td>
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</tr>
<tr>
<td>Putting the patients, workers, employees, or public at risk.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>When entering into construction areas close all doors before proceeding to open the next door. Do not leave doors to the construction area open for any reason.</td>
<td>At no time will materials, carts, or tools be in public corridors of the Hospital. Everything must be clean and free of dust, dirt, or debris.</td>
</tr>
<tr>
<td></td>
<td>When working in construction areas, work may only be excuted using methods to minimize or eliminate dust. (example: HEPA vaccums, wet methods)</td>
<td>Any loose or damaged ICRA walls or doors must be reported to Haselden immediately. Missing or finished sticky mats must be reported to Haselden immediately.</td>
</tr>
<tr>
<td></td>
<td>If a ceiling tile must be removed, it must be replaced when the work is not being performed</td>
<td>If any ICRA barriers or mechanisms have been disabled or compromised work must be stopped immediately and may not commence until the ICRA issue is corrected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative pressure must be maintained. Do not unplug or disable negative air filtering machines.</td>
</tr>
<tr>
<td>Exposing the patients, employees, or public to infectious disease.</td>
<td>Constraction and demolition work may not be performed until ICRA protection is in place and complete. This includes exploratory above ceiling work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ensure clothing is free of dust, dirt, and debris before leaving the construction area. HEPA vaccums will be used to perform this task.</td>
<td>Boots must be free from dust, dirt, and debris before leaving the construction area. Sticky mats and other methods will be used to perform this task.</td>
</tr>
<tr>
<td></td>
<td>Booties must be worn in all Class IV or other areas deemed as needing extra protection. Booties will be removed prior to leaving the construction area.</td>
<td>Booties must be worn in all Class IV or other areas deemed as needing extra protection. Booties will be removed prior to leaving the construction area.</td>
</tr>
<tr>
<td></td>
<td>Any dust, dirt, or debris witnessed outside the construction area must be cleaned up immediately or notify Haselden immediately.</td>
<td>When removing scrap, trash, or debris from the construction area by cart, the cart must be covered with plastic and sealed. Wheels of the cart will be cleaned off prior to leaving.</td>
</tr>
<tr>
<td>Enforcement</td>
<td>Deviations or Violations from the above controls will be subject to diciplinary actions up to and including termination from the project.</td>
<td></td>
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</tbody>
</table>
1.0 Purpose

1.1 This procedure establishes the minimum requirements for the selection, construction and safe use of stairways and ladders on a project.

2.0 Scope

2.1 This procedure applies to all Haselden Construction employees and subcontractors.

2.2 A ladder, stairway or properly constructed ramp must be provided at all personnel points of access where there is a break in elevation of 19 inches or more.

2.2.1 Exception: Access to scaffold shall be in accordance with the Haselden Scaffolding Policy.

2.2.2 Exception: Access to excavations and trenches shall be in accordance with the Haselden Excavation and Trenching policy.

3.0 Definitions

3.1 **Aluminum Ladder:** A ladder that is primarily made out of aluminum including the side rails and feet.

3.2 **Cleat:** A wooden ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.

3.3 **Double Cleat Ladder:** A ladder similar in construction to a single cleat ladder but with a center rail to allow simultaneous two-way traffic for employees ascending or descending.

3.4 **Extension Ladder:** A non-self-supporting portable ladder that is adjustable in length. It has rungs, usually aluminum, supported by two (fiberglass) side rails, rung latches and an adjustment rope.

3.5 **Fixed Ladder:** A ladder that cannot be readily moved or carried because it is an integral part of a building or structure.

3.6 **Infeasible:** Incapable of being done or carried out because methods have not been developed or technology is not commercially available, or when use of an available method or technology creates a greater hazard.
3.7 **Job-Made ladder**: A ladder that is fabricated by employees, typically at the construction site, and is not commercially manufactured.

3.8 **Permanent Stairway**: A stair where landings, treads, guardrails and handrails are the complete and permanent installation.

3.9 **Single-Rail Ladder**: A portable ladder with rungs, cleats, or steps mounted on a single rail instead of the normal two rails used on most other ladders. (Not allowed by OSHA or Haselden)

3.10 **Step Ladder or A Frame Ladder**: A self-supporting foldable, portable ladder, usually nonadjustable in length, with flat steps, and a top cap. Neither the top cap nor top step can be climbed on.

3.11 **Step Stool**: A self-supporting, foldable, portable ladder, nonadjustable in length, 32 inches or less in overall height, with flat steps and without a pail shelf, designed to be climbed on the ladder top cap as well as all the steps. The side rails may continue above the top cap. A drywall bench is considered a step stool if it is 32” high or less. A drywall bench taller than 32” is considered a step ladder.

3.12 **Trestle Ladder**: A self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable extension section, with a suitable means for locking the ladders together.

3.13 **Stair Rail System**: A vertical barrier erected along the unprotected sides and edges of a stairway to prevent employees from falling to lower levels.

3.14 **Temporary Service Stairway**: A stairway which will become part of the building where permanent treads and/or landings are to be filled in at a later date. Handrails and stair rails may be permanent or temporary.

3.15 **Temporary Stairway**: Modular stairs, scaffold tower stairs, portable stairs, or job-built stairs that are used for access on a project and that meet the requirements of 29 CFR 1926 Subpart X and of this policy.

3.16 **Tread Depth**: The horizontal distance from front to back of a tread, excluding applied nosing, if any.

3.17 **Walking/Working Surface**: Any horizontal or vertical surface on or through which an employee walks, works, or gains access to a work area or workplace location.

3.18 **Wooden (non-job made) Ladder**: A manufactured ladder that is primarily made of wood.

4.0 **Reference Documents**

4.1 OSHA 29 CFR 1926.1050 Subpart X

4.2 OSHA Publication 3124 – Stairways and Ladders

4.3 29 CFR 1910.25 – Portable Wood Ladders

4.4 29 CFR 1910.26 – Portable Metal Ladders
4.5 Haselden Trenching and Excavation Policy

4.6 Haselden Scaffold Policy

4.7 Haselden Fall Protection Policy

5.0 Responsibilities

5.1 Director of Safety and Health:

5.1.1 Review this program on a periodic basis and update or change as needed

5.1.2 Provide assistance to the projects.

5.2 Site Superintendent(s):

5.2.1 Ensure that all employees are following this program.

5.2.2 Enforce the program guidelines

5.2.3 Direct areas and locations where access stairs and ladders should be placed.

5.2.4 Assess risk and plan the project access to minimize ladder use.

6.0 Implementation

6.1 Stairways: Requirements covering stairways and their components depend on how and when stairs are used. The following are rules for stairs used during construction and stairs used temporarily during construction, as well as rules governing stair rails and handrails.

6.1.1 A stairway, temporary or permanent, shall be provided for any structure under construction or renovation that is more than one story or 16 feet or more in height. The stairway shall access each working level, including the main roof.

6.1.2 The stairway shall be in place and ready for use before a working level or portion thereof is released to trades for activities other than steel or precast erection, installation of metal deck, framing and sheeting, shoring and forming decks and beams, installation of concrete reinforcement, or installation of sleeves, blockouts and inserts.

6.1.3 A minimum of one stairway shall be kept open at all times to provide access to each floor and the main roof.

6.1.4 A second stairway or ladder shall be provided as a secondary means of egress.

6.2 Stairways Used During Construction: The following requirements apply to all stairways used during construction:
6.2.1 Stairways that will not be a permanent part of the building under construction must have landings at least 30 inches deep and 22 inches wide (76 x 56 cm) at every 12 feet (3.7 m) or less of vertical rise.

6.2.2 Stairways must be installed at least 30 degrees and no more than 50 degrees from the horizontal.

6.2.3 Variations in riser height or stair tread depth must not exceed 1/4 inch in any stairway system, including any foundation structure used as one or more treads of the stairs.

6.2.4 Doors and gates opening directly onto a stairway must have a platform that extends at least 20 inches (51 cm) beyond the swing of the door or gate.

6.2.5 Metal pan landings and metal pan treads must be secured in place before filling.

6.2.6 Stairway parts must be free of dangerous projections such as protruding nails, wires or splinters.

6.2.7 Slippery conditions on stairways must be corrected.

6.2.8 Workers must not use spiral stairways that will not be a permanent part of the structure.

6.3 Temporary Stairs: The following requirements apply to stairways used temporarily during construction.

6.3.1 Except during construction of the stairway, do not use stairways with metal pan landings and treads if the treads and/or landings have not been filled in with concrete or other materials. The pans of the stairs and/or landings may temporarily be filled in with wood or other solid materials. All treads and landings must be replaced when worn below the top edge of the pan.

6.3.2 Do not use skeleton metal frame structures and steps (where treads and/or landings will be installed later) unless the stairs are fitted with secured temporary treads and landings.

*Note:* Temporary treads must be made of wood or other solid material and installed the full width and depth of the stair.

6.3.3 Modular stairs may be used in accordance with the manufacturer’s instructions.

6.3.3.1 Modular stairs shall be built in accordance with these requirements.

6.3.3.2 Modular stairs shall be rated for the anticipated load of personnel, tools and materials used on the stairs.

6.3.3.3 If modular stairs are to be hoisted or moved with a crane, they shall be engineered and approved for that purpose.
6.3.3.4 Modular stair manufacturer’s instructions shall be available on the jobsite.

6.3.3.5 Use of scaffold stairs for access to walking/working surfaces will be cited by OSHA and is prohibited under this policy.

6.4 **Stair Rails:** The following general requirements apply to all stair rails, for temporary and permanent rails used for construction.

6.4.1 Stairways with four or more risers or rising more than 30 inches (76 cm) in height- whichever is less- must be installed along each unprotected side or edge. When the top edge of a stair rail system also serves as a handrail, the height of the top edge must be no more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stair rail to the surface of the tread.

6.4.2 Stair rails must be not less than 36 inches (91.5 cm) in height.

6.4.3 Top edges of stair rail systems used as handrails must not be more than 37 inches (94 cm) high nor less than 36 inches (91.5 cm) from the upper surface of the stair rail system to the surface of the tread.

6.4.4 Stair rail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.

6.4.5 Ends of stair rail systems and handrails must be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system.

6.5 **Additional Stair Rail Requirements**

6.5.1 Unprotected sides and edges of stairway landings must have standard 42-inch guardrail and midrail systems.

6.5.2 Intermediate vertical members, such as balusters used as guardrails, must not be more than 19 inches (48 cm) apart.

6.5.3 Other intermediate structural members, when used, must be installed so that no openings are more than 19 inches (48 cm) wide.

6.5.4 Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.

6.6 **Handrails**

6.6.1 Handrails and top rails of the stair rail systems must be able to withstand, without failure, least 200 pounds (890 n) of weight applied within 2 inches (5 cm) of the top edge in any downward or outward direction, at any point along the top edge.

6.6.2 Handrails must not be more than 37 inches (94 cm) high nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread.
6.6.3 Handrails must provide an adequate handhold for employees to grasp to prevent falls.

6.6.4 Temporary handrails must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair rail systems and other objects.

6.6.5 Stairways with four or more risers, or that rise more than 30 inches (76 cm) in height- whichever is less- must have at least one handrail.

6.6.6 Winding or spiral stairways must have a handrail to prevent use of areas where the tread width is less than 6 inches (15 cm).

6.7 Midrails

6.7.1 Midrails, screens, mesh, intermediate vertical members or equivalent intermediate structural members must be provided between the top rail and stairway steps to the stair rail system. When midrails are used, they must be located midway between the top of the stair rail system and the stairway steps.

6.8 Ladders

6.8.1 Access to an upper level should be provided by a stair.

6.8.2 Ladders should never be used as a substitute for a scaffold, aerial lift or a scissors lift. Safer alternatives shall be considered as a primary means of access for work.

6.8.3 If possible, consider performing the work on the ground or on a stable work platform to eliminate the hazard.

6.8.4 A JHA must be prepared for each task where ladders will be used.

6.8.5 Ladders may be used only after it is determined that there is no other feasible means of performing the work. This requires a documented risk assessment. A JHA may serve as such documentation if it describes why other means of access are infeasible.

6.8.6 Extension ladders used for access to an upper level, when permitted, must have a walk-through extension and a gate.

6.8.7 If ladders must be used, plan and sequence the work to minimize the number of trips up and down a ladder.

6.9 When to consider alternatives to a ladder

6.9.1.1 When access is required from one floor or level to another.

6.9.1.2 When the work task requires two hands

6.9.1.3 When working on uneven, unstable or slippery surfaces
6.9.1.4 When working near electrical conductors

6.9.1.5 When other employees or equipment may contact a ladder

6.9.1.6 When repositioning is required in the middle of task

6.9.1.7 When heavy or bulky material must be lifted into place

6.9.1.8 When the employee cannot face the ladder

6.9.1.9 When working in awkward positions

6.9.1.10 When excessive body movement or exertion is required

6.9.1.11 When the task requires reaching so the employee’s belt buckle will be outside the ladder rail.

6.9.1.12 When a ladder cannot be set up at a 4:1 angle.

6.9.1.13 When a ladder cannot be secured.

6.9.1.14 When three points of contact cannot be maintained while ascending or descending.

6.9.1.15 For jobs of long duration.

6.9.1.16 For jobs involving multiple employees.

6.9.1.17 For jobs where the physical condition of the employee is a consideration.

6.9.1.18 For jobs at high elevations

6.9.2 Alternatives to a conventional stepladder

6.9.2.1 Mobile stair

6.9.2.2 Podium ladder or platform ladder with guards

6.9.2.3 Tripod ladder

6.9.2.4 Lift pod

6.9.2.5 Scissors lift or aerial lift

6.9.2.6 Scaffold

6.9.3 Additional alternatives to a straight or extension ladder

6.9.3.1 Permanent stair

6.9.3.2 Scaffold stair

6.9.3.3 Ladder leveling outriggers
6.9.3.4 Ladder walk through extension

6.9.4 A double cleated ladder or two or more separate ladders shall be provided when ladders are allowed as the only means of access or egress from a working area for 25 or more employees.

6.9.5 The steps of manufactured ladders shall be corrugated, knurled, dimpled, or coated with skid-resistant material.

6.9.6 Users of manufactured ladders shall follow the manufacturer’s instructions for use.

6.9.7 Aluminum ladders shall not be used on-site without written approval from Haselden’s Director of Safety and Health or Designee.

6.9.8 Manufactured wooden ladders shall not be used on-site without written approval from Haselden’s Director of Safety and Health or Designee.

6.9.9 Job built ladders shall not be used unless constructed in accordance with ANSI standards, per Attachment 1 of this policy, and only after initial inspection by the HC Superintendent.

6.9.10 Ladders must be faced when ascending or descending.

6.9.11 Use of Light Duty (Type III) and Medium Duty (Type II) ladders is prohibited. Minimum duty rating of a ladder to be used on a Haselden project is 250 lbs.

6.9.12 The weight of the employee, tools and any materials must not exceed the duty rating of the ladder.

6.9.13 When ladders are used to access another level, ladder access areas shall be provided with a gate or an offset to prevent employees from walking directly off an edge or into a hole.

6.9.14 All ladders must be free from visible defects.

6.9.15 All manufactured ladders shall have all manufacturer provided labels intact and legible.

6.9.16 Only one person is allowed to be on or work from a ladder at a time, unless they are specifically made for more than one user.

6.9.17 Ladders shall not be used in a horizontal position or as a scaffold even when so designed.

6.9.18 Keep the areas around the top and base of ladders free of tripping hazards, such as loose materials, trash, hoses and electric cords.

6.9.19 Protect, barricade, guard, and install signs indicating that a ladder is blocking passageways or doorways.

6.9.20 Remove mud, grease or other substances from feet before using the
ladder; this will minimize the potential for slips and falls

6.9.21 Climb a ladder holding the rungs, not the rails.

6.10 Fall Prevention

6.10.1 When working from a ladder, the ladder must be set back from an edge, opening or stair by a distance sufficient to prevent the employee from falling over the edge or through the opening if the ladder should tip, or if the employee were to fall from the ladder. If this ladder distance cannot be maintained, a personal fall arrest system (PFAS) is required to climb or work from the ladder. Note that a JHA is required for ladder use.

6.10.2 Ladders shall be set up with a minimum clearance of seven inches between any rung and an obstruction behind it to allow for safe footing.

6.10.3 Ladders shall be set up with a maximum of twelve inches between the ladder and the walking/working surface at the step-off level.

6.10.4 Three points of contact must be used to ascend or descend a ladder. (Example one hand and two feet, or two hands and one foot.)

6.10.5 NEVER carry objects, tools, or other materials in the hands. Hand lines will be used to raise or lower tools or materials

6.10.6 Face the ladder while ascending or descending.

6.10.7 Step ladders will NOT be used as access to another elevated work area

**NOTE:** The exception is the use of a step ladder is to access floats and trailers, when they are placed adjacent to the trailer and secured to the trailer to prevent tipping. The top of the step ladder must extend at least 3 feet above the stepping off point.

6.10.8 If an employee cannot keep the belt buckle within the rails of the ladder, PFAS will be required. Note that a JHA is required for ladder use.

6.10.9 When working from a ladder, the employee must maintain both feet on the ladder and must lean into the ladder with either both knees or both thighs. Note that a JHA is required for ladder use.

6.10.10 Always descend the ladder to reposition it.

6.10.11 **DO NOT** place one foot on pipe, duct, conduit, service line, structural member, or walking/working surface while working from a ladder.

6.10.12 Extension, job-built or straight ladders must be secured top and bottom before use. During setup, one employee may hold the ladder for another employee while he ascends it to secure the top of the ladder.

6.10.13 Securing a ladder may be accomplished by one employee holding a ladder while it is being used by another employee.
6.10.14 Never straddle a ladder.

6.10.15 When an employee uses PFAS while working from a ladder, calculate the fall distance to ensure the employee will not strike the walking/working surface or an obstruction or piece of equipment in the event of a fall.

6.11 Extension Ladders:

6.11.1 Must be equipped with a rope of at least ½ inch synthetic fiber spliced to the third rung from the top to provide a tie-off rope for when the ladder is set up.

6.11.2 Must have non-slip safety feet.

6.11.3 All extension ladders must be equipped with an extension rope spliced to the moveable section and a manufacturer installed pull-rope pulley on the base section. The pull rope shall be tied back to a rung on the base section to prevent accidental extension that can cause collapse.

6.11.4 Sections of extension ladders will NOT be taken apart and used separately.

6.11.5 Ladders and ladder sections will NEVER be tied or fastened together to provide additional length, nor will short ladders be spliced together to make a longer ladder.

6.11.6 Use only step through ladders with gates when accessing an elevated platform, roof, or other surface.

6.11.7 Place on a stable, level footing; do not lean against or secure to a movable object

6.11.8 Set up at the proper angle. The base should be set back approximately one fourth (1/4) the distance of the working height of the ladder. The angle shall be adjusted to provide proper toe space and ensure the top rung is level with or slightly above the landing level.

6.12 Training

6.12.1 All employees and subcontractors shall be trained in the proper selection, inspection, and use of portable ladders and stairways, including as applicable:

6.12.1.1 Nature of fall hazards in the work area; Correct procedures for erecting, maintaining and disassembling the fall protection systems to be used;

6.12.1.2 Proper construction, use, placement and care in handling of all stairways and ladders; and maximum intended load-carrying capacities of ladders used.
6.12.1.3 Only properly trained employees shall build and erect job-made ladders, built in strict accordance with Attachment 7.1 of this policy.

6.12.2 Employers must retrain each employee as necessary to maintain their understanding and knowledge on the safe use and construction of ladders and stairs.

7.0 Attachments:

7.1 Job Made Ladders
Job-made ladders for construction

This data sheet covers the fabrication and installation of ladders usually made on the job and installed in a semi-permanent location as means of employee travel between elevations.

1. Job-made ladders are normally not as portable as wood or metal ladders, and are not intended as replacements for portable ladders.

2. As permanent stairways and ladders are installed and ready for use at the job site, the job-made ladders should be removed.

3. The minimum lumber sizes and maximum ladder lengths and widths recommended in this data sheet will meet American National Standards Institute strength requirements for all species of lumber (see Appendix A).

Common hazards for job-made ladders

4. The falling hazard of climbing and descending any ladder is serious, even under the best circumstances, but with job-made ladders this hazard can be compounded by improper fabrication, faulty installation or use after a ladder or its base or top fastenings have been excessively worn or damaged.

5. Before mounting a ladder, personnel should check the soles of their shoes and clean any grease, oil, mud or other substances that could make climbing hazardous.

6. Personnel should always face the job-made ladder when ascending or descending, and use both hands on the ladder cleat or side rail.

7. Personnel should not climb job-made ladders while carrying materials in their hands. Use a handline for raising and lowering tools and materials, or approved alternative means.

8. Job-made ladders should never be used for any purpose (guys, braces, hoists and/or rigging supports, etc.) for which they are not designed.

Ladder fabrication

9. Intended use determines double or single size:

10. Job-made ladders should be tailored to the intended use. Estimate the approximate amount of expected usage to determine if it will be a single-cleat ladder or a double-cleat ladder. For example, if the ladder will provide the only means of access to or egress from a main working area for 25 or more workers, or if simultaneous two-way traffic is expected, install a double-cleat ladder.

Proper ladder length

11. Determine the height the ladder is to reach and then add approximately 36-42 inches to allow the side rails to extend adequately above the top landing to provide a hand-hold for mounting and dismounting.

12. The maximum length of single-cleat ladders should not exceed 24 feet between supports (base and top landing). If ladders are to connect different landings, or if the length required exceeds this recommended maximum length, use two or more separate ladders, staggered, with a protected platform between each ladder. The maximum length of double-cleat ladders should not exceed 24 feet.

Ladder width

13. The width of single-cleat ladders shall be at least 16 inches, but not more than 20 inches, between rails at the top. The width between rails of double-cleat ladders shall not be less than 18 inches or more than 22 inches. Cleats shall be con-
tinuous members between the outside parallel rails (see Figures 1 and 2).

14. The width shall be uniform in the total length of the climb.

**Lumber selection**

15. ANSI A14.4, Safety Requirements for Job-Made Ladders, permits many species of lumber for cleat ladder fabrication. See Appendix A for various species of wood for use in job-made ladders.

16. All wood parts shall be seasoned to a moisture content of not more than 19 percent, reasonably straight-grained (no steeper than a 1-in-12 slope), dressed on all sides, and free from sharp edges and splinters.

17. Side rails must be free of knots. Cleats may contain knots providing the knots are sound, in the wide face, 0.75 inches or less in diameter, and not more frequent than two per cleat span or closer than 6 inches on center. Knots are not permitted in the narrow faces of the lumber used for job-made ladders.

*Note: Glossaries of wood defects are given in Appendices B and C.*

**Side rails**

18. It is preferable that side rails be continuous. Structural finger-jointed lumber is permissible when full-length rail members cannot be procured. If splicing is necessary to attain the required length, however, the splice must develop the full strength of a continuous side rail of the same length.

19. The load-carrying capacity of side rails is a function of working length and pitch. The minimum rail sizes for various combinations of length and pitch for single- and double-cleat ladders shall comply with Tables I and II. Handrails should be prohibited on job-made ladders.

---

Figure 1. Scale drawing of a single-cleat ladder. It shows how the cleats are attached. All lumber sizes shown are nominal.
Cleats

20. Nominal 1-inch by 4-inch board material is not normally subject to stress grade rules and shall be used after close site inspection ensures compliance with the materials requirements described in paragraphs 18 and 19. Nominal 2-inch by 4-inch stress-grade dimension lumber listed in Appendix A will be acceptable without site inspection prior to use.

21. Cleats should be evenly spaced throughout the length of the ladder between supports except on masons’ ladders, on which the cleats should run the full length (height) of the ladder. Spacing, from top to top of cleats, should be 11.5-12.5 inches. Each cleat should be continuous members and extend the full width of the ladder on double-cleat ladders.

22. Cleats should be attached to the narrow face of rails, using three 10-penny nails for 1-inch by 4-inch lumber, and three 12-penny nails for 2-inch by 4-inch lumber. The nails shall be staggered to reduce splitting. Filler strips (blocks) of the same thickness as the cleats shall be cut snug and inserted between cleats and nailed to the side rails.

23. Do not permit dapping (or cutting into) the rails to house cleats.

Ladder installation

24. Set rails on level, even and solid footing; and use foot blocks or mud sills if necessary. Place job-made ladders at locations where there will be no danger of being struck by passing vehicles, equipment or falling objects. When ladders must be placed in passageways or other such thoroughfares, they should be protected by substantial barricades around their bases.

25. The permissible pitch shall range from vertical to 1 in 4 depending upon site conditions and ladder rail sizes (see Tables 1
and II). In other words, the horizontal distance from the base of the ladder to the supporting surface shall not be greater than one-fourth the ladder working length. Ladders with spliced side rails shall be used at a pitch farther than 1 in 8.

26. Tops of ladders should extend approximately 36-42 inches above the top landing so workers getting on or off will have a solid handhold.

27. Horizontal handrails, mid-rails and toeboards are necessary on either side of the job-made ladder side-rail extensions when the ladder is used for access to an elevated work area.

28. Secure ladders to prevent displacement. At the top, nail the ladder or lash it with wire or rope to a secure object. At the bottom, secure it against movement by blocking, tying or another suitable method.

29. Solidly decked landings should be provided at the top of all ladders.

30. If protective coatings are considered desirable, only transparent coatings or wood

### Table I: Minimum rail size for single-cleat ladders (nominal-dimension lumber)

<table>
<thead>
<tr>
<th>Working Length (feet)</th>
<th>Vertical</th>
<th>Pitch (H/L) (See Note 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1/10</td>
</tr>
<tr>
<td>12</td>
<td>2x4</td>
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<tr>
<td>20</td>
<td>2x4</td>
<td>2x6</td>
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<tr>
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<td>2x6</td>
</tr>
<tr>
<td>24</td>
<td>2x6</td>
<td>2x6</td>
</tr>
</tbody>
</table>

### Table II: Minimum rail size for double-cleat ladders (nominal-dimension lumber)

<table>
<thead>
<tr>
<th>Working Length (feet)</th>
<th>Vertical</th>
<th>Pitch (H/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1/10</td>
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<td>2x6</td>
</tr>
<tr>
<td>24</td>
<td>2x6</td>
<td>2x6</td>
</tr>
</tbody>
</table>

Notes:

1) Pitch is defined as H, the horizontal distance from the base of ladder to supporting surface, divided by working length L, length of rail from base to point of bearing at the top.

2) Stresses exceed capacity of 2x6 rails for this combination of height and pitch.
preservative should be used. Ladders shall not be painted with opaque coating.

**Inspection and maintenance**

**31.** All job-made ladders, landings and lashings should be inspected daily or before each use, and any defects that have developed (or damage that has occurred) should be corrected immediately.

**Acknowledgement**

This data sheet was revised by the Construction Division of the National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143.

**Sources of information**

American National Standards Institute, 1819 L St., N.W., 6th Floor, Washington, DC 20036. *Safety Requirements for Job-Made Ladders*, A14.4-1979. Some material in this data sheet is reproduced (with permission) from this standard, copyright 1979 by the American National Standards Institute. Copies of the standard may be purchased from the American National Standards Institute.

**Appendix A: Acceptable stress-grade lumber for job-made ladders (note 1)**

<table>
<thead>
<tr>
<th>Species group</th>
<th>Minimum grade (Note 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast sitka spruce</td>
<td>Select structural [Note 3(f)]</td>
</tr>
<tr>
<td>Douglas fir-larch</td>
<td>No. 2 [Note 3(c), (d), (f)]</td>
</tr>
<tr>
<td>Douglas fir-south</td>
<td>No. 2 [Note 3(d)]</td>
</tr>
<tr>
<td>Eastern hemlock-tamarack</td>
<td>No. 1 [Note 3(a), (b), (f)]</td>
</tr>
<tr>
<td>Eastern spruce</td>
<td>Select structural [Note 3(a), (b)]</td>
</tr>
<tr>
<td>Hem-fir</td>
<td>No. 1 [Note 3(c), (d), (f)]</td>
</tr>
<tr>
<td>Lodgepole pine</td>
<td>Select structural [Note 3(d)]</td>
</tr>
<tr>
<td>Mountain hemlock</td>
<td>No. 1 [Note 3(c), (d)]</td>
</tr>
<tr>
<td>Northern pine</td>
<td>No. 1 [Note 3(a), (b)]</td>
</tr>
<tr>
<td>Ponderosa pine-sugar pine</td>
<td>Select structural [Note 3(d), (f)]</td>
</tr>
<tr>
<td>Red pine</td>
<td>Select structural [Note 3(f)]</td>
</tr>
<tr>
<td>Sitka spruce</td>
<td>Select structural [Note 3(c)]</td>
</tr>
<tr>
<td>Southern pine</td>
<td>No. 2 [Note 3(e)]</td>
</tr>
<tr>
<td>Spruce-pine-fir</td>
<td>Select structural [Note 3(f)]</td>
</tr>
<tr>
<td>Western hemlock</td>
<td>No. 1 [Note 3(c), (d)]</td>
</tr>
</tbody>
</table>

Notes:

1. Used at 19 percent maximum moisture content.
2. Minimum fiber stress in bending $f_b = 1200$ lbf/in$^2$ [pound-force per square inch 9psi]]
3. All lumber shall be identified with a grademark of an ALSC-approved inspection agency under the rules set forth by the following rules-writing agencies:
   a. Northeastern Lumber Manufacturers Association
   b. Northern Hardwood and Pine Manufacturers Association
   c. West Coast Inspection Bureau
   d. Western Wood Products Association
   e. Southern Pine Inspection Bureau
   f. National Lumber Grades Authority - Canada
Appendix B: Permissible defects in wood used for ladders

Cleats - The slope of the grain for this lumber should be not less than 1 in 15. Knots are not permissible in the narrow faces of the ladder cleats and knots in the wide faces should not be bigger than 0.25 inch in diameter.

Side rails - This lumber should be as straight as possible, with a slope of the grain not steeper than 1 in 12. Knots are not permissible in the narrow faces of the lumber. Tight and sound knots of 0.5 inches or less in diameter are permissible in the wide faces if not more frequent than one in three feet and at least 0.5 inch back from a narrow face. Pitch and bark pockets not more than 0.125 inch wide, two-inches-long, and 0.5 inch deep are permitted in side rails, if they are not more frequent than one in every three feet. Black streaks in western hemlock are not considered an irregularity, except that chambers present in the streaks are limited by the specifications for pitch and bark pockets.

Appendix C: Glossary of wood detects

Knots - A knot is a segment of a branch or limb that was embedded in the tree and has been cut through in the process of manufacturing. An encased knot and an intergrown knot are shown in Figure 6.

Checks - A lengthwise separation of the wood that most often occurs across the annual growth rings.

Compression failure - A deformation (buckling) of the fibers due to excessive compression along the grain. This may appear as a wrinkle across the surface. In some cases compression failure may be present but not visible as wrinkles; in such cases it is often indicated by fiber breakage on end-grain surfaces.

Compression wood - An abnormal growth, primarily found in soft wood, characterized by relatively wide annual rings, usually eccentric, and comparatively large portion of summer wood (usually 50 percent or more) that most often merges into the spring wood without exhibiting a marked contrast in color.

Figure 6. Examples of an encased knot (left) and an intergrown knot (right).

(Photo Courtesy of Forest Products Laboratory, U.S. Forest Service)
Decay - The disintegration of wood due to the action of fungi. (This is also known as dote or tor.)

Pitch and bark pockets - A pitch pocket is an opening extending parallel to the annual growth rings that contains or has contained pitch in a solid or liquid form. A bark pocket is an opening between annual growth rings that contains bark. Bark pockets appear as dark streaks on radial surfaces and as rounded areas on tangential surface.

Shakes - Separation along the grain, most commonly occurring between annual growth rings.

Wane - Bark or the lack of wood on the corner of a piece of lumber. The cause is not important.

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1.0 Purpose

1.1 This program establishes minimum safety requirements to eliminate or minimize employee exposure to lead and other biological hazards.

2.0 Scope

2.1 This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a) (2) is covered by this standard. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:

2.1.1 Demolition or salvage of structures where lead or materials containing lead are present;

2.1.2 Removal or encapsulation of materials containing lead;

2.1.3 New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;

2.1.4 Installation of products containing lead;

2.1.5 Lead contamination/emergency cleanup;

2.1.6 Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed, and

2.1.7 Maintenance operations associated with the construction activities described in this paragraph.

3.0 Definitions

3.1 Substance Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

3.2 Action level means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30ug/m3) calculated as an 8-hour time-weighted average (TWA).
3.3 Permissible exposure limit (PEL). The employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50ug/m3) averaged over an 8-hour period. If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

3.3.1 Maximum permissible limit (in ug/m3)=400 divided by hours worked in the day

3.4 Time-weighted average (TWA) The average exposure to a contaminant or condition (such as noise) to which workers may be exposed without adverse effect over a period such as in an 8-hour day or 40-hour week.

3.5 Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

3.6 Competent person means one who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

3.7 Director means the Director, National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

3.8 Lead means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

3.9 Blood Lead Level (PbB) Test is a medical testing to determine the level of lead in the blood reported in micrograms per 100 grams of whole blood (ug/100g)

3.10 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) a 1980 Act for the purpose of remedying the release of hazardous substances, and for addressing the cleanup of sites in which hazardous waste is found. It is also known as Superfund. The CERCLA requirements are found in 40 CFR Subchapter J, Parts 300 through 373.

3.11 Employee Exposure is exposure to airborne dust that would occur if the employee were not using respiratory protective equipment.

3.12 Exposure Monitoring (Personnel) is an instrument monitoring of employee exposure to hazards in the work place. The requirements for such monitoring in lead environment in general industry are found in 29 CFR 1910.1025. Personal pumps are attached to representative employees t determine their exposure over full shifts.

3.13 Hazardous Substance (per CERCLA) is any substances that are designated by the Clean Water Act, address as hazardous waste under the Solid Waste Disposal Act, addressed as hazardous air pollutant in the Clean Air Act, or addressed by the Toxic Substances Control Act as eminently hazardous chemical substances or mixtures.

3.14 HUD Guidelines are guidelines developed by the Department of Housing and Urban Development (HUD) for the identification and abatement of lead-based paint in housing. The guidelines establish a level for the abatement of lead at 1.0 mg/cm2 when analyzed by field x-ray fluorescence analyzers, or 0.5% Lead by weight (5,000 ppm) when using laboratory methods of analysis.
3.15 **Lead-Containing Paint** is for consumer use, it is defined as paint or other similar surface coating material containing lead or lead compounds, and in which the content (calculated as lead metal) is in excess of 0.06% by weight of the total non-volatile content of the paint of the weight of the dried paint film. The 0.06% level is equivalent to 600ppm. A similar definition had been developed for industrial use, although the level of lead in traditional industrial paints can be as high had 30% or more.

4.0 **Reference Documents**

4.1 OSHA Standard, Subpart Z, Toxic and Hazardous Substance 1910.1025, Lead

4.2 OSHA Standard, Subpart D, Occupational Health & Environmental Controls 1926.62, Lead

4.3 OSHA Standard, Subpart D, Occupational Health & Environmental Controls 1926.59 Hazard Communications

4.4 OSHA Standard, Subpart C General Safety and Health Provisions 1926.21, Safety Training and Education

4.5 OSHA Standard, Subpart C, General Safety and Health Provisions 1926.33, Access to employee exposer and medical records

4.6 OSHA Standard, Subpart E, Personal Protective and Life Saving Equipment 1926.103, Respiratory Protection

4.7 OSHA Publication 3142-09R 2003, Lead in Construction

4.8 USEPA. 40 CFR Part 745 – Lead-Based Paint Poisoning Prevention

4.9 USEPA. Hazard Standards for Lead in Paint, Dust & Soil (TSCA section 405(b))

5.0 **Responsibilities**

5.1 **Lead Awareness Program Manager** (designated location safety coordinator) shall be responsible for the following tasks:

5.1.1 Assure the implementation of the Lead Awareness Program;

5.1.2 Assuring that all HC Team Member activities related to the Lead Awareness Program are properly coordinated to include the participation of all those who must be involved.

5.1.3 Developing and maintaining job specification guidelines for work conducted where there is the presence of Lead that is encapsulated and free from defects so that it is not disturbed.

5.1.4 Assure that all lead related training records are maintained in accordance with the applicable portions of the OSHA Regulations on Hazard Communication (HAZCOM), Lead in General Industry, Respiratory Protection, and Lead in Construction.
5.1.5 Ensure that any team members tasked to address the presence of lead are qualified and certified in accordance with applicable federal, state and local standards;

5.1.6 Assure that all planned construction and maintenance activities in areas known to have Lead are conducted in a manner so as to avoid disturbing the material, employee exposure, occupant exposure, and contamination of the building.

5.1.7 Assure that a record is kept of all applicable incidents and situations/accidents involving lead utilizing the “Lead Incident Report Form” in this section.

5.2 **Location Managers** shall be responsible for the following tasks:

5.2.1 Assure that all HC Team Members adhere to the details of the Lead Awareness Program.

5.2.2 Assure that adequate staff and funding is available for the implementation and maintenance of the Lead Awareness Program.

5.3 **Sales Persons** shall be responsible for the following tasks:

5.3.1 Proactively gathering information about the potential presence of Lead in customer facilities while in the process of preparing bids and job specifications. This includes obtaining customer site Lead records including any certified lead sampling and identification information. A draft request for information letter is located in this program.

5.3.2 Working with the appropriate area location Lead Program Manager to assure that job bids take into account the potential presence of Lead.

5.4 **Supervisors and Departmental Managers** shall be responsible for the following tasks:

5.4.1 Assure that all HC Team Member activities related to the Lead Awareness Program are properly coordinated to include the participation of all those who must be involved.

5.4.2 Obtain and/or present Lead-specific training and technical assistance to HC Team Members. This is in addition to the presentation of general Lead-related information as part of any HC Team Member Hazard Communication training.

5.4.3 Gather and maintain Lead-related training records in accordance with the applicable portions of the OSHA Regulations on Hazard Communication (HAZCOM) and Lead.

5.4.4 Assure that all planned construction and maintenance activities in areas known to contain lead are conducted in a manner so as to avoid disturbing the material, occupant exposure, and contamination of the building.

5.4.5 Assure that a record is kept of all applicable incidents and situations/accidents involving lead utilizing the “Lead Incident Report Form” in this program. Assure that all required signatures are obtained
Assure that there is a process in place to assure that all damage to Lead-containing materials is reported and addressed immediately. Protocol will be that work in the area is discontinued until such time the damage has been addressed. In an approved manner, if Lead is completely encapsulated, removed or sealed there may not be a danger of exposure. However, Team Members must be trained to recognize such hazards.

Assure that any Team Member that is suspected to have been exposed to Lead and/or excursion limits is notified as soon as HC is notified of possible exposure. Notifications are to be sent via registered mail.

Make arrangements for Team Member medical monitoring in a timely manner. All records are to be maintained for 30 years plus the length of Team Member’s employment with HC.

Team Members shall be responsible for the following tasks:

- Understanding and following the details of the HC Lead Awareness Program.
- Attending and successfully completing all required Lead-Related Awareness Training.
- Assuring the proper conduct of all job activities while maintaining personal safety and the safety of others.
- Inform the Job Supervisor immediately if Lead is suspected, disturbed or damaged. Stop work and await the arrival of a qualified/licensed Lead inspector or project monitor to assess the severity of the situation and what needs to be done to allow work to continue in the area.
- Stabilize the area only if properly trained to do so and the proper equipment is available.
- Assure that the details of all work activities involving areas where there is the potential for contact with Lead are discussed, understood, and documentation exists as to how the work will be safely conducted.
- Review proposed renovation, maintenance, or equipment repair work with the Lead Awareness Program Manager if there is the suspicion of the presence of Lead that has not been identified.

Implementation

General Policy

No HC Team Members are to work in a situation where they may disturb (i.e. drill, saw, sand, or otherwise manipulate) Lead or be exposed to airborne concentrations of Lead in excess of the OSHA Permissible Exposure Limit (PEL) and or excursion limit.
6.1.2 Before contract project work begins HC must obtain from the building owner a certification as to the presence of lead in the proposed work area. Absent this information all surfaces will be treated as lead laced. (See attached “Request for Information” letter). This letter should be sent once it is determined that the building is pre-1980’s as bidding commences. This certification must be from a licensed Lead inspector or equivalent in the specific state or location.

6.1.3 As part of the initial inspection of the facility/building by HC, the management of existing lead will need to be considered before work begins. At a minimum, any of these materials found to be damaged and/or otherwise unstable will need some level of attention. This may include anything from repair-in-place to removal (see 6.1 above).

6.1.4 Before project work begins, the customer will be told that HC Team Members are not to disturb Lead. Where there is the potential for such contact, the material must be abated by a licensed Lead abatement contractor.

6.1.5 Team Members required to work on a job site where Lead has been identified; or it has been properly encapsulated and labeled; must be notified of its location prior to beginning work activities. Destruction or damage of encapsulating materials could potentially expose Team Members to Lead.

6.1.6 In the course of work activities, should HC Team Members encounter Lead that they may disturb, they should stop work at that potential Lead site and notify the job supervisor for further direction. Failure to do this may result in disciplinary action up to and including termination.

6.1.7 When notified of the presence of Lead, the site supervisor shall discuss this with the construction manager or customer representative and request a test of the material. The owner shall bear the cost of the test as well as any abatement that may be necessary to clear the Lead from the site so that work can commence. Under no circumstances will HC team members perform Lead abatement of any sort or scale unless precautions to remove the lead have been established. Failure to perform in this manner may result in disciplinary actions up to and including termination of the site supervisor.

6.1.8 This work will need to be done by an approved Lead removal/remediation contractor, licensed or otherwise approved in the State where the facility is located. These activities shall have documentation that is available for review by HC. HC will not abate, repair, isolate, encapsulate, dispose, or test for any Lead.

6.1.9 Any work activities directly involving Lead shall be the responsibility of the building owner. A person or firm, licensed or otherwise, approved in the State where the facility is located should perform it.

6.1.10 Any Team Member who was or may have been inadvertently exposed to Lead above the OSHA limit will be notified in writing. A sample letter is located in this program. A copy of the letter must be added to their team member’s file and kept for 30 years plus length of employment. Arrangements for a complete physical must be made for the Team
Member in a timely fashion. The physician must be a physician familiar with the symptoms and physiology of Lead exposure.

6.1.11 Lead within a facility shall be periodically monitored for changes in condition. This periodic inspection shall be performed at least quarterly during a project or as conditions necessitate.

6.1.12 Should damage occur, repair or removal work shall be carried out by an approved Lead removal/remediation contractor, licensed or otherwise approved in the State where the facility is located, as necessary to stabilize the material. These activities shall have documentation that is available for review.

6.1.13 The program supervisor or salesperson shall be responsible for obtaining monitoring results. A designated representative of HC should review the results.

6.2 Training Requirements

6.2.1 All Team Members with the potential for exposure to lead will be trained as to the contents of this program including descriptions of lead and possible locations, effects of lead, and what to do if lead is suspected in the work environment.

6.2.2 All new HC Team Members shall receive information relating to the potential locations and hazards of Lead during basic HAZCOM Training. It will inform Team Members of the potential presence of Lead as well as some precautions that must be observed during their work activities.

6.2.3 Training will be conducted on a Team Members first day and annually thereafter if necessary.

6.2.4 Training shall be documented.

6.2.5 Training records will be maintained in the branch office and available to program auditors from the Corporate Safety Department upon request.

6.2.6 HC Team Members who are in a position where they could disturb Lead should receive Lead Awareness Training. **UNDER NO CIRCUMSTANCE IS ANY HC TEAM MEMBER TO WORK IN AN ENVIRONMENT WHERE THERE IS AIRBORNE LEAD EXPOSURE IN EXCESS OF THE PEL AND/OR THE EXCURSION LIMIT OR WHERE THEY WILL IMPACT LEAD EXPOSURE.**

6.2.7 The training is **NOT** intended to teach removal or repair procedures or practices. Completion of this training does **NOT** enable Team Members to handle or directly work on lead laced material.

6.2.8 Lead Awareness Training shall be conducted for all required team members on an as needed basis.

6.2.9 The required elements of an lead awareness program include, at a minimum, the following topics:

6.2.9.1 Health effects of Lead
6.2.9.2 Potential locations where Lead can be found in a building.
6.2.9.3 Recognition of Lead damage and deterioration
6.2.9.4 OSHA requirements relating to housekeeping
6.2.9.5 Proper response to lead release episodes
6.2.9.6 Hygiene facilities and practices
6.2.9.7 Signs
6.2.9.8 Respiratory Protection Program
6.2.9.9 Record Keeping
6.2.9.10 Job-specific compliance programs
6.2.9.11 Medical surveillance and provision for medical removal

6.2.10 Should the situation change where the decision is made for HC Team Members to be involved in activities where they may be exposed to concentrations of Lead at or above the TWA and/or excursion limit, a more extensive Personal Protection, Work Practice Control Training and Certification Program will be required of all Team Members before performing the necessary tasks. **ONLY DONE WITH APPROVAL OF THE DIRECTOR OF SAFETY.** The general details are as follows:

6.2.10.1 The health effects associated with Lead exposure;
6.2.10.2 The relationship between smoking and exposure to Lead producing lung cancer;
6.2.10.3 The specific nature of operations which could result in exposure to Lead;
6.2.10.4 Engineering controls and work practices that may be associated with particular job assignments;
6.2.10.5 The specific procedures implemented to protect Team Members from exposure to Lead, such as appropriate work practices, emergency and clean-up procedures, and any personal protective equipment to be used;
6.2.10.6 Purpose, proper use, and limitations of respirators and protective clothing, if appropriate;
6.2.10.7 The content of OSHA 1926.62, including appendices;
6.2.10.8 The purpose and a description of the medical surveillance program required by Appendix (C) of 29 CFR 1926.62;
6.2.10.9 Building owner requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

6.3 Lead Survey

6.3.1 The following requirements apply to building owners. As contractors in these buildings, HC Team Members should use this information to guide their efforts as this information applies to the conduct of their work. Of specific importance is the information listed below. The first is a list identifying “Suspect Lead-Containing Materials; the second is list identifying Common Locations of Suspect Lead Containing Materials.

6.4 Signs and Labels

6.4.1 Must be posted by the building owner, owner representative, and/or abatement contractor.

6.4.2 Signs posted and visible at the entrance to rooms and into which Team Members may reasonably be expected to enter and which contain Lead. They are to be identifying the material present, its location, and
appropriate work practices to be followed to ensure that the Lead is not disturbed.

6.4.3 Labels may be used as an alternative to signs to ensure that the proper work practices are observed and that Lead is not disturbed. Visibly affixed to identify the presence of Lead such as on pipes, paint, tools, clothing and pieces of equipment.

6.4.4 The wording for labels is:

DANGER
CONTAINS LEAD MATERIAL
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED TEAM MEMBER ONLY

6.5 Labels must also contain a warning statement against breathing Lead dust.

7.0 Attachments:

7.1 Lead Incident Report Form
7.2 Request for Lead Disclosure Information- Sample Letter
7.3 Sample List Symptoms & Suspected Lead-Containing Activities
7.4 Safety Data Sheet Information - Lead
Haselden Construction
Lead Incident Report Form
(To be filled out by the Team Member and Supervisor.)
Report incidents immediately to:
Director of Health & Safety: 720-341-7943

Job/Incident Location: ______________________ Date Reported: ______________________

Date and Time of Occurrence: ______________________ a.m. ______________________ p.m.

Incident Description: ______________________

Type of Presumed or Lead Containing Material involved:
- Demolition, removal of painted material?
- Sprayed-on or rolled on ceilings or walls
- Sprayed-on or rolled structural members
- Other (Describe) ______________________

Has building owner and Sub-Contractors been informed of incident? Yes  No

Date and Time of Notification: ______________________

Name of Person Notified: ______________________

Acts/conditions contributing to this incident:

Actions taken on site in response to this incident:

What is being/What should be done to prevent this type of incident from happening again (This site/other HC sites):

Note: Although lead is hazardous, the risk of lead-related disease depends upon the concentration and length of exposure to airborne lead material.

Required Signatures:

Supervisor ______________________ Date ______________________

Team Member ______________________ Date ______________________

Site Superintendent ______________________ Date ______________________
January 11, 2018

Mr. John Smith
ABC Construction
123 Main Street
City, State 12345

RE: Request for Lead Disclosure Information

Dear Mr. Smith:

Haselden Construction (HC) currently is proposing to bid (type of work) at your 123 Main Street facility. We understand that the original build date of the facility is pre-1980.

The OSHA Standard, Subpart Z, Toxic and Hazardous Substance 1910.1025, Lead and the USEPA Hazard Standards for Lead in Paint, Dust & Soil (TSCA section 405(b)) contains the following:

Duties of building and facility owners:

Before work is begun, building and facility owners shall determine the presence, location, and quantity of lead containing material and/or potentially lead containing material at the work site.

Building and/or facility owners shall notify the following persons of the presence, location and quantity of lead, at the work sites in their buildings and facilities. Notification either shall be in writing, or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representatives:

1. Prospective employers applying or bidding for work whose Team Members reasonably can be expected to work in or adjacent to areas containing such material;

2. On multi-employer work sites, all employers of Team Members who will be performing work within or adjacent to areas containing such materials;

We require this information in order to provide for the health and safety of HC Team Members, maintain regulatory compliance, and to accurately bid this project.

Please forward to me, as soon as possible, all leads-related documentation. This documentation must signed by a licensed lead inspector (or equivalent). A licensed Lead project monitor (or equivalent) must sign this documentation. We intend to forward the documentation you submit to us to our environmental consultants for their review. If there is lead in the area we must be made aware of its presence or we must have a certification signed by a representative of your company that such material is not present. Unless documentation is provided to the contrary,
the discovery of lead on other projects has resulted in project delays and additional costs being incurred.

It is HC’s policy that our Team Members are not permitted to work in areas where there is:

- Airborne exposure to lead.
- The potential to disturb lead that may be present but intact without a precaution to assure that it is not disturbed.

HC does not abate, remove, alter, repair, encapsulate or dispose of lead. If lead identification surveys and/or abatement work is necessary before we start our work in your facility, we will cooperate with you on any related scheduling issues that may arise.

Thank you for your cooperation. Please contact me if there are any questions or if we need to discuss any aspect of this request.

Regards,

John H.
Project Manager
SAMPLE SYMPTOMS OF CHRONIC OVEREXPOSURE

- Loss of appetite;
- Constipation;
- Nausea;
- Excessive tiredness;
- Headache;
- Fine tremors;
- Colic with severe abdominal pain;
- Metallic taste in the mouth;
- Weakness;
- Nervous irritability;
- Hyperactivity; Muscle and joint pain or soreness;
- Anxiety;
- Pallor;
- Insomnia;
- Numbness; and
- Dizziness.

SAMPLE LIST OF SUSPECT LEAD-CONTAINING ACTIVITIES

The following list does not include every product/material that may contain lead. It is intended as a general guide to show which types of materials, situations that may contain lead.

- Abrasive blasting and
- Welding, cutting, and burning on steel structures.

Other operations with the potential to expose workers to lead include:
- Lead burning;
- Using lead-containing mortar;
- Power tool cleaning without dust collection systems;
- Rivet busting;
- Cleanup activities where dry expendable abrasives are used;
- Movement and removal of abrasive blasting enclosures;
- Manual dry scraping and sanding;
- Manual demolition of structures;
- Heat-gun applications;
- Power tool cleaning with dust collection systems; and
- Spray painting with lead-based paint.

*U.S. Department of Labor: OSHA Publication 3142-09R 2003, Lead in Construction*
SECTION 3 – HAZARDS IDENTIFICATION

Potential Health Effects

Inhalation: Lead dust and fume can be absorbed through the respiratory system. Local irritation of bronchia and lungs can occur. In cases of acute exposure, symptoms such as metallic taste, chest and abdominal pain, and increased blood lead levels may follow.

Ingestion: POISON. The symptoms of lead poisoning include abdominal pain and spasms, nausea, vomiting and headache. Acute poisoning can lead to muscle weakness, metallic taste, loss of appetite, insomnia, dizziness, high levels of lead in blood and urine, coma and death in extreme cases.

Skin Contact: Lead may be absorbed through the skin after prolonged exposure. Contact over short periods may cause local irritation.

Eye Contact: May cause eye irritation.

Signs & Symptoms of Overexposure

Acute (short term) exposure: Lead is a potent, systemic poison; taken in large enough doses, lead can kill in a matter of days. Acute encephalopathy may arise which develops quickly to seizures, coma and death from cardiorespiratory arrest.

Chronic (long term) exposure: Chronic overexposure to lead may result in severe damage to blood forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle & joint pain, fine tremors, numbness, dizziness, hyperactivity, co

Emergency & First Aid Procedures

Inhalation: Remove from exposure. Get medical attention if individual experiences any of the acute effects listed above.

Skin: Wash thoroughly with soap and water.

Eyes: Flush with cool running water for at least 15 minutes. Get medical attention if irritation develops.

Ingestion: Get medical attention.

Emergency and First Aid Procedures

Ingestion: Rinse mouth, give plenty of water, get medical attention.

Inhalation: Remove from exposure to fresh air, get medical attention.

Eyes: Rinse thoroughly with water, get medical attention.

Skin: Remove contaminated clothing and wash effected area with water and soap
Potential to Cause Cancer

Lead has been proven to cause cancer in animals. Certain lead compounds are suspect human carcinogens. lic.

Protective Measures to Be Taken If Material Is Released Or Spilled: Mechanically collect material and place in drums. Use of a vacuum system with a high-efficiency filter is preferable. Process collected material through in plant reclamation system or send to a lead smelter for reclamation following applicable federal, state and local regulations.

Use protective clothing, gloves and respiratory protection when cleaning up spills.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Measures

Engineering Controls: Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust or fume, use ventilation to control airborne contaminants.

Work Practices: Avoid generating dust. Do not throw scrap to avoid generation of dust. Store scrap in appropriate containers and keep covered. Do not dry sweep or use compressed air to remove accumulations of lead dust.

Vacuuming, using a high-efficiency filtration system is the preferred method for clean-up. Personal Protection

If the OSHA exposure limit for lead is exceeded and engineering controls are not feasible, a half-face high efficiency respirator may be worn for up to ten times the exposure limit. Other recommended personal protective equipment (PPE) includes protective clothing, including boots and gloves to prevent prolonged skin contact, and safety glasses or goggles.

Other control Measures

Eating, drinking, smoking, and the application of cosmetics should not be permitted in areas where lead products are handled, processed, or stored.

SECTION VIII – SPECIAL PROTECTION INFORMATION:

Respiratory: Use respirators as per the regulations respecting Lead.

Eye Protection: Face shield/approved safety glasses.

Hands: Protective gloves should be worn when handling Lead.

Other Protective Equipment: Clean overalls, safety boots, and helmets.

Local Exhaust: Adequate local and general ventilation must be provided.
SECTION IX – SPECIAL PRECAUTIONS:

Handling and Storage: Lead dust should be handled in sealed containers. Every effort should be made to prevent dusts from becoming airborne.

Other Precautions: Use wet methods for dust control whenever possible. Ensure that there is sufficient ventilation in areas of lead use.
1.0 Purpose

1.1 To provide direction for management leadership and employee involvement.

2.0 Scope

2.1 A managerial and employee commitment to project, personnel and public safety and health protection.

3.0 Definitions

4.0 Reference Documents

4.1 OSHA’s VPP Self-Assessment Checklist

4.2 National Safety Council (NSC) Safety Management System

5.0 Responsibilities

5.1 Director of Safety to provide policy statement signed by top management and distributed to the projects.

5.2 Senior Management to be personally involved visiting projects and talking about safety with the workers and the project staff.

5.3 Project Management establishes project safety goals, trends and implements strategies to achieve such goals and eliminate non-compliance trends.

5.3.1 Monthly job wide meeting including subcontractors to review safety performance, safety suggestions and near miss reports for their present status.

5.3.2 Participate in weekly and monthly safety inspections.

5.4 Employees must each be involved in their own safety.

5.4.1 Participate in and if nominated, lead weekly tool box talk safety meetings

5.4.2 Attend all Job wide monthly safety meetings.
5.4.3 Participate if nominated, in project safety committee.

5.4.4 Participate in project safety inspections.

6.0 Implementation

6.1 Top site management’s personal involvement thru project visits and inspections.

6.2 A system in place to address safety and health concerns during preconstruction.

6.3 Safety and health management integrated with daily project management.
   6.3.1 Preparation of Personal Job Hazard Assessment
   6.3.2 Weekly toolbox talks pertinent to the work activities
   6.3.3 Safety suggestions
   6.3.4 Near miss reporting

6.4 A written Site Specific Safety and Health with policy and procedures specific to each project.
   6.4.1 Injury and Illness Prevention Program
   6.4.2 Site specific safety plan

6.5 A safety and health policy understood by employees.
   6.5.1 Safety and health policy signed by senior management
   6.5.2 Reviewed during corporate orientation

6.6 Safety and health management goals and results-oriented objectives for meeting those goals.

6.7 Necessary resources to meet responsibilities, including access to certified safety and health professionals, physicians and other licensed health care professionals, and other experts, as needed.

6.8 Selection and oversight of subcontractors to ensure effective safety and health protection for all workers at the site.
   6.8.1 Reviewing their site specific safety manual
   6.8.2 Reviewing their site specific Safety Data Sheet (SDS) for products that will be used on this project.
   6.8.3 Using the HC Safety Submittal Procedure that is part of the Haselden Safety Policy.
6.9 Annual safety and health management system evaluations on Injury and Illness Prevention Program (IIPP) elements in a narrative format, recommendations for improvements, and documented follow-up.

7.0 Attachments:

7.1 Safety Policy Statement
Haselden Construction
Safety Policy Statement

The safety of Haselden Construction employees is an important concern of Haselden Construction. We pledge not to compromise the safety of our employees or subcontractors to achieve any operational or business objectives. Our aim is to prevent all Incidents and occupational injuries.

Each employee has the responsibility to recognize and avoid unsafe situations and acts. We expect Site Superintendents, Project Managers and Supervisors to ensure safe and healthful working conditions, to instruct employees in safe practices, and to inform workers of any work place hazards.

All employees are expected to work in a manner which safeguards themselves, their coworkers, our customers, and the public, and to participate in the improvement of work conditions and work practices in order to reduce hazards at all Haselden Construction job sites.

Byron J. Haselden
CEO & President
Haselden Construction
1.0 Purpose

1.1 This procedure describes procedures to ensure timely, professional, and consistent responses to state or federal OSHA inquiries, compliance inspections and investigations.

2.0 Scope

2.1 This procedure is designed for all Haselden projects and all types of OSHA inquiries, inspections, and investigations.

3.0 Definitions

3.1 OSHA – Occupational Safety and Health Administration, a US government agency in the Department of Labor whose mission is to maintain a safe and healthy work environment

4.0 Reference Documents

5.0 Responsibilities

5.1 Site Superintendent

5.1.1 Manages the inspection process and immediately notifies the proper personnel as listed in the implementation section of this program.

5.2 Director of Safety and Health or Designee

5.2.1 Offers assistance and expert advice before, during, and after an inspection.

5.2.2 Responds to written letter of inquiry, surveys, or citations issued by OSHA.

5.2.3 When logistically possible, attends the inspection on a Haselden project.

6.0 Implementation

6.1 OSHA Compliance Inspections

6.1.1 Notification of Company Personnel:
6.1.1.1 The following Haselden Construction Personnel must be notified immediately if a OSHA compliance officer arrives at the job site:

6.1.1.1.1 Director of Health and Safety
6.1.1.1.2 Operations Manager
6.1.1.1.3 VP of Business Development
6.1.1.1.4 Site Superintendent and Subcontractors on-site at the time of the inspection.

6.1.2 When to Require Compliance Officers to Obtain Inspection Warrants:

6.1.2.1 We generally have the right to refuse entry and require OSHA enforcement personnel to obtain an inspection warrant before allowing them access to our work locations and facilities. However, it is very rare that we would exercise this right.

6.1.2.2 Refusing entry and requiring OSHA to get an inspection warrant shall ONLY be done after consultation with the Director of Health and Safety.

6.1.3 Opening Conference:

6.1.3.1 The Site Superintendent or, if absent, his designee should escort the OSHA representative(s) to a private office or meeting room and ask for the OSHA representative’s identification. If there is any question about this identification, call the State or Area OSHA office to verify it. (Individuals have tried to obtain entry to industrial sites in the past by using false OSHA credentials.).

6.1.3.2 The Site Superintendent should document the name, address and office phone number of each OSHA representative on the “7.1 OSHA Inspection Report” form and attach their business cards or a photocopy of other identification.

6.1.3.3 The Site Superintendent should determine the reason for the inspection (accident investigation, employee complaint, inspection follow-up, programmed inspection, etc.).

6.1.3.4 If the inspection is the result of an employee complaint, request a copy of the complaint. OSHA representatives generally are not obligated to reveal the complainant’s name, but can often provide a copy of a formal complaint that describes the alleged violation and the specific work activity involved, without revealing the complainant’s name or identity.

6.1.3.5 If the request for a copy of the complaint is refused, document this and ask for a description of the alleged violation and the specific work activity involved. Write this description on the “OSHA Inspection Report.”

6.1.3.6 The Site Superintendent should request that the OSHA representative(s) hold an opening conference. The appropriate subcontractor supervisor and Haselden Construction’s Director of Health and Safety should be notified immediately and should be requested to attend the opening conference if the inspection relates to a contractor or subcontractor.
6.1.3.7 Document the details of the opening conference on the “7.1 OSHA Inspection Report.”

6.1.4 Requests for Access to Records:

6.1.4.1 If requested by OSHA, the Site Superintendent should provide access to Safety Data Sheets (SDS), written safety programs and procedures, occupational injury and illness records, employee training and safety meeting records, and other records related to compliance with state or Federal OSHA standards.

6.1.4.2 OSHA personnel are not allowed to remove original documents from the work site. These must be maintained as part of Haselden Constructions records.

6.1.4.3 Site Superintendents should consult the Director of Health and Safety before giving OSHA personnel copies of any documents or records that are to be removed from the work site.

6.1.4.4 The “7.1 OSHA Inspection Report” form should include a list of the files and records examined, and those copied by OSHA representatives.

6.1.4.5 OSHA representative(s) must be notified in writing of any information that is considered to be a Haselden Construction or customer trade secret. The “7.2 OSHA Trade Secret Notification” form found in this program may be used for this notification.

6.1.5 OSHA Walk-Around Inspections:

6.1.5.1 All OSHA inspections must be documented on the “7.1 OSHA Inspection Report.” Copies of the “OSHA Inspection Report” must be sent to the Director of Health and Safety within 24 hours of each inspection.

6.1.5.2 OSHA personnel should be treated politely and professionally. Employees should respond truthfully to questions asked by OSHA personnel, stating facts and avoiding speculation.

6.1.6 OSHA Representatives Must be Accompanied by Haselden Construction’s Supervision or Management:

6.1.6.1 Only the Haselden Construction Site Superintendent or Director of Health and Safety should accompany OSHA representatives on their site inspections. A Haselden employee may be asked to assist with recording and photographing the inspection. Whoever accompanies OSHA on the site inspection must make detailed notes of all discussions and inspection tours and include them on the “OSHA Inspection Report” in this policy. Any and all Haselden Construction employees who participate in OSHA activity such as inspections shall receive full pay while in performance of such duties.

6.1.6.2 Employees have the right to speak to OSHA representatives in private if they wish to do so. The Site Superintendent should provide a suitable location for such a meeting, if requested. An
employee also has the right to refuse to speak to OSHA representatives in private.

6.1.6.3 Site Superintendents should explain any site security procedures and safety rules to OSHA representatives before any walk-around inspection tours.

6.1.6.4 Site Superintendents should verify that the OSHA representatives have current training and medical clearance to enter restricted areas such as confined spaces, high noise areas, hazardous waste cleanup sites, and asbestos or lead abatement sites.

**NOTE:** OSHA representatives must have the same type of training and medical clearances as those required for employees. OSHA representatives must provide proof of the required training and medical clearances before entering such work areas.

6.1.6.5 Haselden Construction may provide personal protective equipment for OSHA representatives (if the OSHA representatives have appropriate proof of current training and medical clearance). This does not include providing respirators or respirator cartridges and filters.

6.1.6.6 OSHA representatives must provide their own respirators and cartridges or filters, if respiratory protection is required to enter particular work areas during the walk-around inspection.

6.1.7 Photographs:

6.1.7.1 If an OSHA representative takes photographs or videos, the Haselden representative should take photographs from the same location and record videos at the same time.

6.1.8 Air Monitoring and Sampling:

6.1.8.1 If the OSHA representative plans to perform ambient air monitoring or personal employee exposure monitoring, notify the Director of Health and Safety immediately, to allow Haselden Construction to arrange for duplicate monitoring.

6.1.8.2 Site Superintendents should ask the OSHA representative which sampling and analytical methods are used to perform air monitoring and record the information on the “OSHA Inspection Report” form. They should also record the brand name and type of equipment used to conduct any air monitoring or sampling. Site Superintendents should also ask the OSHA representative for documentation of air monitoring equipment calibration. They may request an explanation of the degree of training that the OSHA representative has had with regard to the sampling and analytical methods used.

6.1.8.3 Full names should be recorded on the OSHA Inspection Report for any employees who are asked to wear personal sampling pumps for exposure monitoring, and any employees who are
present in each work area during air monitoring. Site Superintendents should request copies of any air monitoring results and air sampling analyses.

6.1.8.4 At the end of the Inspection, Site Superintendents should request a CLOSING CONFERENCE and attend it.

6.2 OSHA Telephone Inquiries

6.2.1 Anyone receiving a telephone call or fax from OSHA shall complete the “7.3 Report of OSHA Phone Contact” form in this policy.

6.2.2 This form should include the caller’s name, job title, phone number and the agency office they work for, as well as the reason for the call.

6.2.3 Job site phone calls or faxes from OSHA representatives are to be directed to the Site Superintendent, and the Director of Health and Safety. If these individuals are unavailable, such calls should be transferred to the Operations Manager.

6.2.4 If none of these individuals are available, the caller should be told that a management or supervisory representative will return their call as soon as possible. Continue to call the Director of Health and Safety, VP Operations or President until contact is made.

6.3 Letters, Citations and Written Orders

6.3.1 Any written communications received from OSHA must be immediately sent to the Director of Health and Safety. This includes written information requests, citations, abatement orders, and special orders to correct a hazard, notices of employee complaints, and any other written communications from OSHA.

6.3.2 The Director of Health and Safety will consult with Haselden Constructions Legal Counsel and upper management before responding to such written communications. The Director of Health and Safety will complete the “7.4 Report of OSHA Letter Contact” found in this policy.

6.3.3 Required Postings:

6.3.3.1 Copies of any OSHA citations, employee complaints or written orders must be posted in the workplace in a location readily accessible to all of the affected employees and subcontractors.

6.3.3.2 In general, these materials must be posted for 3 working days or until the alleged violation is corrected, whichever is longer. This requirement applies even if Haselden Construction contests or appeals a citation, complaint or written order.

6.3.4 Appeals:
6.3.4.1 Haselden Construction generally has 15 working days after receiving a citation, fine or written order to file a notice of contest or an appeal. Haselden Constructions Legal Counsel and the Director of Health and Safety must review and approve any notice of contest or appeal of OSHA citations and written orders.

6.3.5 Abatement and Corrective Actions:

6.3.5.1 When Haselden Construction does not contest a citation or written order, the Site Superintendent will promptly correct the violations listed in each citation or written order.

6.3.5.2 If required by OSHA, the Director of Health and Safety will promptly notify OSHA in writing that appropriate corrective action has been completed within the time specified in the citation or order. This written notification will explain the specific actions taken with regard to each violation and state the date each corrective action was taken. The notice must be sent to the OSHA office that issued the citation or written order.

6.3.5.3 At the same time, Haselden Construction will also pay any fines associated with citations and written orders. These fines will be charged back to the job site.

6.4 Bureau of Labor Statistics Annual Survey Forms

6.4.1 The Federal Bureau of Labor Statistics (BLS) collects data on occupational injuries and illnesses. State agencies may also collect such data in states that have been delegated OSHA enforcement authority.

6.4.2 BLS has the authority to require an employer to complete an annual survey form using information from the employer’s annual OSHA 300 log. These survey forms are sent to select employers at the start of each calendar year.

6.4.3 Any BLS annual survey forms received by Haselden Construction employees or job sites shall be immediately sent to the Director of Health and Safety to ensure they are completed accurately and are submitted within the required deadline.

7.0 Attachments:

7.1 HC OSHA Inspection Report

7.2 HC OSHA Trade Secret Notification

7.3 HC Report of OSHA Phone Contact

7.4 HC Report of OSHA Letter Contact
Haselden Construction
OSHA INSPECTION REPORT
CONFIDENTIAL AND PRIVILEGED

<table>
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**OSHA PERSONNEL PRESENT**

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IDENTIFICATION CHECKED?        IDENTIFICATION CHECKED?        

**REASON FOR INSPECTION AS STATED BY OSHA REPRESENTATIVE** (check appropriate line)

- Employee complaint
- OSHA response to a reported incident
- Random or routine inspection
- Follow-up inspection
- Special emphasis inspection
- Sub-contractor complaint
- Other (Explain on back of this sheet)

IF THIS INSPECTION IS THE RESULT OF AN EMPLOYEE OR SUB-CONTRACTOR COMPLAINT, REQUEST A COPY OF THE COMPLAINT AND ATTACH IT TO THIS REPORT.

**ARE THEIR OTHER EMPLOYERS WORKING AT THIS JOB SITE?**

- YES
- NO
IS THIS A SUB-CONTRACTOR INSPECTION?
IF YES, GIVE NAME, ADDRESS AND PHONE NUMBER OF SUB-CONTRACTOR.

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OPENING CONFERENCE (Attach additional pages, if necessary.)

OSHA ATTENDEES: __________________________________________

________________________________________________________________________

HASELDEN CONSTRUCTION
REPRESENTATIVES: __________________________________________

________________________________________________________________________

SUB-CONTRACTOR REPRESENTATIVES: ______________________________

________________________________________________________________________

EMPLOYEE REPRESENTATIVES: ______________________________________

________________________________________________________________________

CUSTOMER REPRESENTATIVES: ______________________________________

________________________________________________________________________

ON THE BACK OF THIS PAGE, DESCRIBE THE DISCUSSIONS THAT TOOK PLACE DURING THE OPENING CONFERENCE. ATTACH ADDITIONAL PAGES, IF NECESSARY.

DOCUMENTS REQUESTED BY OSHA (CHECK ALL THAT APPLY):

- [ ] OSHA 300 log
- [ ] Medical Records
- [ ] Incident Reports
- [ ] Exposure Records
- [ ] Injury & Illness Prevention Plan
- [ ] OSHA Posters
- [ ] MSDS
- [ ] Training Certificates
- [ ] Other: ______________________________

DETAILS OF WALK-AROUND INSPECTION (Attach additional pages, if necessary.)

NAMES AND TITLES OF PERSONS WHO PARTICIPATED IN WALKAROUND INSPECTION:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
# Describe the Walkaround Inspection Route

- [ ]
- [ ]
- [ ]

# Describe Comments Made During Walkaround Inspection

- [ ]
- [ ]
- [ ]

# Identify the Name and Title of Any Employees Interviewed by the OSHA Representative, If Known

- [ ]
- [ ]
- [ ]

# Describe the Discussions Between Each Employee and the OSHA Representative, If You Were Present During Those Discussions

- [ ]
- [ ]
- [ ]

# Describe Any Samples or Measurements Taken by the OSHA Representative During the Inspection. Include the Types of Equipment Used, Sampling Used, Sampling Methods, Locations, Date and Time

- [ ]
- [ ]
- [ ]

# Describe Any Photos/Videos Taken by the OSHA Representative

- [ ]
- [ ]
- [ ]

# Did the Site Superintendent Duplicate These Photos?

- [ ]

## Details of Closing Conference (Attach additional pages, if necessary)

Describe discussion that took place at the closing conference. Use the back of this sheet or additional pages, as necessary. Give names and titles of all participants, list any documents or photos given to the compliance officer.

- [ ]
- [ ]
- [ ]
DID THE OSHA REPRESENTATIVE INDICATE THAT HE/SHE WOULD RECOMMEND CITATIONS FOR OSHA VIOLATIONS? IF YES, DESCRIBE THE ALLEGED VIOLATIONS.

Send completed copies of this Report to Haselden Construction Director of Health and Safety.
The following materials, processes or devices are trade secrets as defined in the Occupational Safety and Health Act, Section 15. Confidentiality of Trade Secrets; 29 CFR, Chapter XVII, Part 1903.9, Trade Secrets; OR California Labor Code Section 6322.

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Please take the necessary precautions to assure the confidentiality of all drawings, photographs or descriptions of the above.

Date Signature of Employer Representative

I acknowledge receipt of this Trade Secret Notification.

Date OSHA Representative's Signature

OSHA Representative's Printed Name & Title

This report and its attachments must be forwarded to the Haselden Construction’s Director of Health and Safety.
# REPORT OF OSHA PHONE CONTACT

Haselden Construction

## PREPARED AT THE REQUEST OF LEGAL COUNCIL IN ANTICIPATION OF LITIGATION

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<th>PROJECT NAME:</th>
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<td>Name and Title of Caller:</td>
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## SUMMARIZE THE DISCUSSION THAT OCCURRED DURING THIS PHONE CALL.

(Attach additional pages, if necessary.)

ACTION REQUIRED: 

BY WHOM? 

This report and any attachments must be forwarded to Director of Health and Safety.
Haselden Construction
REPORT OF OSHA LETTER CONTACT

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ATTACH A COPY OF THE LETTER FROM STATE OR FEDERAL OSHA.

DATE LETTER WAS RECEIVED? ____________________________

ACTION REQUIRED: __________________________________________

__________________________________________________________

BY WHOM? ________________________________________________

This report and its attachments must be forwarded to the Director of Health and Safety.
Haselden Construction Safety Program

Subject: Permit Required Confined Space Entry Program

Approved By: Safety Department

Date: 1/15/2018

1.0 Purpose

1.1. This procedure describes minimum requirements for safe entry into permit required confined spaces on Haselden Construction job sites.

2.0 Scope

2.1. This procedure applies to all Haselden Construction operations involving entry into permit required confined spaces, whether on Haselden Construction properties or at job site locations. This document additionally covers subcontracted employees and contractors and shall apply on construction sites when a subcontractor’s program doesn’t exist or is less stringent.

2.2. Trenching and excavation operations that reach four feet or greater in depth and are performed in areas where a hazardous atmosphere exists or may develop fall under the scope of Subpart P of the Standard. Diving operations are covered by Subpart V of the Standard, and Underground Construction, Caissons, Cofferdams and Compressed Air is regulated by Subpart S of the Standard. All other permit required confined space for construction work is covered by Subpart AA and this Haselden Construction program.

2.3. Due to the variable nature of conditions on work sites, this program cannot specifically identify all possible work situations where confined spaces may be present. For additional assistance with site-specific safety and health procedures and confined space entry requirements, employees must contact the Haselden Safety Department.

2.4. During preconstruction, pre-job planning, and detailed daily scheduling, priority shall be placed upon eliminating confined spaces whenever possible. The approach must focus on eliminating one of the three required characteristics of a confined space defined in 3.7 below. If a space does not have limited egress, it cannot be a confined space and will therefore not be a permit required confined space. OSHA has stated that they will always consider a ladder, folding attic stairs and doors with curbs or hatchways as restricted egress, and may consider temporary stair towers as restricted egress as well.

2.5. If a project does have confined spaces, the next priority is to prevent development of a permit required confined space. If all of the characteristics of a permit required confined space listed in 3.34 below are avoided, the confined space will be classified as non-permit required. Work may then proceed by controlling the hazards in accordance with other OSHA regulations.
2.6. Haselden Construction must collaborate with owners, architects, engineers and trade partners to focus on eliminating confined spaces that could require a permit for entry during the design stage of the project. Project staff must be alert to the hazards and potential hazards in existing confined spaces, as well as hazards that are known or could develop as construction progresses. Careful planning of construction sequencing may reduce or eliminate the need for work to be performed in a permit required confined space.

2.7. Work performed in non-permit required confined spaces is not covered by this policy. If work is to be performed in a non-permit required confined space, a hazard assessment must be performed, a JHA must be developed, and hazards shall be controlled by appropriate methods under OSHA regulations and requirements. The employer shall note that if conditions change and hazards develop that make the non-permit space permitted, the competent person for that employer shall immediately cease work in that space, and provisions for permit space entry shall be followed.

3.0 Definitions

3.1. **Acceptable Entry Conditions**: The conditions that must exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within the space.

3.2. **Attendant**: An individual stationed outside only one permit space who assesses the status of authorized entrants and who must perform the duties specified in 29 CFR 1926.1209.

3.3. **Authorized Entrant**: An employee who is authorized by the entry supervisor to enter a permit space.

3.4. **Barrier**: A physical obstruction that blocks or limits access.

3.5. **Blanking or Blinding**: The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

3.6. **Competent Person**: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.7. **Confined Space**:

3.7.1. A space that is large enough and so configured that an employee can bodily enter and perform assigned work;

3.7.2. Has limited or restricted means for entry or exit (for example, tanks, vessels, coolers, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and

3.7.3. Is not designed for continuous occupancy.
(Examples of locations where confined spaces may occur include, but are not limited to, the following: Bins; boilers; pits (such as elevator, escalator, pump, valve or other equipment); manholes (such as sewer, storm drain, electrical, communication, or other utility); tanks (such as fuel, chemical, water, or other liquid, solid or gas); incinerators; scrubbers; concrete pier columns; sewers; transformer vaults; heating, ventilation, and air-conditioning (HVAC) ducts; storm drains; water mains; precast concrete and other pre-formed manhole units; drilled shafts; enclosed beams; vessels; digesters; lift stations; cesspools; silos; air receivers; sludge gates; air preheaters; step up transformers; turbines; chillers; bag houses; and/or mixers/reactors.) OSHA will also consider basements, crawl spaces and attics as examples where confined spaces may occur.

3.8. **Control:** The action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

3.9. **Contractor:** The employer that has overall responsibility for construction at the worksite. (If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.)

3.10. **Double Block and Bleed:** The closure of a line, duct, or pipe by closing and locking two inline valves and by opening and locking a drain or vent valve in the line between the two closed valves.

3.11. **Early-Warning System:** The method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include: Alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

3.12. **Emergency:** Any occurrence (including any failure of power, hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.

3.13. **Engulfment:** The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, crushing, or suffocation.

3.14. **Entry:** The action by which any part of a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space, whether or not such action is intentional or any work activities are actually performed in the space.

3.15. **Entry Employer:** Any employer who decides that an employee it directs will enter a permit space. (An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space, and OSHA will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.)
3.16. **Entry Permit (permit):** The written or printed document that is provided by the employer who designated the space a permit space to allow and control entry into a permit space and that contains the information specified in 29 CFR 1926.1206.

3.17. **Entry Rescue:** When a rescue service enters a permit space to rescue one or more employees.

3.18. **Entry supervisor:** The qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this program. (An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.)

3.19. **Hazard:** A physical hazard or hazardous atmosphere. See definitions below.

3.19.1. Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

3.19.1.1. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);

3.19.1.2. Airborne combustible dust at a concentration that meets or exceeds its LFL; (This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.)

3.19.1.3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

3.19.1.4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in subpart D of 29 CFR 1926 (Occupational Health and Environmental Control), or in subpart Z of 29 CFR 1926 (Toxic and Hazardous Substances), and which could result in employee exposure in excess of its dose or permissible exposure limit; (An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.)

3.19.1.5. Any other atmospheric condition that is immediately dangerous to life or health. (For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, 29 CFR 1926.59, published information, and
internal documents can provide guidance in establishing acceptable atmospheric conditions.)

3.20. **Host Employer:** The employer that owns or manages the property where the construction work is taking place. (If the owner of the property on which the construction activity occurs has contracted with an entity for the general management of that property, and has transferred to that entity the information specified in 29 CFR 1926.1203(h)(1), OSHA will treat the contracted management entity as the host employer for as long as that entity manages the property. Otherwise, OSHA will treat the owner of the property as the host employer. In no case will there be more than one host employer.)

3.21. **Hot Work:** Operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating). Refer to Haselden Welding Program for specific requirements while performing hot work within confined spaces. Performing hot work in a confined space makes the space classified as a Permit Required Confined Space.

3.22. **Immediately Dangerous to Life or Health (IDLH):** Any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects. (Some materials-hydrogen fluoride gas and cadmium vapor, for example-may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.)

3.23. **Inerting:** Displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. (This procedure produces an IDLH oxygen deficient atmosphere.)

3.24. **Isolate or Isolation:** The process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: Blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.

3.25. **Limited or Restricted:** For entry or exit means a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

3.26. **Line Breaking:** The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

3.27. **Lockout:** The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
3.28. **Lower Flammable Limit or Lower Explosive Limit**: The minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

3.29. **Monitor or Monitoring**: The process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

3.30. **Non-Entry Rescue**: When a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

3.31. **Non-Permit Confined Space**: A confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this program.

3.32. **Oxygen Deficient Atmosphere**: An atmosphere containing less than 19.5 percent oxygen by volume.

3.33. **Oxygen Enriched Atmosphere**: An atmosphere containing more than 23.5 percent oxygen by volume.

3.34. **Permit-Required Confined Space (Permit Space)**: A confined space that has one or more of the following characteristics:

   3.34.1. Contains or has a potential to contain a hazardous atmosphere;

   3.34.2. Contains a material that has the potential for engulfing an entrant;

   3.34.3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

   3.34.4. Contains any other recognized serious safety or health hazard.

3.35. **Permit-Required Confined Space Program (Permit Space Program)**: The employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

3.36. **Physical Hazard**: An existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: Explosives, mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

3.37. **Prohibited Condition**: Any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee through a
written respiratory protection program, training and medical evaluation in accordance with 29 CFR 1910.134.

3.38. **Qualified Person**: A person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

3.39. **Representative Permit Space**: A mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

3.40. **Rescue**: Retrieving, and providing medical assistance to, one or more employees who are in a permit space.

3.41. **Rescue Service**: The personnel designated to rescue employees from permit spaces.

3.42. **Retrieval System**: The equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

3.43. **Serious Physical Damage**: An impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

3.44. **Tagout**:

3.44.1. Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed.

3.44.2. **Tagout is not permitted unless** the employer ensures that:

3.44.2.1. Tagout provides equivalent protection to lockout; or

3.44.2.2. That lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

3.45. **Test or Testing**: The process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space. (Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.)
3.46. **Ventilate or Ventilation:** Controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of 29 CFR 1926.57 (Ventilation).

### 4.0 Reference Documents

4.1. 29 CFR 1926 Subpart AA Confined Spaces in Construction

4.2. 29 CFR 1910.134 Respiratory Protection


4.4. Haselden Respiratory Protection Program

4.5. Haselden Welding Program

### 5.0 Responsibilities

5.1. **Controlling Contractor**

5.1.1. The controlling contractor is the primary point of contact for information about permit spaces at the worksite. The controlling contractor is responsible for ensuring employers outside a space know not to create hazards in the space and that entry employers working in a space at the same time do not create hazards for another's workers.

5.2. **Host Employer**

5.2.1. The host employer must provide information about permit spaces at the worksite to the controlling contractor, who must then pass this information on to any employers whose employees will be entering the spaces (entry employers).

5.3. **Entry Employer**

5.3.1. Entry employers must give the controlling contractor information about their entry program and any hazards they may encounter in the space. The controlling contractor will then pass the information on to the host and other entry employers.

5.3.2. A site evaluation and identification of confined spaces must be conducted before work begins. A Competent Person must evaluate the worksite and identify confined spaces, including permit spaces. The entry employer shall designate the competent person for confined space in writing, and shall keep employee training records on the jobsite the entire time an employee is working in a Permit Required Confined Space.

5.3.4 The entry employer shall maintain entry permit records on site for one year after each permit is cancelled.
5.4 Supervisors

5.4.1 Shall ensure that all employees have been trained and fully understand the requirements of this program.

5.4.2 Shall provide the necessary equipment to comply with these requirements and ensure that all employees are trained on its use.

5.4.3 Shall ensure that all confined space assessments have been conducted and documented.

5.4.4 Shall ensure that provisions and procedures are in place for the protection of employees from external hazards including but not limited to pedestrians, vehicles and other barriers and by use of the pre-entry checklist verifying that conditions in the permit space are acceptable for entry during its duration.

5.4.5 Shall ensure that all Permit-Required Confined Spaces permits are posted.

5.4.6 Shall ensure an annual review of the program including all entry permits issued that during that annual period.

5.4.7 Shall ensure that confined spaces are identified properly as either a Non-Permit Confined Space or a Permit-Required Confined Space.

5.4.8 Shall ensure signs have been posted at all Permit-Required Confined Space areas that state, “DANGER – PERMIT ENTRY CONFINED SPACE-DO NOT ENTER” in English and Spanish along with the proper warning word such as “ASPHYXIANT, FLAMMABILITY or TOXIC HAZARD”

5.4.9 Permits shall be kept on file for one year and maintained on site for twelve months after the permit is canceled, or until the project is closed out.

5.5 Affected Employee

5.5.1 Shall comply with all aspects of this program.

5.5.2 Authorized Entrants, Attendants and Entry Supervisors may be any employee who has the training, knowledge and skills necessary for safe performance of the duties assigned under this Program, for whom certified training records are available on the jobsite, and who is authorized by management to work in a Permit Required Confined Space.

5.6 Authorized Entry Supervisor Duties
5.6.1 Conduct a tailgate safety meeting, with all workers involved in the permit required confined space entry to review the job to be performed and the hazards that may be faced during entry, including information on the mode, signs or symptoms and consequences of the exposure.

5.6.2 Confirm that all isolation, Lock/out and Tag/outs have been completed prior to entry into a permit required confined space.

5.6.3 Ensure that the requirements of this program are followed and that acceptable entry conditions are met and maintained.

5.6.4 Verify that the appropriate entries have been made on the permit that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

5.6.5 Terminates the entry and cancels or suspends the permit as required by 29 CFR 1926.1205(e).

5.6.6 Notify Haselden supervisor of entry into a permit space, and notify the supervisor of any changes that may occur, during an entry.

5.6.7 Verifies that rescue services are available and that the means for summoning them are operable, and that the employer will be notified as soon as the services become unavailable.

5.6.8 Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations.

5.6.9 Determines, whenever responsibility for permit space entry operation is transferred, and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

5.7 Authorized Attendant Duties

5.7.1 Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

5.7.2 Is aware of possible behavioral effects of hazard exposure in authorized Entrants.

5.7.3 Continuously maintains communication and an accurate count of authorized Entrants in the permit space and accurately identifies who is in the permit space.
5.7.4 Remains outside the permit space during entry operations until relieved by another Attendant.

5.7.5 Attendants are NOT allowed to monitor more than one permit space.

NOTE: Attendants may enter a permit space to attempt a rescue, if they have been trained and equipped for rescue operations as required and only when they have been relieved by another authorized Attendant.

5.7.6 Monitors activities inside and outside the permit space to determine if it is safe for Entrants to remain in the space and orders the authorized Entrants to evacuate the permit space immediately under any of the following conditions:

5.7.6.1 If the Attendant detects a prohibited condition;

5.7.6.2 If the Attendant detects the behavioral effects of hazard exposure in an authorized Entrant;

5.7.6.3 If the Attendant detects a situation outside the space that could endanger the authorized Entrants;

5.7.6.4 If the Attendant cannot effectively and safely perform all the duties required.

5.7.7 Summons rescue and other emergency services as soon as the Attendant determines that authorized Entrants may need assistance to escape from permit space hazards.

5.7.8 Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

5.7.8.1 Warn the unauthorized persons that they must stay away from the permit space;

5.7.8.2 Advise the unauthorized persons to exit the permit space immediately, if they have entered the space;

5.7.8.3 Inform the authorized Entrants and the Entry Supervisor if unauthorized persons have entered the permit space.

5.7.9 Performs no duties that might interfere with the Attendant's primary duty to monitor and protect the authorized Entrants.

5.8 Authorized Entrant Duties

5.8.1 Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
5.8.2 Uses appropriate personal protective equipment properly, e.g., face and eye protection, and other forms of barrier protection such as gloves, aprons, coveralls, and breathing equipment;

5.8.3 Is aware of possible behavioral effects of hazard exposure in authorized Entrants;

5.8.4 Is entitled to request additional monitoring at any time.

5.8.5 Maintains communication with the Attendants to enable the Attendant to monitor the Entrants status as well as to alert the Entrant to evacuate if needed; and

5.8.6 Exits from confined spaces as soon as possible immediately when ordered by an Attendant or Entry Supervisor, when the Entrant recognizes the warning signs or symptoms of an exposure exists, or when a prohibited condition exists, or when an alarm is activated.

6.0 Implementation / Procedure

6.1 Each employer with employees who may work in confined spaces must use a Competent Person to identify all confined spaces and permit required confined spaces. A danger sign must be posted at each permit required confined space and the Controlling Contractor must be notified of the location of each permit required confined space. If employees are not authorized to work in a permit required confined space, effective measures must be taken to prevent them from entering. If employees are authorized to enter a permit required confined space, then this program must be implemented.

6.2 Permit-Required Confined Space Entry

6.2.1 If the space is properly isolated and results of air monitoring are unacceptable without local exhaust ventilation in operation, classify the entry as a Permit-Required Confined Space.

6.2.2 Complete the Confined Space Entry Permit and verify that entry conditions are acceptable and that no prohibited condition exists before proceeding with work in the Permit-Required Confined Space.

6.2.3 Entrants and/or their representative shall be given the opportunity to observe and participate in the air monitoring process.

6.2.4 Atmospheric monitoring must be continuous unless equipment for continuous monitoring is not commercially available. If continuous monitoring is not used, periodic monitoring is required.

6.2.5 Entrants shall review and sign the confined space permit.

6.2.6 At least one trained Attendant must always be outside the Permit-Required Confined Space.

6.2.7 The Attendant must monitor the authorized Entrants for the duration of the entry operation.
6.2.8 Only authorized Entrants may enter a Permit-Required Confined Space.

6.2.9 All Entrants must sign in and out on the entry permit when entering and leaving a Permit-Required Confined Space at any time for any reason.

6.2.10 Post signs and barricades outside all Permit-Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited.

6.2.11 Conditions must be continuously monitored where Entrants are working to determine that acceptable conditions are maintained during entry.

6.2.12 If a hazardous atmosphere is detected during an entry, personnel must immediately evacuate the space.

6.2.12.1 The Entry Supervisor shall suspend the entry permit.

6.2.12.2 Re-evaluate the space to determine how the hazardous atmosphere developed.

6.2.12.3 Take action to protect personnel before any subsequent activity to re-enter the space takes place.

6.2.12.4 Reinstall the Haselden Confined Space Entry Permit before allowing Entrants to re-enter the space.

6.2.12.5 Employees or their representatives are entitled to request additional monitoring at any time.

6.2.13 The permit must be suspended or terminated when the entry operations are complete or when permit conditions change (i.e., hazardous air monitoring results are noted, unsafe behaviors are observed, etc.).

6.2.14 The minimum rescue equipment required for Permit-Required Confined Space entry is covered in the Rescue & Emergency section of this program.

6.2.15 Permit-Required Confined Space entry operations will be reviewed when the controlling contractor believes that the requirements of this confined space program may not adequately protect personnel.

6.2.16 If deficiencies are found in the program, the program will be revised and personnel will be trained in the new revisions before subsequent entries are authorized.

6.3 Pre-Job Planning and Space Preparation

6.3.1 The Entry Supervisor must determine that the confined space is properly isolated by blinding, disconnecting, and by following local Lockout procedures.
6.3.2 The Entry Supervisor must discuss with all Entrants the hazards of the space, communication methods and emergency procedures during the confined space entry.

6.3.3 Eliminate any condition making it unsafe to open the permit space to atmosphere.

6.3.4 Ensure engulfment hazards are isolated or continuously monitored.

6.3.5 Promptly guard the opening to prevent an accidental fall through the opening and to protect each employee working in the space from foreign objects entering the space.

6.3.6 If applicable, wash, steam, ventilate or purge the confined space to properly free it of possible contaminants. Vent vapors to a safe location.

6.3.7 Do not allow unauthorized personnel to enter a confined space. Barricade or guard all confined spaces to prevent entry of unauthorized Entrants.

6.3.8 If performing hot work in the confined space, precautions must be taken consistent with the Haselden Hot Work Permit procedure.

6.3.9 Ensure that vehicle or other equipment exhaust does not enter the space.

6.4 Pre-Entry Safety Meeting

6.4.1 The Entry Supervisor must declare when the confined space is ready for entry.

6.4.2 The Entry Supervisor shall hold a pre-entry safety meeting to discuss all requirements and procedures with all authorized Entrant(s) and Attendant(s) involved with the entry. The supervisor will discuss other concerns such as previous contents, vessel coating, PPE required etc., during this meeting.

6.4.3 The Entry Supervisor must coordinate entry operations when employees of more than one company are working simultaneously in the confined space. This coordination is necessary so that one company’s work does not endanger the employees of another company.

6.5 Equipment

6.5.1 Check all work equipment to ensure that it has the proper safety features and is approved for the locations where it will be used. The Entry Supervisor shall ensure that all equipment is properly maintained in a safe condition and that Entrants use the equipment properly.
6.5.2 The following equipment must be considered and may be required when entering a confined space:

6.5.2.1 Atmospheric Testing and Monitoring Equipment.

6.5.2.2 Barriers, Shields, and Signs – Post signs and barricades outside all Permit-Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited. Any signs used must state “Danger – Permit Required Confined Space-Do Not Enter” along with the proper warning word such as “Asphyxiant, Flammability or Toxic Hazard”. All barricades must be capable of providing falling object protection and preventing a person from inadvertently walking into the space.

6.5.2.3 Communications Equipment – Only use intrinsically safe equipment in areas where a hazardous atmosphere may exist. Use a communication system that will keep the Attendant in constant, direct communication with the Entrant(s) working in the confined space. Also, use a communication system that allows the Attendant to summon help from rescue or emergency service.

6.5.2.4 Entry and Exit Equipment – (For example: ladders may be needed for safe entry and exit).

6.5.2.5 Lighting Equipment – Needed for safe entry, work within the space and exit. Lighting equipment used in the confined space must be safe for the location.

6.5.2.6 Portable electric lighting used in wet and/or other conductive locations (drums, tanks, vessels) must be operated at 12 volts or less. 120 volt lights may be used if protected by a ground-fault circuit interrupter.

6.5.2.7 Do not route cords for tools and equipment through openings used for access. If this is not possible, cords will be protected (wrap or pad) from potential damage.

6.5.2.8 Personal Protective Equipment – Ensure that personnel wear the required personal protective equipment. For respiratory protection requirements, refer to the Haselden Respiratory Protection Program.

6.5.2.9 Rescue and Emergency Equipment

6.5.2.10 The Attendants must also have an approved first aid kit located near the entry permit.

6.5.2.11 Vacuum Trucks – When used, trucks must be properly grounded or bonded to prevent static sparks.

6.5.2.12 Ventilating Equipment
6.5.2.13 Other – Any other equipment necessary for safe entry into and rescue from permit required confined spaces.

6.6 **Air Monitoring**

6.6.1 Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order.

6.6.2 Air shall be continuously tested while continuous ventilation is applied.

6.6.3 Any employee, who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.

6.7 **Ventilation**

6.7.1 Continuous forced air ventilation must be used and tested as follows:

6.7.1.1 An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;

6.7.1.2 The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be within the space and shall continue until all employees have left the space;

6.7.1.3 The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.

6.7.1.4 If a hazardous atmosphere is detected during entry each employee shall leave the space immediately and the space shall be evaluated to determine how the hazardous atmosphere developed; and measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

6.8 **Confined Space Rescue**

6.8.1 If entry is to be made into a permit required confined space requiring entry rescue, trained rescue team or service must be standing by while work is being performed. If at any time the rescue team becomes unavailable, the rescue service must immediately notify the entry employer and the permit must be suspended and employees removed from the permit required confined space until the rescue team becomes available.

6.8.2 In case of an emergency and/or injuries, the confined space site shall be secured and emergency response personnel shall be notified to respond per the host employer emergency plan.
6.8.3 If there is reliance on host employer or outside services for rescue the facility host or outside rescue team must be given an opportunity to examine the entry site, practice rescue and decline as appropriate. Reliance on host employer or outside rescue team for rescue services must be stated and agreed to in writing.

6.8.4 The Attendant shall order the other Entrants not to move the injured and must not allow untrained or unauthorized workers into the space to perform a confined space rescue.

6.8.5 The entry employer must inform each rescue service team of the hazards they may confront when performing a rescue. SDS for all chemicals within the permit space shall be kept with the permit, to be given to the rescue team upon their arrival.

6.8.6 When the Attendant becomes aware of the need for rescue, the Attendant shall immediately summon the rescue team by the agreed upon communication method without leaving the vicinity of the confined space.

6.8.7 After the rescue team has been notified, the Attendant shall alert the Entry Supervisor of the emergency.

6.8.8 If Haselden employees are to perform Permit-Required Confined Space rescues, they must:

   6.8.8.1 Be provided with and trained in the use of the proper rescue equipment and personal protective equipment necessary to make the rescue, at no cost.

   6.8.8.2 Be trained to perform the assigned duties and to recognize and control the associated hazards.

   6.8.8.3 Be required to practice making rescues at least once every 12 months;

   6.8.8.4 Be trained in basic first aid and CPR.

6.9 Multiple Employer Procedure

6.9.1 In order not to endanger the employees of any other employer, the Entry Supervisor shall:

   6.9.1.1 Verify that all entry contractor employees have been trained in confined space and that all contractor employees fully understand the Haselden procedures pertaining to Confined Space.

   6.9.1.2 Inform the entry contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of this program.
6.9.1.3 Notify the entry contractor of the elements, including the hazards identified and the employee’s experience with the space, that make the space in question a permit space.

6.9.1.4 Inform the entry contractor of any precautions or procedures that Haselden has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.

6.9.1.5 Coordinate entry operations with the entry contractor, when both Haselden personnel and contractor personnel will be working in or near confined spaces.

6.9.1.6 Debrief the entry contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in confined spaces during entry operations.

6.9.1.7 In addition to complying with the confined space requirements that apply to all employees; each entry contractor, who is retained to perform permit space entry operations, shall:

   6.9.1.7.1 Obtain any available information regarding confined space hazards and entry operations from the Haselden Entry Supervisor.

   6.9.1.7.2 Coordinate entry operations with the Haselden Entry Supervisor, when both Haselden personnel and entry contractor personnel will be working in or near permit spaces.

   6.9.1.7.3 Inform Haselden of the confined space program that the contractor will follow and of any hazards confronted or created in the confined space, either through a debriefing or during the entry operation.

6.10 Reviewing of Permits

6.10.1 In the event of any unauthorized entry, employee complaints, a hazard not covered by the permit, the occurrence of an injury or near miss the entry permit shall be cancelled and a review shall be conducted to provide employee protection and for revising the program prior to authorizing subsequent entries.

6.10.2 An annual review of this program, using the cancelled permits retained within 1 year after each entry shall be conducted by the Safety Manager to revise the program as necessary, to ensure that employees are protected. If no confined space entries were performed during a 12-month period, no review is necessary.

6.11 Cancellation/Closure of Permits

6.11.1 The Entry Supervisor shall cancel the confined space permit, at the end of the job operation, at the end of the shift or when the Entry
Supervisor or Attendant determine that conditions in or near the permit space have changed and is hazardous to the Entrants.

6.11.2 Provide the safety department the original copy of the Confined Space Permit.

6.12 Training

6.12.1 Training shall be provided so that all employees whose work is regulated by this program acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned to them.

6.12.2 Training shall be provided to each affected employee, before the employee is first assigned duties under this program, if a new hazard has been created or special deviations have occurred and before there is a change in assigned duties.

6.12.3 The employee shall be retrained:

6.12.3.1 Whenever there is a change in confined space operations that presents a hazard about which an employee has not previously been trained.

6.12.3.2 Whenever the supervisor has reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.

6.12.4 The training shall establish employee proficiency in the duties required by this program and shall introduce new or revised procedures, as necessary.

6.12.5 The supervisor shall certify that the training required by this program has been accomplished.

6.12.6 The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training.

6.12.7 The certification shall be available for inspection by employees, their authorized representatives, management, clients and the safety department.

7.0 Attachments

7.1 Permit Required Confined Space Program Checklist

7.2 Confined Space Entry Permit

7.3 Confined Space Checklist
## Permit Required Confined Space Program Checklist

<table>
<thead>
<tr>
<th>Section</th>
<th>Requirement</th>
<th>Included</th>
<th>Deficient</th>
<th>Corrected</th>
<th>Date Corrected</th>
<th>Date Accepted</th>
<th>Checked by</th>
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<tbody>
<tr>
<td>1926.1204(a)</td>
<td>Means of preventing unauthorized entry</td>
<td></td>
<td></td>
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<tr>
<td>1926.1204(b)</td>
<td>Means of identifying and evaluating hazards before employee entry</td>
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<tr>
<td>1926.1204(c)</td>
<td>Means, procedures and methods for safe entry operations</td>
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<tr>
<td>1926.1204(c)(1)</td>
<td>Specify acceptable entry conditions</td>
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<tr>
<td>1926.1204(c)(2)</td>
<td>Provided entrants or reps opportunity to observe monitoring or testing of PRCS</td>
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<td>1926.1204(c)(3)</td>
<td>Isolate the PRCS and physical hazards within it</td>
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<td>1926.1204(c)(4)</td>
<td>If ventilation system stops, will monitors detect increase in atmospheric hazards in time for safe exit of employees?</td>
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<tr>
<td>1926.1204(c)(5)</td>
<td>Provide pedestrian, vehicle or other barriers necessary to protect entrants from external hazards</td>
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<tr>
<td>1926.1204(c)(7)</td>
<td>Verify conditions in the permit space are maintained as acceptable throughout entry. Do not allow employees to enter into or remain in a permit space with a hazardous atmosphere unless the employer can demonstrate that PPE provided by the employer will provide effective protection.</td>
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<tr>
<td>1926.1204(c)(8)</td>
<td>Eliminate any conditions that would make it unsafe to remove the entrance cover (high pressure, heat, flammable gas)</td>
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<td>Required equipment - identify by name</td>
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<td>1926.1204(d)(3)</td>
<td>Communications</td>
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<td>PPE</td>
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<td>Minimum illumination requirements</td>
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<td>1926.1204(d)(6)</td>
<td>Barriers and shields for isolation</td>
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<td>1926.1204(d)(7)</td>
<td>Equipment needed for ingress and egress</td>
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<tr>
<td>1926.1204(d)(8)</td>
<td>Rescue and emergency equipment</td>
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<tr>
<td>1926.1204(d)(9)</td>
<td>Any other equipment necessary for safe entry, exit and rescue.</td>
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<tr>
<td>1926.1204(e)</td>
<td>Procedures used to evaluate space conditions</td>
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<tr>
<td>1926.1204(f)</td>
<td>Provide at least one attendant at each space</td>
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<tr>
<td>1926.1204(f)</td>
<td>Duties of each person and training to perform them</td>
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<tr>
<td>1926.1204(f)</td>
<td>Procedures for summoning rescue services</td>
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<tr>
<td>1926.1204(f)</td>
<td>Procedures for preventing unauthorized rescue</td>
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<tr>
<td>1926.1204(f)</td>
<td>Procedures to issue, cancel, terminate permits</td>
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<tr>
<td>1926.1204(f)</td>
<td>Procedures to coordinate entry operations</td>
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<td>1926.1204(f)</td>
<td>Procedures for concluding the entry</td>
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<tr>
<td>1926.1204(m)</td>
<td>Review and revise plans to correct deficiencies</td>
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<tr>
<td>1926.1204(n)</td>
<td>Annual review of program</td>
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Confined Space Entry Permit

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Date and Time Issued:</td>
<td>Date and Time Expires:</td>
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<tr>
<td>Jobsite:</td>
<td>Supervisor:</td>
</tr>
<tr>
<td>Description of Work to be Performed:</td>
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</tr>
<tr>
<td>Names of Qualified Entrants:</td>
<td></td>
</tr>
<tr>
<td>Names of Qualified Attendants:</td>
<td></td>
</tr>
<tr>
<td>Initial Air Test:</td>
<td></td>
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<tr>
<td>Tester's Signature:</td>
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</tr>
<tr>
<td>Ventilation in Use:</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Lockout/Tagout Needed?</td>
<td>Yes</td>
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<tr>
<td>Post Venting/LOTO Air Test:</td>
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<tr>
<td>Tester's Signature:</td>
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<tr>
<td>Gas monitor calibrated?</td>
<td>Yes</td>
</tr>
<tr>
<td>Harnesses and lifelines?</td>
<td>Yes</td>
</tr>
<tr>
<td>Hoisting equipment</td>
<td>Yes</td>
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<tr>
<td>Communication equip.?</td>
<td>Yes</td>
</tr>
<tr>
<td>Respirators?</td>
<td>Yes</td>
</tr>
<tr>
<td>Protective Clothing?</td>
<td>Yes</td>
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<tr>
<td>Explosion-proof Elect?</td>
<td>Yes</td>
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<tr>
<td>Communication procedures:</td>
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<tr>
<td>Rescue procedures:</td>
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<tr>
<td>Periodic Air Tests (to be performed at least every 2 hours):</td>
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<tr>
<td>OX:</td>
<td>CO:</td>
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<tr>
<td>OX:</td>
<td>CO:</td>
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<tr>
<td>OX:</td>
<td>CO:</td>
</tr>
<tr>
<td>OX:</td>
<td>CO:</td>
</tr>
</tbody>
</table>

Instructions and safety procedures have been given to all entrants and attendants and they have all been understood. Entry cannot be approved if any checklist answers have been marked "No". This permit is not valid unless all appropriate items are completed. **THIS PERMIT IS VALID FOR ONLY ONE WORK-SHIFT.**

This permit has been properly issued, reviewed and approved:

Entry Supervisor Signature

Haselden Superintendent
CONFINED SPACE CHECKLIST

Checklist Source: *Employer Guide and Model Permit-Required Confined Space Entry Plan*, (518) 457-2238. Note: the text between parts 1 and 2 has been modified to conform with the 29 CFR 1926 Subpart AA, Confined Spaces for Construction.

<table>
<thead>
<tr>
<th>Part 1</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>1</td>
<td>Is the space large enough so an employee can bodily enter and perform work?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Does the space have limited or restricted means for entry and exit?</td>
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</tr>
<tr>
<td>3</td>
<td>The space is not designed for continuous occupancy?</td>
<td></td>
</tr>
</tbody>
</table>

If the answers to items 1 and 2 and 3 is no, then you have identified that space is not a confined space and no further action is needed. Continue to Part II if a confined space has been identified to determine if it is a permit-required confined space.

<table>
<thead>
<tr>
<th>Part II</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Does the space contain or potentially contain a hazardous atmosphere?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Does the space contain any chemicals or chemical residues?</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Does the space contain any flammable/combustible substances?</td>
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</tr>
<tr>
<td>4</td>
<td>Does the space contain or potentially contain decomposing organic matter?</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Does the space have any pipes that bring chemicals into it?</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Does the space have any materials that can trap or potentially trap, engulf, or drown an entrant?</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Is vision obscured by dust at 5 feet or less?</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Question</td>
<td>Yes</td>
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<tr>
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<tr>
<td>8</td>
<td>Does the space contain any mechanical equipment servicing the space?</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Does the space have converging walls, sloped floors or tapered floor to small cross-sections which could trap or asphyxiate an entrant (Entrapment Hazard)?</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Does the tank or vessel contain rusted interior surfaces?</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Does the space contain thermal hazards (e.g. extreme hot or cold)?</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Does the space contain excessive noise levels that could interfere with communication with an attendant?</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Does the space present any slip, trip, or fall hazards?</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Are there any operations conducted near the space opening which could present a hazard to entrants?</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Are there any hazards from falling objects?</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Are cleaning solvents or paints going to be used in the space?</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Is welding, cutting, brazing, riveting, scraping, or sanding going to be performed in the space?</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Is electrical equipment located in or required to be used in the space?</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Are there any corrosives which could irritate the eyes in the space?</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Are there any conditions which could prevent any entrants’ self-rescue from the space?</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Are there any substances used in the space which have acute hazards?</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Is mechanical ventilation needed to maintain a safe environment?</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Is air monitoring necessary to ensure the space is safe for entry due to a potential hazardous atmosphere?</td>
<td></td>
</tr>
</tbody>
</table>
### CONFINED SPACE CHECKLIST

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Are residues going to be scraped off the interior surfaces of the vessel?</td>
</tr>
<tr>
<td>25</td>
<td>Will entry be made into a diked area where the dike is 5 feet or more in height?</td>
</tr>
<tr>
<td>26</td>
<td>Does the space restrict mobility to the extent that it could trap an entrant?</td>
</tr>
<tr>
<td>27</td>
<td>Is respiratory protection required because of a hazardous atmosphere?</td>
</tr>
<tr>
<td>28</td>
<td>Are non-sparking tools required to remove residues?</td>
</tr>
<tr>
<td>29</td>
<td>Does the space have poor natural ventilation that would allow an atmospheric hazard to develop?</td>
</tr>
<tr>
<td>30</td>
<td>Does the space present a hazard other than those noted above which would make it a permit space?</td>
</tr>
</tbody>
</table>

**Note to the Employer:** If any of the questions in Part II have been check yes, the confined space is a permit-required confined space. As such, entry to these spaces must be performed under the protection of a full permit-required confined space program. Note that in some situations, alternative procedures or reclassifying to a non-permit space may be possible in lieu of a full permit-required confined space.

*A permit space that contains only physical hazards may be reclassified as a non-permit space if (1) the physical hazards are eliminated or isolated without entering the space; or (2) the physical hazards are eliminated or isolated by entering the space using permit space procedures. Physical hazards include all hazards that are not atmospheric hazards, including: explosives (other than explosive atmospheres); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; inwardly converging surfaces; and chemicals that can cause death or serious physical harm through skin or eye contact (rather than through inhalation).

Whenever a permit space is reclassified as a non-permit space, the entry employer must document the basis for determining that all hazards in the permit space have been eliminated, through a certification that contains the date, the location of the space, and the signature of the person making the determination. The certification must be made available to each worker entering the space or to that worker’s authorized representative.

*Source – OSHA Publication 3825-09 2015, p. 21*
### Duties of Employers under the Confined Spaces Standard

<table>
<thead>
<tr>
<th>Category of Employer</th>
<th>Employer Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Employers •</strong></td>
<td>Identify all confined spaces in which their workers may work and determine whether any are permit spaces. If its workers are supposed to enter permit spaces, the employer is an “entry employer.”</td>
</tr>
<tr>
<td></td>
<td>• Employers who are not “entry employers” must make sure their workers stay out of any permit spaces present on the site, unless the workers are authorized for entry.</td>
</tr>
<tr>
<td><strong>Entry Employers •</strong></td>
<td>Protect workers against permit space hazards by complying with the standard.</td>
</tr>
<tr>
<td></td>
<td>• Inform controlling contractor of the program followed and hazards encountered in permit spaces.</td>
</tr>
<tr>
<td><strong>Controlling Contractors</strong></td>
<td>• Share information it has about permit space hazards with entry employers and other employers whose activities may create hazards in the permit space.</td>
</tr>
<tr>
<td></td>
<td>• Coordinate entry operations when there is more than one entry employer.</td>
</tr>
<tr>
<td></td>
<td>• Coordinate operations when permit space entry occurs during other activities at the site that might create a hazard in the space.</td>
</tr>
<tr>
<td><strong>Host Employers •</strong></td>
<td>Share information it has about permit space hazards with the controlling contractor.</td>
</tr>
</tbody>
</table>

Source – OSHA Publication 3825-09 2015, p. 13
# CONFINED SPACE CHECKLIST

## RECLASSIFYING THE CONFINED SPACE

### IS IT A Confined Space?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – <strong>Large enough</strong> to completely enter?</td>
<td>(Record dimensions, document that people enter, photos of people inside etc.)</td>
</tr>
<tr>
<td>2 – <strong>Limited/restricted</strong> access?</td>
<td>(Ladders, use their hands or contort their body, awkward postures, etc. – also, you could include height, depth, etc.)</td>
</tr>
<tr>
<td>3 – <strong>Not designed</strong> for continuous occupancy?</td>
<td>(Lack of adequate ventilation; designed to crush, burn, process, mix, contain, transfer, etc.)</td>
</tr>
</tbody>
</table>

### IS THE Confined Space a PERMIT-REQUIRED Confined Space?

<table>
<thead>
<tr>
<th>List ALL HAZARDS</th>
<th>Is this an existing hazard?</th>
<th>Is this a Potential Hazard?</th>
<th>Results*</th>
<th>What questions would you ask to achieve this documentation?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Results from any data collected – includes meter readings (% Oxygen, %LEL, ppm of toxics, velometer, noise, GM, WBGT, voltage...), measurements (depth of liquid, depth of space, volume of space..), samples collected (sludge, chemicals, etc.)...*

**QUANTIFY** – If it can be measured, measure it! If it can be collected, collect it!
CONFINED SPACE CHECKLIST

Options for Entry

C/S

No Existing or Potential Serious Hazards

Has existing or Potential Serious Hazard

NON-Permit

Introduce/Reintroduce Hazards

(c)(7)

Eliminate All Hazards

Permit-req'd C/S (c) (5)

Control haz atm w/CFAV

Alternate Entry (c) (5)

CFAV = Continuous forced air ventilation

C/S = Confined Space
1.0 Purpose

1.1 To provide minimum requirements for PPE on every Haselden Construction site and to enforce the correct selection and use of personal protective equipment.

2.0 Scope

2.1 The Haselden “Personal Protective Equipment Procedure (PPE)” establishes the guidelines for the use of personal protective equipment (PPE), including leather work boots, hard hats, gloves, hearing protection, and eye protection. This procedure also includes:

2.1.1 A template of a task specific PPE matrix,

2.1.2 Emergency safety shower, hand washing and eyewash station requirements.

2.1.3 The PPE matrix is a guide; to ensure its effectiveness, it must be updated as regulations change and as hazards are identified.

2.1.4 Respirators and fall protection are not addressed in this procedure.

3.0 Definitions

3.1 **Adequate Overhead Protection**: Head protection equal to or greater than that provided by an approved hard hat.

3.2 **Approved Hard Hat**: A rigid device, held in place by a suitable suspension that is worn to provide protection for the head against impact, flying particles, or electric shock. Each hard hat must conform to the current issue of ANSI Z89.1 Type 1, Class E & G, and be identified with that approval seal. Metal Hard Hats are not permitted on Haselden projects.

3.3 **Hard Hat Area**: Any area within Haselden work-site except in the office trailers, parking lots except where loading and unloading takes place, vehicles and those areas designated as “PPE not required” zones.

3.4 **Personal Protective Equipment (PPE)**: Any added wearable item designed to protect the health and safety of an employee. This includes, but is not limited to, chemical resistant shoes, boots, gloves, coveralls and rain suits, hard hats, safety glasses, Type II traffic vests, and cooling/heating vests. Respirators and fall protection devices are covered in separate programs.
4.0 Reference Documents

4.1 29 CFR 1926 Subpart E Personal Protective Equipment
4.2 OSHA Standard Interpretations – PPE for Overexposure to The Sun’s Radiation
4.3 OSHA Publication #3151 – Personal Protective Equipment
4.4 OSHA Publication #3252 – Worker Safety Series/Construction
4.5 OSHA Publication – Overview for 1926 Subpart E/Personal Protective Equipment
4.6 HC Respirable Silica Hazard Control Policy
4.7 HC Respiratory Protection Program
4.8 HC Fall Protection

5.0 Responsibilities

5.1 Director of Safety and Health or Designee:
   5.1.1 To assign responsibilities for implementation of this policy.
   5.1.2 To verify compliance with this policy on a periodic basis
   5.1.3 To update this program as regulatory bodies or company needs arise.

5.2 Site Superintendent(s):
   5.2.1 To assure that all site employees are trained in Personal Protective Equipment in accordance with Haselden Construction training requirements.
   5.2.2 To assure that all equipment is available as necessary.
   5.2.3 To periodically review the implementation of this program.
   5.2.4 To enforce disciplinary action for violations of this program.

5.3 Site employees:
   5.3.1 To follow this program when using PPE.
   5.3.2 Will ask their immediate supervisor if any PPE selection or use is in question.

6.0 Implementation

6.1 General
6.1.1 This procedure identifies the various types of personal protective equipment (PPE) that will be worn when performing work or visiting any Haselden job sites. It also includes task specific PPE which is based on a workplace hazard assessment. This procedure applies to all Haselden and subcontracted employees.

NOTE: Employees working within 10 feet (close proximity) of any activity of a task that requires specific PPE will be required to wear that same PPE as the employee(s) performing the task, unless the hazard requires PPE at a greater distance.

6.1.2 As a minimum, hard hats, safety glasses, work boots, and Type II vests will be worn in all areas and through the duration of mobilization, construction, demolition, punch list and warranty work except in offices or trailers and parking lots where work or loading/unloading is not taking place.

6.2 Visitor Requirements for PPE and Apparel

6.2.1 Hard hat (Haselden logoed for Haselden visitors)

6.2.2 Class 2 reflective vest (Haselden logoed for Haselden visitors)

6.2.3 Full length pants. No shorts or Capri style slacks are to be worn at any time on a project.

6.2.4 Everyone must have at a minimum three inches of sleeve on a shirt or blouse. Sleeveless shirts, midriff shirts, tank tops or low-cut blouses are not acceptable.

6.2.5 Refrain from wearing excessively loose-fitting shirts, jackets or pants.

6.2.6 Wear appropriate foot wear. No office or street shoes are permitted. Open toe or high heeled leather or manufactured shoes that are not cut resistance are not acceptable. For visitors only this means at a minimum a hiking type shoe or work boot with strong rubber soles, leather upper or a cut resistant type of shoe preferably extending above the ankle. Shoes which do not cover the ankle or are less than 6” tall may limit a visitor’s ability to walk the entire site based on ground conditions. Tennis shoes are not permitted, even safety type tennis shoes which lack cut or puncture resistance.

6.2.7 ANSI Z87 safety eye wear rated for impact resistance. Sunglasses which are not ANSI Z87 rated are not acceptable. If an employee wears prescription glasses that are not stamped ANSI Z87 2+, safety glasses or goggles must be worn over them.

6.2.8 Areas on a project where respiratory hazards exist are off limits to visitors.

6.2.9 Haselden safety training is required to access areas where fall hazards exist, when using ladders, cranes, or forklifts, and when accessing
scaffolds or confined spaces. Training for these hazards will only be provided if there is a business need for access to those areas.

6.3 Selection Criteria

6.3.1 The selection of PPE will be based on workplace hazard assessments, task duration, and the physical requirements of each work task.

6.3.2 The following minimum criteria are used in selecting personal protective equipment:

   6.3.2.1 Chemical, physical and biological hazards present;
   6.3.2.2 Type and duration of work operations to be performed;
   6.3.2.3 Potential routes of exposure;
   6.3.2.4 Concentrations of contaminants present;
   6.3.2.5 Chemical resistance of PPE items; and
   6.3.2.6 Physical characteristics, capabilities and limitations of PPE.

6.3.3 The Site Superintendent will determine which PPE is used for each work operation, with assistance from the Director of Health and Safety. Non-routine work operations will be reviewed for protective equipment requirements before the work begins.

6.3.4 Employees will be provided, and will be required to wear, appropriate PPE of the proper size and fit for their assigned work tasks.

6.3.5 For tasks where silica containing materials are drilled, crushed, cut or abraded, refer to HC Respirable Silica Hazard Control Policy attachment, Silica Controls Equipment or PPE for Specific Tasks.

6.4 Eye Protection

6.4.1 All personnel must be equipped with eye protection appropriate for the task being performed.

6.4.2 Safety Glasses (Non-prescription):

   6.4.2.1 All safety glasses must have fixed or permanently attached side shields and comply with the current version of ANSI Z87.1 and will be marked “Z87+” on the lenses and frames. All eye protection shall be rated for construction impacts.

   6.4.2.2 Prescription safety glasses;

      6.4.2.2.1 Lenses and frames will be marked “ANSI Z87-2+.”

      6.4.2.2.2 Side shields may be permanently attached or detachable.
6.4.2.3 Detachable side shields will be made of rigid material that can be secured to the glasses.

6.4.2.3 Employees with prescription glasses that do not comply with ANSI Z87 will be required to wear safety glasses or goggles over their prescription glasses.

6.4.2.4 Tinted lenses will NOT be worn in low light levels or in areas with low visibility (this may include interior work areas).

6.5 Face Protection

6.5.1 Employees will be required to wear safety glasses (as outlined in section 6.3) AND face shield while performing the following tasks:

6.5.1.1 Grinding

6.5.1.2 Power Sawing concrete or other extra hard materials

6.5.1.3 Power chipping or breaking

6.5.1.4 Handling chemical, corrosives, or molten materials

6.5.1.5 Use of air actuated tools that could propel small objects.

6.5.2 Goggles/Mono-goggles:

6.5.2.1 When wearing goggles/mono-goggles to perform tasks they must function without fogging inside of goggle lens.

6.5.2.2 Must not be cracked or broken.

6.5.3 Welding Shields and Burning Goggles.

6.5.3.1 Approved welding shield, with a #10 filter plate or greater and safety lenses on both sides will be worn whenever welding is performed. See EYESHADE REQUIREMENTS FOR WELDER’S HELMETS AND GOGGLES, attached.

6.5.3.2 Personnel assisting with the cutting or within 10 feet of the welding will wear a face shield AND goggles or safety lenses with #4 burning lenses.

6.5.3.3 Only approved burning goggles with no less than a #4 filter plate and safety lenses on both sides will be used during burning operations.

6.5.3.4 Welders must wear hardhats and safety glasses at all times.

6.6 Head Protection
6.6.1 An approved ANSI Z89.1 hard hat will be worn throughout the project, except in offices, vehicles and mobile equipment with adequate overhead protection.

6.6.1.1 Hard hats will be worn with the brim in the front, except to accommodate a welding helmet, a face shield or when operating a surveying instrument.

**NOTE:** When not performing these activities, hard hats must be worn with the brim in front.

6.6.1.2 To insure proper protection, the suspension must be:

6.6.1.2.1 Adjusted so that there is a 1-1/4” minimum clearance between the top of the head and the shell of the hat.

6.6.1.2.2 Mounted with the liner adjustment or ratchet in the back.

6.6.1.3 Employees will:

6.6.1.3.1 Perform a daily inspection of their hard hats and will check for cracks or other defects,

6.6.1.3.2 Replace the hard hat at the first sign of excessive wearing or damage,

6.6.1.3.3 **NEVER** alter or modify the shell or the hard hat suspension system,

6.6.1.3.4 **NOT** apply paints, solvents, chemicals, excessive stickers, or substances that may compromise the safety properties of the equipment.

6.6.2 Non-conductive hardhats will be used where employees are required to work near exposed electrical conductors that could contact the head. Only equipment meeting ANSI and OSHA requirements will be used.

6.6.3 Metal hardhats are not permitted on Haselden jobsites.

6.6.4 Cowboy type and novelty hardhats are not permitted on Haselden jobsites.

6.7 Hand Protection

6.7.1 Gloves will:

6.7.1.1 Be worn whenever performing work, handling tools, equipment, chemicals, hot/cold material or surfaces at all Haselden job-sites.

6.7.1.2 Be worn when handling sharp or pointed objects.

6.7.1.3 Be used to prevent cuts when using razor knives, pocket knives, utility knives, and insulation knives.
6.7.2 Glove use and selection will:

6.7.2.1 Be evaluated based on the task being performed.

6.7.2.2 Gloves will not be worn when wearing them will increase the possibility of injury.

6.7.2.3 Suitability requirements, such as cut, puncture, and heat resistance, and protection from chemicals must be considered.

6.8 Foot Protection

6.8.1 As a minimum, substantial leather work boots are required for all work except:

6.8.1.1 For tasks where more protective footwear is required.

6.8.2 Hazard-specific footwear, such as rubber (PVC) boots, non-conductive, or other specialty footwear shall be worn as appropriate for the task.

6.8.3 Full bridged metatarsal protection or safety toe boots are required for concrete breaking, power tamping and other heavy work.

6.8.4 Tennis shoes and shoes that do not provide ankle support are prohibited.

6.9 High Visibility Clothing

6.9.1 All site employees and subcontractors are required to wear an ANSI/ISEA 107-2004 Class 2 or better high visibility vest, jacket or shirt when on-site.

6.9.2 Welders or others performing hot work are not required to wear high visibility clothing when conducting hot work activities. They must comply at all other times. This includes walking around the site as well as set up and shut down activities.

6.10 Hearing Protection

6.10.1 Employees exposed to noise levels that exceed 85 dBA, 8-hour time-weighted average, are required to wear hearing protection that has a Noise Reduction Rating (NRR) of 32 or better.

6.10.2 Earplugs or earmuffs must be worn properly to obtain the maximum noise reduction and hearing protection.

6.10.3 Defective hearing protection will be replaced immediately.

6.10.4 Earplugs:

6.10.4.1 Employees must wash their hands prior to inserting and removing earplugs to prevent infection and chemical contamination.
6.10.4.2 Should be inserted while reaching around the back of the head and pulling back on the outer ear with one hand to open the ear canal.

6.10.4.3 Expandable earplugs should be held in place with the tip of one finger, until they fully expand to fill the ear canal.

6.10.4.4 Disposable earplugs are intended to be replaced after each use.

6.10.4.5 Reusable earplugs must be washed with soap and clean water after each use.

6.10.5 Earmuffs:

6.10.5.1 Must fit flush against the head for maximum noise reduction and hearing protection.

6.10.5.2 Hair and glasses frames may break the sealing surface of the earmuff and reduce their effectiveness.

6.10.5.3 Earmuffs must be washed with soap and clean water at the end of the work shift.

6.11 Body Protection (Standard Clothing)

6.11.1 Minimum dress code or body protection includes:

6.11.1.1 Shirts with sleeves:

6.11.1.1.1 Shirt will cover the full trunk and shoulders.

6.11.1.1.2 Tank-tops, tube-tops, muscle or midriff shirts are not allowed.

6.11.1.1.3 Shirt will not contain offensive pictures or words.

6.11.1.2 Full-length pants are required; cutoff jeans or shorts are not acceptable.

6.11.1.3 Clothing will NOT have un-mended tears or rips.

6.12 Safety Showers and Eyewash Station

6.12.1 Portable eyewash stations, capable of a 15-minute flush (approximately 5 gallons capacity) must be provided at all jobsites.

6.12.2 Portable eyewash stations must be maintained with biocides in accordance with the manufacturer's recommendations to eliminate the potential for bacteria growth that may infect the eye of a patient.
6.12.3 Provide safety showers where the potential exists for exposure to hazardous materials as required by the SDS.

6.12.4 Inspect this equipment in accordance with manufacturers’ recommendations or more frequency, if needed, to ensure the equipment is:

6.12.4.1 Functioning properly and that the pressure and flow is adequate.

6.12.4.2 Protected from the elements (extreme ambient temperatures, bacteria growth, accumulation of dust, etc.).

6.12.5 Contain and dispose of contaminated wash/flush water if required by local, state and federal regulations

6.12.6 Maintain inspection records onsite and provide them to Haselden management team upon request.

6.13 Hand Washing Facilities

6.13.1 Hand washing facilities consisting of water, soap and hand towels will be provided for personnel working with cement, wet concrete, mortar, cementitious products, paints, coatings, pesticides, herbicides, or other chemicals where hand washing is recommended or required by the SDS. **Hand sanitizer does not meet this requirement.**

6.14 Purchasing and Procurement

6.14.1 All Haselden PPE will be purchased from Haselden Construction approved vendors. The Director of Health and Safety must first approve changes in brand, style or type of equipment in use. Site Superintendents or their designees are responsible for ordering personal protective equipment supplies

6.15 Other Protective Equipment

6.15.1 Personal Fall Arrest System equipment must be used where specified in the HC Fall Protection Program.

6.15.2 Respirators must be used where specified in the HC Respiratory Protection Program and the HC Respirable Silica Hazard Control Policy.

7.0 Attachments:

7.1 Personal Protective Equipment Specific Tasks

7.2 Eyeshade requirements for Welders Helmets and Goggles
### PERSONAL PROTECTIVE EQUIPMENT – SPECIFIC TASKS

**PERSONAL PROTECTIVE EQUIPMENT**

- Hard Hat, ANSI Z89.1 Safety Glasses, Gloves, Type 2 Traffic Vest, Work Boots, Shirts W/Sleeve, Long Pants
- Goodies
- Welding Hood/Goggles
- Face Shield
- Hearing Protection
- Job Specific Work Gloves
- Rubber Boots
- Steel Toes or Guards
- Respirators
- Special Coverals
- Fall Protection/Harness
- Slicker Suit
- Cut Resistant Gloves
- Protective Clothing
- Chemical Resistant Rubber Gloves

**COMMENTS**

### SITE GRADING & EXCAVATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grading - Machine</td>
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</tr>
<tr>
<td>Grading - Hand</td>
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<tr>
<td>Trenching for Grade Beams, Footings, etc.</td>
<td>X</td>
<td></td>
<td>*</td>
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<tr>
<td>Backfill Operation</td>
<td>X</td>
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<tr>
<td>Tamping Operation</td>
<td>X</td>
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<td>Site Demo</td>
<td>X</td>
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<tr>
<td>Chipping Concrete- Machine (Old Footings)</td>
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**PARKING LOT- ASPHALT**

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<tbody>
<tr>
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<td>Grading - Machine</td>
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<tr>
<td>Grading - Hand</td>
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</tr>
<tr>
<td>Stabilized Bed &amp; Rock Base</td>
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</tr>
<tr>
<td>Asphalt Primer</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Place and Roll Asphalt</td>
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**SITE UTILITIES**

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<tbody>
<tr>
<td>Trenching for underground piping</td>
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<td>X</td>
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**GENERAL WORK (GC)**

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## PERSONAL PROTECTIVE EQUIPMENT – SPECIFIC TASKS

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## PERSONAL PROTECTIVE EQUIPMENT

### SPECIFIC TASKS

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<th>Task</th>
<th>Hard Hat, ANSI Z87+ Safety Glasses, Gloves, Type 2 Traffic Vest, Work Boots, Shirts W/Sleeve, Long Pants</th>
<th>Welding Hood/Goggles</th>
<th>Face Shield</th>
<th>Hearing Protection</th>
<th>Job Specific Work Gloves</th>
<th>Rubber Boots</th>
<th>Respirators</th>
<th>Special Coveralls</th>
<th>Fall Protection/Harness</th>
<th>Slicker Suit</th>
<th>Cut Resistant Gloves</th>
<th>Protective Clothing</th>
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### FIRE PROTECTION SYSTEMS

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<th>Install Pipe Hangers</th>
<th>Hang and Connect Supply Pipe</th>
<th>Install Risers</th>
<th>Install sprinkler lines and heads</th>
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### DUCTS/SHEET METAL

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<th>Task</th>
<th>Punch holes and drop hangers</th>
<th>Receive &amp; Distribute Ducts to Floors</th>
<th>Hang ductwork</th>
<th>Seal Joints</th>
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### DUCTWORK/PIPE INSULATION

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<th>Insulate Ductwork</th>
<th>Insulate Chilled &amp; Domestic Water Pipes</th>
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### ELECTRICAL

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<th>Task</th>
<th>Trenching for underground conduits</th>
<th>Laying utility pipes/conduits in trench</th>
<th>Backfill Operation</th>
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<th>Pulling cable and wire-underground</th>
<th>Tamping Operation</th>
<th>Interior conduits, panels, boxes, etc</th>
<th>Pulling cable and wire - interior</th>
<th>Fixture Installation</th>
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<th>COMMENTS</th>
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<td>Goggles</td>
<td>Backfill Operation</td>
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<td>Install Waste and Vents</td>
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</tr>
<tr>
<td>Job Specific Work Gloves</td>
<td>Fabricate carriers</td>
<td>X       X</td>
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<tr>
<td>Respirator</td>
<td>Install carriers in restrooms</td>
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<tr>
<td>Type 2 Traffic Vest</td>
<td>Install Fixtures</td>
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<tr>
<td>Rubber Boots</td>
<td>Trim out</td>
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<tr>
<td>Steel Toes or Guards</td>
<td>Roof Coring</td>
<td>X       X     *</td>
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<tr>
<td>Respirators</td>
<td>* If exposed to fall hazards</td>
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<tr>
<td>Special Coveralls</td>
<td>Fall Protection/Harness</td>
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<td>Slicker Suit</td>
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<tr>
<td>Protective Clothing</td>
<td>Chemical Resistant Rubber Gloves</td>
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<tr>
<td>Chemical Resistant Rubber Gloves</td>
<td>Comments</td>
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## PERSONAL PROTECTIVE EQUIPMENT – SPECIFIC TASKS

<table>
<thead>
<tr>
<th>PERSONAL PROTECTIVE EQUIPMENT</th>
<th>Hard Hat, ANSI Z87+ Safety Glasses, Gloves, Type 2 Traffic Vest, Work Boots, Shirts W/Sleeve, Long Pants</th>
<th>Googgles</th>
<th>Welding Hood/Goggles</th>
<th>Face Shield</th>
<th>Hearing Protection</th>
<th>Job Specific Work Gloves</th>
<th>Rubber Boots</th>
<th>Respirators</th>
<th>Special Coveralls</th>
<th>Fall Protection/Harness</th>
<th>Sliver Suit</th>
<th>Cut Resistant Gloves</th>
<th>Protective Clothing</th>
<th>Chemical Resistant Rubber Gloves</th>
<th>COMMENTS</th>
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</thead>
<tbody>
<tr>
<td>Install louvers</td>
<td>X</td>
<td>*</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>* As Needed</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Install Glass panels</td>
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<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>X</td>
<td>X As Needed</td>
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<tr>
<td><strong>CONCRETE GRINDING &amp; STAINING</strong></td>
<td></td>
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</tr>
<tr>
<td>Grinding</td>
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<td>X</td>
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<td></td>
<td></td>
<td># See HC Respirator and Silica Policy</td>
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<tr>
<td>Staining</td>
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<td>*</td>
<td>#</td>
<td># See HC Respirator and Silica Policy</td>
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## Eye Shade Requirements for Welder’s Helmets and Goggles (29 CFR 1910.133)

<table>
<thead>
<tr>
<th>Welding/Cutting Operations</th>
<th>Electrode Size (inches)</th>
<th>Arc Current</th>
<th>Minimum Protective Shade*</th>
</tr>
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<tbody>
<tr>
<td>Shielded metal arc welding</td>
<td>&lt; 3/32</td>
<td>&lt; 60</td>
<td>7</td>
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<tr>
<td></td>
<td>3/32 - 5/32</td>
<td>60 - 160</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>5/32 - 8/32</td>
<td>160 - 250</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>&gt; 8/32</td>
<td>250 - 550</td>
<td>11</td>
</tr>
<tr>
<td>Gas metal arc and Flux cored arc welding</td>
<td>&lt; 60</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60 - 160</td>
<td>10</td>
<td></td>
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<td>160 - 250</td>
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<td></td>
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<tr>
<td></td>
<td>250 - 500</td>
<td>10</td>
<td></td>
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<tr>
<td>Gas tungsten arc welding</td>
<td>&lt; 50</td>
<td>8</td>
<td></td>
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<tr>
<td></td>
<td>50 - 150</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>150 - 500</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Air carbon arc cutting</td>
<td>Light</td>
<td>&lt; 500</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Heavy</td>
<td>500 - 1000</td>
<td>11</td>
</tr>
<tr>
<td>Plasma arc welding</td>
<td>&lt; 20</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 - 100</td>
<td>8</td>
<td></td>
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<tr>
<td></td>
<td>100 - 400</td>
<td>10</td>
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<tr>
<td></td>
<td>400 - 800</td>
<td>11</td>
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<tr>
<td>Plasma arc cutting</td>
<td>Light**</td>
<td>&lt; 300</td>
<td>8</td>
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<td></td>
<td>Medium**</td>
<td>300 - 400</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Heavy**</td>
<td>400 - 800</td>
<td>10</td>
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<tr>
<td>Torch brazing and torch soldering and carbon arc welding</td>
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</table>
EYESHADE REQUIREMENTS FOR WELDER'S HELMETS AND GOGGLES  
(29 CFR 1910.133)

CONTINUED

<table>
<thead>
<tr>
<th>Welding/Cutting Operations</th>
<th>Plate Thickness (inches)</th>
<th>Plate Thickness (mm)</th>
<th>Minimum Protective Shade*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Welding</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Light</td>
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<td></td>
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<tr>
<td>Medium</td>
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<td></td>
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<tr>
<td>Heavy</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1/8</td>
<td>&lt; 3.2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>1/8 - 1/2</td>
<td>3.2 - 12.7</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>&gt; 1/2</td>
<td>&gt; 12.7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Oxygen Cutting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td></td>
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<td></td>
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<tr>
<td>Medium</td>
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<tr>
<td>Heavy</td>
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<tr>
<td>&lt; 1</td>
<td>&lt; 25</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1 - 6</td>
<td>25 - 150</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>&gt; 6</td>
<td>&gt; 150</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade that gives sufficient view of the weld zone without going below the minimum. In oxy-fuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light spectrum.

** These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the work piece.
All Jobsite Visitors Must Wear the following

**Personal Protective Equipment**

**Equipo de Protección Personal**

- **Hard Hat**
  - Casco
  - With Haselden logo (Haselden visitors)
  - **DO NOT Wear**
  - Hard Hats Backward
  - No utilice su casco al revés

- **Eye Protection**
  - Gafas de Seguridad
  - ANSI Z87 + Safety Glasses
  - ANSI Z87 2+ Prescription Glasses, or Safety Glasses over prescriptions

- **Work Shirt**
  - Camisa de Trabajo
  - NO Tank Tops
  - No camisas sin mangas
  - Minimum Sleeve Length 3"
  - No sleeveless shirts
  - No low cut blouses
  - No midriff shirts

- **Ear Protection**
  - Protección de Oídos
  - For high noise levels, issued at site

- **High Visibility Vest**
  - Chaleco de Alta Visibilidad
  - Type II or III (with Haselden logo for Haselden visitors)

- **Work Boots**
  - Zapatos de Seguridad
  - NO Athletic Shoes
  - No zapatos deportivos
  - NO Sandals
  - No Sandalias
  - No high heels
  - No open toe shoes
  - No dress shoes
  - Rubber soles and leather uppers are required

- **Pants or Overalls**
  - Pantalones de Trabajo
  - NO Shorts
  - No pantalones cortos
  - No Capris
  - NO Torn Pants
  - No pantalones rotos
1.0 Purpose

1.1 The purpose is to provide information and guidelines on personnel and materials hoist erection, operation and dismantling.

2.0 Scope

2.1 This procedure applies to all Haselden work sites. Personnel and material hoists are not an integral part of any building and do not incorporate any part of a permanent elevator system to be installed later.

3.0 Definitions

3.1 Ground Enclosure - A wire meshed frame around the foundation and hoist mast. It is erected primarily for personnel protection and contains moving parts and electrical components, pulleys, cable, and counterweights. It has a mechanically and/or an electronic interlock entry system that locks out the equipment when the enclosure door is opened, permitting safe entry into the enclosure.

3.2 Competent Person - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

3.3 Qualified Person - one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

3.4 Qualified Elevator Inspector – a person qualified under the ASME Qualified Elevator Inspector (QEI)-1 Standard.

4.0 Reference Documents

4.1 29 CFR 1926.552

4.2 HC Crane Policy

4.3 HC Fall Protection Program
4.4 HC Rigging Policy

4.5 HC Control of Hazardous Energy Policy

4.6 ANSI/ASSE A10.4, Safety Requirements for Rope Guided and Non-Guided Workers’ Hoists for Construction and Demolition Operations

4.7 ANSI/ASSE A10.5, Safety Requirements for Material Hoists

5.0 Responsibilities

5.1 Superintendent

5.1.1 Verify all hoists arrive on site with current certifications;

5.1.2 Confirm all hoists are in good operating condition

5.1.3 Verify operators are certified to operate the equipment

5.2 Operators

5.2.1 Operate the equipment in a safe manner;

5.2.2 Obey all safety and operating rules;

5.2.3 Maintain valid certification for operating the hoist in the jurisdiction where the work is located;

5.2.4 Be trained to operate the particular hoist.

5.3 Hoisting and Rigging

5.3.1 Crane operators used to assemble, erect, raise, repair, adjust and dismantle the hoist must be NCCER certified, and the HC Crane policy must be followed for all hoisting.

5.3.2 Rigging must be performed by qualified riggers in accordance with the HC Rigging Policy.

6.0 Implementation

6.1 Personnel Hoists shall be designed, constructed, installed, operated, inspected, tested, maintained, altered and repaired in accordance with ANSI/ASSE A10.4, “Safety Requirements for Rope Guided and Non-Guided Workers’ Hoists for Construction and Demolition Operations”.

6.1.1 Inspection shall be performed by a Qualified Elevator Inspector, or a person having authorization from the Agency Having Jurisdiction for the inspection.

6.2 Material Hoists shall be designed, constructed, installed, operated, inspected,
tested, maintained, altered and repaired in accordance with ANSI/ASSE A10.5, “Safety Requirements for Material Hoists”.

6.2.1 Inspection shall be performed by a Qualified Person.

6.3 **Construction of Hoists**

6.3.1 Hoist foundations shall be designed by a Registered Professional Engineer to safely support the intended loads.

6.3.2 Hoist towers shall be properly bonded and grounded in accordance with NFPA 70, the National Electrical Code.

6.3.3 Hoists shall be attached to the structure at intervals required by the manufacturer in a manner and at locations approved by the Engineer of Record.

6.3.4 Tie-in attachments shall remain in place until the hoist is removed.

6.3.5 Hoistways shall be guarded in accordance with ANSI standards to prevent injury to employees.

6.3.6 All gears, running nip points, and crush points shall be protected by adequate guarding.

6.3.7 The area below the hoist must be fully protected or barricaded to prevent access to any personnel without first following Haselden’s Control of Hazardous Energy Policy.

6.3.8 All live electrical parts shall be guarded.

6.3.9 All electrical devices shall be weatherproof if exposed to weather.

6.3.10 Hoist cars shall be fully enclosed.

6.3.11 Hoist enclosures shall be made of metal or fire-retardant material.

6.3.12 Car enclosures shall have a minimum lighting level of 5 foot candles measured at the door threshold.

6.3.13 Open flame heaters or combustible fuels shall not be used to heat car enclosures.

6.3.14 Landing doors shall be installed and maintained by others. Haselden Construction employees shall not perform this work.

6.3.15 A manually operated emergency stop shall be located in the car in or adjacent to the operating panel.

6.4 **Erection and Removal of Hoists**
6.4.1 During erection and removal, jumping, alteration, testing or adjustment, no personnel or materials other than those directly involved in such work shall be hoisted.

6.4.1.1 All such work shall be performed under the supervision of a competent person.

6.4.1.2 All personnel involved in such work must provide proof of training and experience in the following items.

6.4.1.2.1 Recognizing safety hazards inherent in the work they are performing.

6.4.1.2.2 Recognizing components, systems, and work procedures used.

6.4.1.2.3 Performing work in compliance with OSHA and ANSI standards.

6.4.1.2.4 Knowledge of the erection, dismantling, service, maintenance, alteration or testing requirements of the hoist manufacturer.

6.4.1.2.5 Knowledge of the safety practices of the employer on the jobsite where they are working.

6.4.1.2.6 Knowledge of site specific hazards.

6.4.1.3 A job specific fall protection plan must be prepared for personnel involved in such work that also protects other employees on the jobsite who may be exposed to fall hazards created by the work.

6.5 Inspection and Testing of Hoists

6.5.1 Hoists shall be inspected before first use, daily, quarterly, after height extension, and post-incident, in accordance with the ANSI standards.

6.5.2 All hoist devices shall be acceptance inspected and load tested before being placed in service after new installation or alterations. Jumping the hoist is not considered an alteration and requires a re-inspection but not a load test.

6.5.3 All safety devices and operational features of the hoist shall be inspected for proper functioning in accordance with the manufacturer’s requirements. Parts shall be tested as necessary to ensure they are in safe operating condition.

6.5.3.1 All safety devices disabled for inspection and testing shall be made operational immediately following the inspection and testing.
6.6 **Use of Hoists**

6.6.1 Hoists shall be used in accordance with the manufacturer’s instructions.

6.6.2 No person shall be permitted to disable a safety device or feature on any hoist or hoist assembly, except for testing and inspection purposes.

6.6.3 A hoist log shall be maintained for erection, inspection, alteration, incidents, trouble calls and use. See ANSI standards.

6.6.4 Personnel hoists may be used for carrying materials when permitted by the manufacturer. Only two attendants may accompany material carried in a personnel hoist.

6.6.5 Personnel may not use a material hoist, nor may personnel accompany material carried in a material hoist.

6.6.6 Wheelbarrows and other rolling equipment must be held securely in place when carried on a hoist platform.

6.6.7 Powered equipment must not be loaded onto a hoist platform on its own power, but must be pushed and pulled manually. The power must be shut off at all times.

6.6.8 Permits shall be posted conspicuously in the car, or there must be a notice indicating where on the jobsite permits and inspections may be examined.

6.6.9 Hoists shall be operated in accordance with the manufacturer’s requirements and the requirements of the Authority Having Jurisdiction.

6.6.10 Hoists shall be operated by an authorized person inside the cab or at each landing using automatic controls located inside the cab and at each landing.

6.6.11 Hoists shall not be used during adverse weather conditions where use of the hoist shall become a hazard. Hoists shall be shut down at a wind speed of 35 mph, unless designed to run at higher wind speeds and allowed by the hoist manufacturer.

6.6.12 The manufacturer’s operation and maintenance manual shall be available on the jobsite.

6.6.13 A voice communication must be maintained when the hoist height exceeds 50 feet. Cell phone or radio communication are acceptable methods.

6.7 **Additional Requirements**
6.7.1 Follow additional requirements for design, construction, installation, operation, inspection, alteration and repair of personnel hoists as found in ANSI/ASSE A10.4, “Safety Requirements for Rope Guided and Non-Guided Workers’ Hoists for Construction and Demolition Operations”.

6.7.2 Follow additional requirements for design, construction, installation, operation, inspection, alteration and repair of material hoists as found in “ANSI/ASSE A10.5, Safety Requirements for Material Hoists.”

7.0 Attachments:

7.1 Personnel & Material Hoists Illustration
Haselden Construction Safety Program

Subject: Program Evaluation and Improvement
Approved By: Safety Department
Date: 1/15/2018

1.0 Purpose

1.1 The Haselden Injury and Illness Prevention Program will be reviewed by Haselden Construction’s Director of Health and Safety or designee at least once every year after program commencement through to completion.

2.0 Scope

2.1 The purposes of these reviews are to:

   2.1.1 Identify the strengths of Haselden’s IIPP and safety programs.
   2.1.2 Identify areas of non-compliance
   2.1.3 Identify where the program could be further improved so as to achieve higher levels of health, safety and compliance
   2.1.4 Assist in reducing injuries and incidents and claim costs

3.0 Definitions

4.0 Reference Documents

4.1 National Safety Council – Safety Management System

5.0 Responsibilities

5.1 Director of Safety or Designee will review the safety program and update as the regulations or industry standard changes.

6.0 Implementation

6.1 Ensure our IIPP is in line with the OSHA requirements and incorporate any necessary changes

6.2 Training program must meet minimum standards

   6.2.1 Perform evaluations to determine training needs
   6.2.2 Provide qualified instructors
6.2.3 Produce adequate training material
6.2.4 Provide refresher / remedial training
6.2.5 Properly document all training

6.3 Management takes action on the evaluation
6.3.1 Develop an action plan
6.3.2 Prioritize recommendations
6.3.3 Assign accountability
6.3.4 Conduct a follow up

7.0 Attachments:
1.0 Purpose

1.1 It is Haselden Construction’s policy to treat employees and subcontractors in a fair and respectful manner while maintaining the discipline necessary to assure the safety, quality and productivity of our operations.

2.0 Scope

2.1 Haselden Construction recognizes the need for incorporating safe working practices into every job. It promotes the advancement of safety in all aspects and areas of construction.

2.2 Patterns of safety violations shall be corrected through progressive action.

3.0 Definitions

4.0 Reference Documents

4.1 Haselden Construction Safety Department, Haselden Safety Program

4.2 Haselden Construction “Code of Conduct”.

5.0 Responsibilities

5.1 Superintendent

5.1.1 Is accountable for safety performance and for providing the example for maintaining safe work practices by all site workers, including subcontracted employees.

5.1.2 Will administer the safety program by communicating their support and actively promoting safety on their assigned project and throughout the company.

5.1.3 Is accountable for enforcing Haselden safety policy by following the Progressive Discipline Policy.
5.1.4 Shall notify the VP Operations and Field Operations Manager before taking any disciplinary action under this policy at a jobsite level whether directed toward a Haselden employee or a subcontractor.

5.2 Director of Safety and Health or Designee

5.2.1 Report to Senior Management any deviations found to be contrary to this program.

5.2.2 Conduct random audits of project sites and evaluate the effectiveness of the application of this program.

5.2.3 When investigating accidents or correcting findings, notify the VP Operations and Field Operations Manager before taking any disciplinary action under this policy whether directed toward a Haselden employee or a subcontractor.

5.3 All employees including subcontractor employees are required to:

5.3.1 Follow the Haselden Construction Safety and Environmental Programs

5.3.2 Wear all required personal protective equipment

5.3.3 Follow directions and rules established by their supervisor

5.3.4 Report any unsafe acts or conditions to project supervision

5.3.5 Attend required safety meetings, safety orientation and other related meetings.

5.3.6 Report all incidents immediately and provide written documentation to Haselden’s Safety department within 24 hours.

6.0 Implementation

6.1 Class of Violations:

6.1.1 Class “A” Violations: The following behavior is of such a serious nature as to require termination or removal from the job site. The following are examples but do not constitute and all-inclusive list:

6.1.1.1 Employees starting, or creating an adverse condition which leads to fighting or disorderly conduct on Haselden Construction job sites, premises or areas where job tasks are being performed, including but not limited to traveling to and from job sites or company premises.

6.1.1.2 Theft or willful destruction of Haselden Construction’s, the project owner’s, or subcontractor’s property.
6.1.1.3 Violation of Haselden Construction Substance Abuse Prevention Policy.

6.1.1.4 Willful endangerment of the life or safety of fellow employees.

6.1.2 Class “B” Violations: Where Haselden or Subcontractor employees are observed committing unsafe acts by placing themselves, or others, in danger of serious injury, illness or death. The following are examples but do not constitute an all-inclusive list:

6.1.2.1 Willful fall protection violations

6.1.2.2 Working in an unsafe trench or excavation

6.1.2.3 Unsafe use of ladders and scaffolding

6.1.2.4 Willful failure to control hazardous energy

6.1.2.5 Permit Required Confined Space violation

6.1.3 Class “C” Violations: The following behavior is specifically recognized as unacceptable and requires disciplinary action which may include termination:

6.1.3.1 Excessive absenteeism

6.1.3.2 Failure to follow instructions

6.1.3.3 Falsification of Employment Application or Haselden Construction work record

6.1.3.4 Harassment based on an individual’s sex, race, color, national origin, religion, disability or age in any form by an employee

6.1.3.5 Inability to perform assigned tasks

6.1.3.6 Insubordination

6.1.3.7 Leaving the job without permission or job abandonment

6.1.3.8 Solicitation or distribution of literature on Haselden Construction premises or work sites

6.1.3.9 Tardiness

6.1.3.10 Theft

6.1.3.11 Unsafe Behavior, except as described in Class “A” and “B” Violations
6.1.3.12 Violation of safety rules, except as described in Class “A” and “B” Violations

6.2 Disciplinary Action:

6.2.1 Violations may result in the following progressive disciplinary action being taken.

6.2.1.1 Class A Violations

6.2.1.1.1 First Offense: Immediate Suspension or Termination

6.2.1.1.2 Second Offense: Termination or Removal from Haselden Projects.

6.2.1.2 Class B Violations

6.2.1.2.1 Step 1: Retraining of the employee and the employee’s direct supervisor. This may include re-attending Project Safety Orientation, or re-attending training required by OSHA identified in the Employee Qualification Matrix (See HC Safety Submittal Procedure), at the discretion of Haselden Management.

6.2.1.2.1.1 For Haselden employees, the Employee Warning Notice, Form 7.1 (attached) shall be completed by the employee and supervisor, and a copy shall be forwarded to Human Resources to be placed in the employee’s file. This warning notice will be considered the First Offense as provided for in Class C Violations.

6.2.1.2.1.2 For subcontractor employees, Subcontractor Safety Violation Observation Notice, Form 7.2 (attached) shall be completed and distributed to the employer’s upper management.

6.2.1.2.2 Step 2: For Haselden employees, behavior shall be evaluated after initial retraining. Additional training may be required based on need and the demonstrated willingness and cooperation of the employee.

6.2.1.2.2.1 Observation of additional unsafe actions by the employee will be documented via the Employee Warning Notice and may include discipline up to and including termination.

6.2.1.3 Step 2: For Subcontractors, the Subcontractor’s insurance carrier shall be contacted, and a meeting shall promptly be held on the
jobsite between Haselden management, Haselden safety department representatives, subcontractor management and the insurance carrier's loss control specialist.

6.2.1.3.1 The loss control specialist and the Haselden Safety Department shall make recommendations regarding the subcontractor’s safety program.

6.2.1.3.2 The subcontractor shall implement the recommendations and make other changes to correct deficiencies, to the satisfaction of Haselden Construction.

6.2.1.4 Step 3: For Subcontractors, the subcontractor's principal shall meet with HC upper management to discuss the eligibility of the subcontractor to propose on future Haselden projects.

6.2.1.5 Class C Violations

6.2.1.5.1 First Offense: Oral or Written Warning

6.2.1.5.2 Second Offense: Final Written Warning

6.2.1.5.3 Third Offense: Termination of employment or Removal from Haselden Projects

6.2.1.6 Haselden Construction reserves the right to Terminate or permanently remove any employee or individual from Haselden projects on a single Health, Safety, or Environmental infraction with or without prior warning or notice.

6.3 Accountability:

6.3.1 Compliance in these areas will be included in all salaried annual job appraisals/performance reviews. For Haselden Construction hourly employees, their knowledge of and adherence to established Haselden safety procedures will be taken into account during their annual safety record review.

7.0 Attachments:

7.1 Employee Warning Notice

7.2 Subcontractor Safety Violation Observation Notice
EMPLOYEE WARNING NOTICE

NAME ______________________  DATE ______________________

Was first notice – written or verbal (circle one)

Employee initials ____________

<table>
<thead>
<tr>
<th>NATURE OF VIOLATION</th>
<th>DETAILED ACCOUNT OF FACTS</th>
<th>CLASS B VIOLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Substandard Work Quality</td>
<td></td>
<td>□ Willful Fall Protection</td>
</tr>
<tr>
<td>□ Safety Violation</td>
<td></td>
<td>□ Unsafe excavation</td>
</tr>
<tr>
<td>□ Substandard Productivity</td>
<td></td>
<td>□ Ladder or scaffold use</td>
</tr>
<tr>
<td>□ Lateness/Early Quit</td>
<td></td>
<td>□ Hazardous energy</td>
</tr>
<tr>
<td>□ Unexcused Absences</td>
<td></td>
<td>□ Permit Required Confined Space</td>
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<tr>
<td>□ Excessive Absences</td>
<td></td>
<td>□ Other (Describe) _______</td>
</tr>
<tr>
<td>□ Policy Violation</td>
<td></td>
<td>---------------------</td>
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<tr>
<td>□ Carelessness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Inappropriate Conduct</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Employee remarks (please indicate if you dispute facts:)

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

I have read this notice and understand. I also understand that if this is a final notice and the violation occurs again it may result in suspension or termination.

__________________________
Employee Signature

__________________________  __________________________  __________________________
Signature of Forman or Supervisor  Job #  Senior Superintendent

* Original copy to Human Resources
Subcontractor Safety Violation Observation Notice

WARNING!

You were observed performing an unsafe act or creating an unsafe condition

Date: ___________________ Time: ___________________

Subcontractor: ___________________ Employee Name(s): ___________________

Employee Supervisor: ___________________

Description of Violation: ________________________________________________

_____________________________________________________________________

This notice is a:

☐ 1st Warning
☐ Final Warning
☐ Suspension from Project
☐ Removal from all Haselden Projects
☐ Class B Violation
☐ Other: ___________________________________________________________

Photos attached:  ☐ Yes    ☐ No

I have read and understand this notice:

Subcontractor Representative ___________________ Title ___________________ Date ____________

Haselden Construction Representative ___________________ Title ___________________ Date ____________

Action Plan to correct the condition:

_____________________________________________________________________

Sub Management Notified by: ___________________  HC Management Notified by: ___________________

Party Notified: ___________________  Party Notified: ___________________

Date: ________________  Date: ________________
1.0 Purpose

1.1 This document describes the policy for orienting subcontractors and Haselden employees to a specific project.

1.2 To introduce Haselden and its customers’ safety guidelines, policies, and standard operating procedures for a specific project.

2.0 Scope

2.1 This document applies to all Haselden Construction projects.

3.0 Definitions

4.0 Reference Documents

5.0 Responsibilities

5.1 Superintendent

5.1.1 Ensure that every Haselden and Subcontractor employee attends a project specific orientation.

5.1.2 The orientation presentation can be delegated to another Haselden project staff member, but it is ultimately the responsibility of the site superintendent that this program is performed in its entirety.

5.2 Director of Safety and Health or Designee

5.2.1 Will help design and interpret orientation materials and will be available to answer questions regarding Haselden’s Safety and Environmental Program, policies, and any applicable government.

6.0 Implementation

6.1 Safety Orientations

6.1.1 The Site Superintendent or Project Manager should schedule safety orientations for employees of any subcontractor, engineering company or architectural firm, material provider or testing agency in advance of
mobilization, regularly scheduled meeting attendance, stocking of materials, site surveying, project walks, or work operations.

6.1.2 Persons performing site walks or audits may be exempted from orientation at the discretion of project management, if accompanied by a Haselden employee who has attended orientation. These persons must be briefed by the Superintendent or designee on emergency procedures and the hazards that exist in the portion or portions of the jobsite where the site walk or audit will be conducted.

6.1.3 Persons who report to the jobsite for scheduled work on a day when Safety Orientation is not scheduled or available shall be briefed by the Superintendent or designee on emergency procedures and the hazards that exist in the portion or portions of the jobsite where they will be working. This includes Day Laborers provided by an employment service who are working for Haselden or our subcontractors. The employer shall prepare a Job Hazard Analysis and Plan of the Day for the operation and review it with each employee. The employees shall attend orientation as soon as practicable thereafter.

6.2 Orientation Requirements

6.2.1 Provide the employee with an introduction to the project site, Haselden Construction Staff, entrances, exits, gates, parking and access/egress requirements.

6.2.2 Provide the employee with Haselden Construction site-specific rules, all customer specific guidelines, and the Haselden Code of Conduct.

6.2.3 Provide the employee with an overview of Haselden Construction’s safety policies that are applicable to their work and those policies that exceed OSHA regulations.

6.2.4 Have the employee sign the Haselden 7.1 orientation form and file the form in the site safety filing system.

6.3 Security

Haselden Construction clients may require employers to provide additional information including verification of training, identity checks, E-verify, proof of citizenship or authorization to work in the US, green card or work visa, criminal background check, driver’s record, or substance abuse testing. The employer shall provide this information in a timely fashion prior to sending employees for orientation.

6.3.1 Individuals who refuse or fail to participate in an orientation or are disqualified following review of additional information provided to our clients will be denied access to the project.

7.0 Attachments:
7.1 Orientation Form
CONSTRUCTION SITE SAFETY ORIENTATION

HASELDEN CONSTRUCTION SAFETY REQUIREMENTS

All workers onsite are required to review the following safety requirements. Signing in and attending the orientations confirms your understanding and willingness to abide by the below items. All contractors are responsible for verifying that workers are familiar with these requirements, including lower tier subcontractor employees, if used.

ALL PROJECTS

**Occupational Safety and Health Administration Requirements (OSHA).** OSHA Standards for Construction and General Industry are in effect and enforced by Haselden Construction. OSHA regulations are the minimum requirements for safety. Other more stringent requirements do apply and will be enforced by Haselden Construction.

**I Got Your 6.** Every worker is responsible to work safely. All personnel have the authority and responsibility to challenge others to work safely. Workers will be recognized for safe behaviors.

**Emergency Reporting.** Emergencies, including the need for emergency medical services, must be reported by dialing the emergency number assigned to the site location. HCL Project Manager and/or HCL Site Representative(s) must be contacted immediately.

**Incident Reporting and Investigation.** Bodily injury, property damage incidents, and near misses must be immediately reported to Haselden Project Management. This does not relieve construction subcontractors of Occupational Safety and Health Administration (OSHA) or insurance carrier reporting requirements. Subcontractors must conduct an incident investigation and submit a report within 24 hours to HC.

**Job Site Inspections.** Every company is responsible for conducting jobsite safety inspections and for enforcing environment, safety, and health (ES&H) requirements on the jobsite. Additionally, representatives of Haselden Safety Department will perform inspections. Inspectors have the authority to stop work if imminent safety and health hazards are identified or safe work practices are not being utilized. Immediate corrective actions are required for hazards identified as presenting medium or high risk as determined by HC.

**Fire and Emergency Evacuation.** In the event of a fire alarm or other emergency requiring building evacuation, the subcontractor must exit the facility in a prompt and orderly manner. Report to the designated assembly area and report information regarding the event to the facility building emergency coordinator. See Muster Points Below.

**Unloading Trucks.** Keep clear of trucks being unloaded. Ladders must be used to access truck beds. Ladders must extend 3 ft. above truck bed.

**Authorized Work Areas.** The contractor must only access the specific areas within their scope. Contractors may not enter Limited Access Areas, Fall zones for steel erection and Falling object zones for work such as masonry, scaffolding, and concrete forming.

**Emergency Access.** A clear exit path of at least 44 inches must be maintained to exits for indoor projects. Emergency access routes must be kept clear for external responders.

**High Winds and Severe Weather.** Crane operations will stop when gusts reach 35 mph. Monitor site conditions and material storage when wind speeds increase to prevent damage to building and material. Seek shelter during storms.

**Wildfire.** Effective controls must be employed to prevent wildfire. Open fires are prohibited.

**Cell Phones.** No cell phones use while operating equipment. Park equipment before use. No headphone use on jobsite. Radios or boom boxes are not permitted.
**Asbestos-Containing Materials (ACB).** If and ACBs or other hazards are discovered or you think it might be an ACB sop work in that area and contact HC management.

**Proper Lifting.** Use proper lifting techniques. Perform daily stretch and flex. Use mechanical means of lifting whenever possible. Get help from a coworker is necessary.

**Personal Protective Equipment.** Minimum PPE to access and work on site consists of safety glasses, hardhats, ANSI Type II safety vests and suitable work boots. Additional PPE may be required based on job-specific hazards. Prescription safety glasses must have side shields. Hoodies and other hats are not permitted to be worn under a hardhat.

**Noise Hazards.** If a noise hazard is above 85 dB hearing protection is required. Circular saw is at 83-95 dB

**Respiratory Protection.** Engineering controls must be used first to reduce hazards, these include vacuums, fans, and wet methods. If workers are using respirators their company must have a respiratory protection program and have everything in place per OSHA before the worker can wear it.

**Silica Hazards.** Hazardous respirable silica is generated by sandblasting, sweeping, sanding, and concrete and masonry cutting, grinding, drilling, bushing, and mixing. Respirable silica is known to cause silicosis and cancer. HEPA filter vacuums and other methods should be used to trap the particles.

**Confined Spaces.** All confined spaces must be located on a site map. All permit required confined spaces must be labeled and have access restricted. Before workers access confined spaces permits and plans must be submitted, reviewed and approved by HC.

**Excavation.** A competent worker must perform daily inspections of the excavation. The excavation must also be inspected after weather events or other hazard increasing events. Locates must be marked before digging begins. Ladders must be used to access excavations of 4 feet or deeper. Excavations of 6 feet or deeper must have fall protection in place around it.

**Operating Equipment.** All equipment must be in new or like new condition. Operating equipment must be equipped with a rollover protection system, seatbelts, and functioning back-up alarms. Operator must perform a detailed inspection every day the equipment is used. They must also perform a 360 inspection every time they come back to the equipment. The subcontractor must provide experienced and qualified operating staff. Fire extinguishers must be provided. Seatbelts must be worn at all times. Don’t operate the equipment unless you are certified to operate it.

**Aerial Lift.** Operators of aerial lifts must be trained and experienced in the use of the equipment. Areas surrounding the elevated work must be marked with signs/barriers to prevent inadvertent entry under the elevated activities. PFAS must be used when on lift with a retractable lanyard. Standing on the rails is prohibited.

**Forklifts.** No rigging directly to the forks. A fork mounted lifting hook must be used.

**Cranes, Hoisting, and Rigging.** Cranes must be properly inspected, certified, and maintained. Crane operators must be certified to operate the crane being used. Qualified riggers using properly rated components must perform rigging. Tag lines must be used to control loads during lifts. Workers are not permitted beneath the suspended loads. Use whistles when load fly overhead. A written lift plan is required for critical and/or complex lifts, such as multiple crane lifts.

**Fall Protection.** Fall protection begins at 6 feet. 100% fall protection at all times. Handrails 42in +/- 3in. Mid-rail half way in-between. Calculate fall distance to make sure the system you are using will keep you from hitting the ground. Make sure to consider swing fall hazards. Anchor points should be rated for 5000lbs. Make sure to always tie off above your head. Before using a PFAS make sure there is a rescue plan in place which will allow for prompt rescue. 911 is not a rescue plan.

**Scaffold Work.** Scaffolding must be installed and inspected by a competent person daily and signed off on a tag at each access point. Fall protection is required on scaffolding starting at 4 feet. Handrails are preferred first, if that is not possible use a PFAS, remember to calculate fall distance. Wheels must be locked on scaffold when workers are on it.

**Ladder Work.** All ladders must be inspected before use for damage and that labels are legible. Three points of contact required when climbing and descending a ladder. No carrying tools up a ladder. Extension ladders: setup at a 4:1 ratio, secured top and bottom, and extend above upper landing 3 feet. Step Ladders: All legs must be on sturdy ground, must be open every time it is used, and do not stand on last two steps.
Lockout/Tagout. The contractors must comply with OSHA and HCL lockout/tagout (LO/TO) requirements. LO/TO of any systems must be coordinated with the HC Project Management.

Electrical Hazards. Portable power tools and other electrical equipment must be GFCI protected. Cords must be heavy duty rated for construction and/or a minimum 12 gauge. Cords may not be repaired. Cords should not be suspended a conductive material and should not pose a tripping hazard. Damaged cords and tools should be taken out of service, including grounding prongs.

Power and Hand Tools. If the manufacture provided a handle with the tool it must be used. Guards are never to be removed or bypassed. Tools should be in new or like new condition. Tools should not be modified from its original use.

Powder-Actuated Tools. Post warning signs when powder-actuated tools are in use and must be located within 50 feet of the area where the tool is being used. Do not place hands or fingers over the front muzzle end of the tool. Shields must be in place. Wear appropriate hearing and eye protection. Powder-actuated tools must be left unloaded when stored. Users must be trained prior to using the tool. Dispose of misfired load properly. Do not leave tools laying around the jobsite.

Hot Work. A Hot Work Permit must be obtained prior to hot work or spark-producing activities. A 10 lb. ABC fire extinguisher and a fire watch is required at minimum. Fire watch to remain 30mins after the activity has been completed. All temporary heaters must be approved by HC project team.

Hazardous Materials. Every product on site must have a Safety Data Sheet (SDS). Each company must maintain the SDS for the products their company brings on site. Haselden must a copy of each company SDS.

Aboveground Storage Tanks. Aboveground storage tanks are not permitted on site. Mobile external fuel tanks are allowing on trucks are trailers, but not to be left on site.

Plan of the Day (POD). Each company must submit their POD for the next day to the HC project team by 2:00pm the previous day. POD will consist of tasks for the next day and the associated job hazard analysis (JHA).

<table>
<thead>
<tr>
<th>PROJECT-SPECIFIC SAFE WORK PRACTICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Hours</td>
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<tr>
<td>Parking</td>
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<tr>
<td>Muster Points</td>
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<tr>
<td>Smoking</td>
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<tr>
<td>Food and Break Areas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENVIRONMENTAL PROTECTION WORK PRACTICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Management. Haselden Construction is a proud member of the Colorado Stormwater Excellence Program (CSEP). Adherence to this program shows the state and the EPA our commitment to protecting the environment.</td>
</tr>
<tr>
<td>Contractors Must Not. Allow sediment to leave the site perimeter, damaged or bypass environmental protection controls, or mismanaged chemical storage and use. Trash and debris must be cleaned up during and after every shift.</td>
</tr>
<tr>
<td>Damaged BMP. If you see a damaged BMP please report it so that it can be repaired or replaced.</td>
</tr>
</tbody>
</table>
1.0 Purpose

1.1 To provide uniformity and identify time of retention for Haselden safety and related records.

2.0 Scope

2.1 All Haselden Projects must comply with this program in its entirety.

3.0 Definitions

3.1 **Analyses** — compilations of data or statistical studies of employee medical and exposure records that concern an employee's working conditions or workplace.

3.2 **Employee**- a current employee a former employee, or an employee being assigned or transferred to work where there will be exposure to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee’s legal representative may directly exercise all the employees’ rights.

3.3 **Employee exposure record**- a record containing any of the following kinds of information: environmental monitoring results, biological monitoring results, or Safety Data Sheets.

3.4 **Employee medical record**- means a record containing the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel or technician. e.g. Lab results, X-rays, First Aid Records, etc.

3.5 **Employer**- means a current employer, a former employer, or a successor employer.

3.6 **Record**- means any item, collection, or grouping or information regardless of the form or process by which it is maintained. (ex. Paper document, microfiche, microfilm, X-ray film, or computer file.)

4.0 Reference Documents

4.1 29 CFR 1910.1020
5.0 Responsibilities

5.1 Site Superintendent

5.1.1 Has the overall responsibility for proper retention of all Environmental, Health and Safety documents.

5.2 Director of Safety and Health or Designee

5.2.1 Is responsible for periodically auditing the effectiveness of this program.

6.0 Implementation

6.1 Retain all Haselden-related EHS documents and records including:

6.1.1 Site-Specific EHS Plan

6.1.2 Emergency Response Plan

6.1.3 Substance Abuse Policy

6.1.4 Progressive Disciplinary Plan

6.1.5 Employee Recognition Plan

6.1.6 Mentoring Plan

6.1.7 Training Documents:

6.1.7.1 Site-Specific Orientation

6.1.7.2 Foremen / Supervisor Training

6.1.7.3 Specific Equipment Training (Aerial Lift, Forklift, Crane, Earth Moving Equipment, etc.)

6.1.7.4 OSHA 10-hour Training for Supervisors

6.1.7.5 First-Aid / CPR for selected personnel

6.1.8 Equipment Inspection Records:

6.1.8.1 Aerial lifts

6.1.8.2 Cranes and other mobile equipment

6.1.8.3 Fall Protection equipment (harness, lanyards, etc.)

6.1.8.4 Rigging and hoisting equipment

6.1.8.5 Electrical tools and equipment
6.1.8.6 Ladders

6.1.8.7 Scaffolding

6.1.8.8 Portable powered hand tools

6.1.9 Meeting Minutes / Audits / Field Inspections:

6.1.9.1 Safety meeting minutes, including attendance

6.1.9.2 Completed JSAs

6.1.9.3 Behavior observations

6.1.9.4 Completed audits

6.1.9.5 Inspection finding logs and follow-up records

6.1.10 EHS Statistics and Metrics will be retained for the life of the project plus 8 years thereafter.

6.1.11 All Haselden-related EHS employee medical and health monitoring records will be retained for the term of employment for the employee with the company plus 30 years thereafter.

6.1.11.1 Employee pre-hire physicals.

6.1.11.2 Respiratory physicals for respirator use including pulmonary function tests, X-ray results, fit test and TB screening results.

6.1.11.3 Workers compensation claims documentation.

6.1.11.4 Other medical documentation as described per OSHA and other Federal Regulations.

7.0 Attachments:

7.1 N/A
1.0 Purpose

1.1 To eliminate or minimize employee exposure to respirable silica.

2.0 Scope

2.1 This program is written to comply with OSHA’s expanded standard, 29CFR 1926.1153, Respirable Crystalline Silica, published March 25, 2016. It shall provide the following:

2.1.1 Prevent exposure to levels of respirable silica that exceed the OSHA PEL.

2.1.2 Provide for engineering controls to reduce the level of respirable silica.

2.1.3 Coordinate respirator use required by this policy with the Haselden Respiratory Protection Plan

2.2 Crystalline silica (Silica) is found in the earth’s crust and is present in many materials that are common to the construction industry, such as rock, sand and gravel. Silica is used in a variety of building products, like asphalt, masonry brick and block, grout, mortar, stone, cement board siding, spray fireproofing, sheetrock, and tile. Silica dust is released when these materials are cut, crushed, or abraded. Work activities that place harmful silica particles in the employee’s breathing zone include asphalt milling and sawing, concrete demolition, hammer drilling, concrete grinding, chipping and bushing, wall and floor scabbling, concrete saw cutting, sawing or grinding brick, block, tile and stone, mixing mortar and fireproofing, rock drilling and crushing, concrete recycling, and sweeping dried concrete slurry and concrete dust.

2.3 These varied operations are an everyday part of construction work, and create particles of different sizes. Larger sized particles of silica are stopped from harming people by the body’s response and defense mechanisms which expel silica by reflexive coughing and sneezing, or by transporting silica that becomes trapped in the respiratory system out through the nasal passage by cilia action and mucous.

2.4 Small sized particles, called respirable silica, avoid the body’s defenses and penetrate deep into the lungs. These particles are too small to be seen, and adhere to the tissues that permit the exchange of oxygen and carbon dioxide between the lungs and the blood stream. The body’s immune system attacks the adhered silica, causing a buildup of scar tissue that makes the gas exchange increasingly difficult. This reduces the ability of the body to take oxygen into the blood stream and remove carbon dioxide.
2.5 Diseases that can be caused by silica include lung cancer, chronic obstructive pulmonary disease (COPD), tuberculosis, silicosis, and kidney disease. Depending on an individual’s exposure to respirable silica, these diseases can develop in a period of as short as five years. Most individuals who are regularly exposed to silica levels over permissible limits may begin to see symptoms after ten to twenty years of exposure.

2.6 Employees who are overexposed to respirable silica experience shortness of breath as the initial symptom. Kidney failure is associated with silicosis. Smoking accelerates the development of silica related diseases, which continue to worsen over time, shortening an employee’s working career, often resulting in death.

2.7 Respirable silica can be reduced to the point where employee exposure is below harmful levels. This is done through a process that includes exposure assessment, (identifying the hazard), providing engineering controls (use of special tools and equipment), employee training, respirator use for trained and qualified employees, and medical surveillance.

3.0 Definitions

3.1 **Action Level:** A concentration of airborne respirable crystalline silica of 25 µg/m$^3$, (micrograms per cubic meter), calculated as an 8-hour Time Weighted Average (TWA). This level of exposure has not been determined as harmful to employees.

3.2 **Air Monitoring Data:** Obtained when a trained specialist, such as a certified industrial hygienist, uses a sampling device to trap respirable silica particles from the air in the work environment. Samples are sent to an accredited laboratory for analysis. The trained specialist performs evaluation of the lab results and prepares recommendations for controlling respirable silica hazards.

3.3 **Competent Person:** An individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.4 **Employee Exposure:** The exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

3.5 **Feasible Engineering Control:** A manufacturer supplied tool or attachment that removes respirable silica through wet methods (a stream of water designed to control silica dust created by the cutting action based on the size and speed of the tool) or local exhaust ventilation that removes respirable silica at the point where it is being generated and traps it in a HEPA filter.

3.6 **HC Table:** Silica Controls Equipment or PPE for Specific Tasks – A table that lists specific work activities that generate respirable silica, along with engineering controls and respiratory protection, if applicable, that are required to control respirable silica hazards. This table was prepared for ease of use and meets or exceeds the requirements of Table 1 contained in 29 CFR 1153 and must be fully and properly implemented to avoid a respirable silica overexposure to employees or a possible OSHA citation. The HC Table shows typical work activities that may
be performed by the contractor’s employees, but does not include all work activities covered in 29 CFR 1926.1153(c)(1) Table 1.

3.7 **High-Efficiency Particulate Air [HEPA] Filter:** A filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter or larger.

3.8 **Objective Data:** Information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

3.9 **Permissible Exposure Limit (PEL):** The 8-hour TWA PEL is the highest level of exposure an employee may be exposed to without incurring the risk of adverse health effects. TWA (time weighted average) is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.

3.10 **Physician or Other Licensed Health Care Professional (PLHCP):** An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by the Standard.

3.11 **Respirable Crystalline Silica:** Quartz, Cristobalite, and/or Tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality – Particle Size Fraction Definitions for Health-Related Sampling.

3.12 **Specialist:** An American Board-Certified Specialist in Pulmonary Disease or an American Board-Certified Specialist in Occupational Medicine.

3.13 **Standard:** A standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment; CFR 1926.1153 Respirable Crystalline Silica, including Appendices.

4.0 **Reference Documents**

4.1 29 CFR 1910.134 Respiratory Protection, including Appendices.

4.2 29 CFR 1926.1153 Respirable Crystalline Silica, including Appendices.


4.5 International Organization for Standardization (ISO) 7708:1995: Air Quality – Particle Size Fraction Definitions for Health-Related Sampling
4.6 HC Respiratory Protection Program

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Shall be responsible for implementing this procedure.

5.1.2 Assists the safety department in identifying and evaluating silica hazards in the workplace.

5.1.3 Ensures employees who are authorized to work on operations where exposure to respirable silica exists or is created have been properly trained in accordance with this procedure.

5.1.4 Ensures that employees have been qualified and trained to wear respirators, if applicable.

5.1.5 Ensures that employees in the Haselden Respiratory Protection Plan have received baseline medical evaluations before exposure to respirable silica occurs.

5.1.6 Ensures that trained employees receive periodic medical examinations when exposure to respirable silica continues.

5.1.7 Ensures that a job specific respirable silica control plan has been written.

5.1.8 Provides tools, material, equipment and personal protective equipment identified in this procedure.

5.1.9 Ensures that a JHA is prepared, reviewed, and signed by employees for each activity where employees are exposed to respirable silica.

5.1.10 Records in the payroll system the work hours each employee spends in work activities where they are exposed to respirable silica. Reports the type of work activities so recordkeeping requirements can be met.

5.2 Safety Department:

5.2.1 Identifies and evaluates silica hazards in the workplace.

5.2.2 Provides training for employees who are authorized to work on operations where respirable silica exists or is created.

5.2.3 Provides employees with respiratory protection training if respirators are to be used.

5.2.4 Schedules silica baseline medical evaluations and respirator medical evaluations and fit tests for employees.

5.2.5 Schedules periodic medical examinations for employees in the Haselden Respiratory Protection Plan.
5.2.6 Maintains medical records required by this policy.

5.2.7 Prepares or assists jobsite staff in preparing a job specific respirable silica control plan.

5.2.8 Designates a competent person to make frequent and regular inspections of job sites, materials, and equipment to verify implementation of the written exposure control plan.

5.2.9 Ensures that the PLHCP has a copy of the OSHA Standard, and the information that the Standard requires for the employer to provide to the PLHCP.

5.2.10 Performs employee notification of exposure assessment results.

5.2.11 Maintains medical and training records required by the Standard.

5.2.12 Reviews this policy at least annually and makes required updates.

5.3 Subcontractors

5.3.1 Subcontractors are required to fully comply with this policy.

5.3.1.1 If a subcontractor does not have a full written policy that complies with 29 CFR 1926.1153, this Haselden policy may be adopted by the subcontractor.

5.3.1.2 If a subcontractor performs work that is not covered by the HC Table or OSHA Table 1, objective data or workplace sampling is required and shall serve as the basis for establishing engineering controls, respiratory protection if required, and work procedures.

5.3.1.2.1 If the subcontractor does not produce acceptable objective data or workplace sampling information, Haselden may order or perform workplace sampling for the account of the subcontractor.

6.0 Implementation

6.1 Preventing Exposure to Respirable Silica

6.1.1 Priority shall be given to using Table 1 of the Standard to the greatest extent possible. Following the Haselden table entitled “Silica Controls Equipment or PPE for Specific Tasks” (the HC Table) will ensure compliance with Table 1 of the Standard.

6.1.2 Where an employee performs more than one task on the HC Table during the course of a shift, the requirements for respiratory protection are calculated as follows: If and the total duration of all tasks combined is more than four hours, refer to the HC Table. Respiratory protection required for each task shall be that required by the Table for performing the task for more than four hours.
6.1.3 When implementing the control measures specified in 29 CFR 1926.1153(c)(1) Table 1, provide:

6.1.3.1 For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust.

6.1.3.2 For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust.

6.1.4 For measures implemented that require an enclosed cab or booth, ensure that the enclosed cab or booth:

6.1.4.1 Is maintained as free as practicable from settled dust.

6.1.4.2 Has door seals and closing mechanisms that work properly.

6.1.4.3 Has gaskets and seals that are in good condition and working properly.

6.1.4.4 Is under positive pressure maintained through continuous delivery of fresh air.

6.1.4.5 Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (e.g., MERV-16 or better).

6.1.4.6 Has heating and cooling capabilities.

6.1.5 For tasks not listed in either 29 CFR 1926.1153(c)(1) Table 1 or the HC Table, or where the employer cannot fully and properly implement the engineering controls, work practices, and respiratory protection in 29 CFR 1926.1153(c)(1) Table 1 or the HC Table, alternative exposure control methods shall be used as follows:

6.1.5.1 The employer shall develop procedures to ensure that no employee is exposed to an airborne concentration of respirable crystalline silica that exceeds the PEL, 50 µg/m³, calculated as an 8-hour TWA.

6.1.5.2 The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level of 25 µg/m³ by air sampling in accordance with either the performance option or the scheduled monitoring option.

6.1.5.3 Performance option. The employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

6.1.5.4 Scheduled monitoring option. The employer shall perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where
several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

6.1.5.5 If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

6.1.5.6 Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring within six months of the most recent monitoring.

6.1.5.7 Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the employer shall repeat such monitoring within three months of the most recent monitoring.

6.1.5.8 Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the employer shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

6.1.5.9 Reassessment of exposures. The employer shall reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

6.1.6 Methods of sample analysis. The employer shall ensure that all samples taken to satisfy the monitoring requirements are evaluated by an accredited laboratory that analyzes air samples for respirable crystalline silica in accordance with the procedures in Appendix A of the OSHA Standard 1926.1153.

6.1.7 Employee notification of assessment results. Within five working days after completing an exposure assessment, the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.

6.1.8 Whenever an exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.
6.1.9 Observation of monitoring. Where air monitoring is performed, the employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.

6.1.10 When observation of monitoring requires entry into an area where the use of protective clothing equipment or training is required for any workplace hazard, the employer shall provide the observer with protective clothing, equipment and training and shall ensure that the observer uses it.

6.1.11 Feasible engineering controls must be used first to control respirable silica. If engineering controls do not reduce respirable silica to levels below the PEL, the employee must wear a respirator with an assigned protection factor that reduces the exposure level below the PEL.

6.1.12 Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer shall still use them to reduce employee exposure to the lowest feasible level and in addition shall use respiratory protection.

6.1.13 Respiratory protection is required:

6.1.13.1 Where specified by the HC Table of OSHA Table 1; or

6.1.13.2 For tasks not listed in the HC Table or OSHA Table 1, or where the employer cannot fully and properly implement the engineering controls, work practices, and respiratory protection described in the HC Table.

6.1.13.3 Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls.

6.1.13.4 Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible.

6.1.13.5 During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.

6.1.14 Respirator use must comply with Haselden’s Respiratory Protection Program. Employers must have a written respiratory protection plan that complies with 29 CFR 1910.134, Respiratory Protection.

6.1.15 Housekeeping. Dry sweeping of silica containing debris is not permitted.

6.1.16 Compressed air shall not be used to clean clothing or surfaces that contain silica containing debris.

6.2 Written Respirable Silica Control Plan
6.2.1 A written, job specific exposure control plan shall be prepared that contains at least the following elements:

6.2.1.1 A description of the tasks in the workplace that involve exposure to respirable crystalline silica.

6.2.1.2 A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task.

6.2.1.3 A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica.

6.2.1.4 A description of the procedures used to restrict access to work areas, when necessary, and to minimize the number of employees exposed to respirable crystalline silica and their level of exposure. These procedures shall include means of limiting employee exposure to respirable silica generated by other employers.

6.2.2 The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.

6.2.3 The employer shall make the written exposure control plan readily available for examination and copying, upon their request, to each employee exposed to respirable silica hazards, or to their designated representative.

6.3 Competent Person. The employer shall designate a competent person to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.

6.4 Medical surveillance. The employer shall make medical surveillance available for each employee who will be required to use a respirator for 30 or more days per year.

6.4.1 The employer shall ensure that all medical examinations and procedures are performed by a PLHCP.

6.4.2 An initial examination for Haselden employees in the Respiratory Protection Plan shall be performed before the initial work assignment, unless the employee has received a medical examination meeting the requirements of the Standard within the last 3 years. The requirements of the 29 CFR 1926.1153 shall be followed. A brief description of the initial examination follows:

6.4.2.1 A medical and work history, including past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system shall be provided to the PLHCP that includes;

6.4.2.2 Any history of respiratory system disorders.

6.4.2.3 A physical examination with special emphasis on the respiratory system.
6.4.2.4 A chest X-ray.

6.4.2.5 A pulmonary function test administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course.

6.4.2.6 Testing for latent tuberculosis infection.

6.4.2.7 Any other tests deemed appropriate by the PLHCP.

6.5 Periodic examinations

6.5.1 The employer shall make available medical examinations that include the procedures described in paragraph 6.4 at least every three years, or more frequently if recommended by the PLHCP. The latent tuberculosis test is required only once, during the initial examination, unless recommended again by the PLHCP.

6.6 Information provided to the PLHCP

6.6.1 The employer shall ensure that the examining PLHCP has a copy of the OSHA standard, and shall provide the PLHCP with the following information:

6.6.1.1 A description of the employee’s former, current, and anticipated duties as they relate to the employee’s occupational exposure to respirable crystalline silica.

6.6.1.2 The employee’s former, current, and anticipated levels of occupational exposure to respirable crystalline silica.

6.6.1.3 A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment;

6.6.1.4 Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

6.7 PLHCP’s written medical report for the employee

6.7.1 The employer shall ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The requirements of the 29 CFR 1926.1153 shall be followed. A brief description of the written medical report follows:

6.7.2 A statement indicating the results of the medical examination.

6.7.2.1 Any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica
6.7.2.2 Any medical conditions that require further evaluation or treatment.

6.7.2.3 Any recommended limitations on the employee's use of respirators.

6.7.2.4 Any recommended limitations on the employee's exposure to respirable crystalline silica.

6.7.2.5 A statement by the PLHCP that the employee should be examined by a specialist, if deemed appropriate.

6.8 PLHCP’s written medical opinion for the employer

6.8.1 The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

6.8.1.1 The date of the examination.

6.8.1.2 A statement that the examination has met the requirements of 29 CFR 1926.1153.

6.8.1.3 Any recommended limitations on the employee’s use of respirators.

6.8.1.4 If the employee provides written authorization, the written opinion shall also contain either or both of the following:

6.8.1.4.1 Any recommended limitations on the employee’s exposure to respirable crystalline silica.

6.8.1.4.2 A statement by the PLHCP that the employee should be examined by a specialist, if deemed appropriate.

6.8.2 The employer shall ensure that each employee receives a copy of the written medical opinion within 30 days of each medical examination performed.

6.8.3 Additional examinations. The employer shall make available a medical examination by a specialist within 30 days after receiving the PLHCP’s written opinion indicating that an employee should be examined by a specialist.

6.8.4 The employer shall ensure that the examining specialist is provided with all of the information that the employer is obligated to provide to the PLHCP in paragraph 6.6.

6.8.5 The employer shall ensure that the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination.

6.8.6 The employer shall obtain a written opinion from the specialist within 30 days of the medical examination.
6.9 Communication of respirable crystalline silica hazards to employees

6.9.1 Hazard communication. The employer shall include respirable crystalline silica in the program established to comply with the hazard communication standard (HCS) (29 CFR 1910.1200).

6.9.2 The employer shall ensure that each employee has access to labels on containers of crystalline silica and safety data sheets, and is trained in accordance with the provisions of HCS before being exposed to the hazards of respirable silica.

6.9.3 The employer shall ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.

6.10 Employee information and training

6.10.1 The employer shall ensure that each employee covered by this policy can demonstrate knowledge and understanding of at least the following:

6.10.1.1 The health hazards associated with exposure to respirable crystalline silica.

6.10.1.2 Specific tasks in the workplace that could result in exposure to respirable crystalline silica.

6.10.1.3 Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used.

6.10.1.4 The contents 29 CFR 1926.1153. Haselden employees shall be trained in the contents of this HC Policy.

6.10.1.5 The identity of the competent person designated by the employer.

6.10.1.6 The purpose and a description of the medical surveillance program.

6.10.2 The employer shall make a copy of this 29 CFR 1926.1153 readily available to each employee exposed to respirable silica hazards in the workplace. Affected Haselden employees shall be provided with a copy of this HC Policy.

6.11 Recordkeeping

6.11.1 Air monitoring data. The employer shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica. This record shall include at least the following information:

6.11.1.1 The date of measurement for each sample taken.
6.11.1.2 The task monitored.

6.11.1.3 Sampling and analytical methods used.

6.11.1.4 Number, duration, and results of samples taken.

6.11.1.5 Identity of the laboratory that performed the analysis.

6.11.1.6 Type of personal protective equipment, such as respirators, worn by the employees monitored.

6.11.1.7 Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

6.11.1.8 The employer shall ensure that exposure records are maintained and made available in accordance with 29 CFR 1910.1020.

6.11.2 Objective data. The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements 29 CFR 1926.1153. This record shall include at least the following information:

6.11.2.1 The crystalline silica-containing material in question.

6.11.2.2 The source of the objective data.

6.11.2.3 The testing protocol and results of testing.

6.11.2.4 A description of the process, task, or activity on which the objective data were based.

6.11.2.5 Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

6.11.2.6 The employer shall ensure that objective data are maintained and made available in accordance with 29 CFR 1910.1020.

6.11.3 Medical surveillance. The employer shall make and maintain an accurate record for each employee covered by medical surveillance under this policy. The record shall include the following information about the employee:

6.11.3.1 Name and social security number.

6.11.3.2 A copy of the PLHCPs’ and specialists’ written medical opinions.

6.11.3.3 A copy of the information provided to the PLHCPs and specialists.

6.11.3.4 The employer shall ensure that medical records are maintained and made available in accordance with 29 CFR 1910.1020.

6.11.4 Payroll records. Haselden shall track employee time through the payroll system whenever a Haselden employee is engaged in activities where
consistent exposure to respirable silica occurs and for employees in the Haselden Respiratory Protection Plan. A description of tasks is required in order to identify levels of exposure. This information is required in order to maintain work history records as required by paragraphs 6.4 and 6.6.

7.0 Attachments

7.1 Silica Controls Equipment or PPE for Specific Tasks
7.2 Sample Information Provided to the PLHCP
7.3 Sample Job Specific Respirable Silica Control Plan
7.4 Instructions for Respirator Timekeeping and Reporting
### Controles de Silice
#### Equipo Mecánico o de Protección Personal para Tareas Específicas

<table>
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<tr>
<th>Herramienta</th>
<th>Control de Polvo</th>
<th>Recomendación</th>
<th>Notas</th>
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</thead>
<tbody>
<tr>
<td>Aspiradoras comerciales, si usadas, serán equipadas con filtro HEPA 0.3μm 99.7% eficiente y SOLO serán usadas cuando respiradores NO SEAN REQUERIDOS</td>
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<tr>
<td>1. Respirador APF 10 requerido para todo trabajo adentro</td>
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<td>2. Respirador APF 10 requerido hasta 4 horas de trabajo</td>
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<td>3. Respirador APF 20 requerido después de 4 horas de trabajo</td>
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<td>4. Respirador APF 20 requerido después de 8 horas de trabajo</td>
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<td>5. Respirador APF 25 requerido después de 4 horas de todo trabajo</td>
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<td>6. Respirador APF 10 requerido después de 8 horas de trabajo</td>
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<td>7. Respirador APF 25 requerido después de 8 horas de todo trabajo</td>
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<td>8. Respirador APF 10 requerido después de 12 horas de todo trabajo</td>
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<td>9. Respirador APF 20 requerido después de 12 horas de todo trabajo</td>
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<td>10. Respirador APF 25 requerido después de 12 horas de todo trabajo</td>
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<td>11. Respirador APF 10 requerido después de 16 horas de todo trabajo</td>
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<td>12. Respirador APF 20 requerido después de 16 horas de todo trabajo</td>
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<tr>
<td>13. Respirador APF 25 requerido después de 16 horas de todo trabajo</td>
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</table>

- **Presupuesto con máquinas de polvo:**
  - **Tipo:**
    - **Sudarios y sistema de colección de polvo HEPA con flujo de aire recomendado por el fabricante.**
    - **NOTA:**
      - Todos los respiradores APF 25 requieren sistemas de protección de aire continuo integrado.
      - Los sistemas de protección de aire continuo integrado deben cumplir con las regulaciones de OSHA.

- **Sudarios y sistema de colección de polvo HEPA con flujo de aire recomendado por el fabricante:**
  - **NOTA:**
    - Los sistemas de protección de aire continuo integrado deben cumplir con las regulaciones de OSHA.

- **Todas las herramientas y aspiradoras de polvo serán usadas de acuerdo con las instrucciones del fabricante.**
  - **NOTA:**
    - No hacerlo es violación de las reglas de OSHA.

- **Información adicional:**
  - **NOTA:**
    - Los montajes de polvo y aspiradoras de polvo serán usadas de acuerdo con las instrucciones del fabricante.
    - Todos los respiradores APF 25 requieren sistemas de protección de aire continuo integrado.

- **Control de polvo:**
  - **NOTA:**
    - Todos los respiradores APF 25 requieren sistemas de protección de aire continuo integrado.
Silica Controls
Equipment or PPE for Specific Tasks

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<th>Activity</th>
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<th>Respirator</th>
<th>Notes</th>
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<tr>
<td>Floor Sweeping</td>
<td>Broom</td>
<td>Sweeping Compound or wet methods</td>
<td>None</td>
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<tr>
<td>Chipping</td>
<td>Electric chipping hammer</td>
<td>Attached shroud and HEPA dust collection system</td>
<td>OSHA Table I, (x)</td>
<td></td>
</tr>
<tr>
<td>Chipping</td>
<td>Pneumatic chipping hammer</td>
<td>Continuous water stream at bit point</td>
<td>OSHA Table I, (x)</td>
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<tr>
<td>Bushing</td>
<td>Electric bushing hammer</td>
<td>Attached shroud and HEPA dust collection system</td>
<td>OSHA Table I, (x)</td>
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<tr>
<td>Bushing</td>
<td>Pneumatic bushing hammer</td>
<td>Continuous water stream at bit point</td>
<td>OSHA Table I, (x)</td>
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<tr>
<td>Scabbling</td>
<td>Pneumatic paving breaker</td>
<td>Continuous water stream at bit point</td>
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<td>Pavement Breaking (Hand)</td>
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<td>Rock Drilling (Hand)</td>
<td>Shot blaster or bead blaster</td>
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<td>Floor grinding</td>
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<td>Attached shroud and HEPA dust collection system</td>
<td>OSHA Table I, (xii)</td>
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<tr>
<td>Floor grinding</td>
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<td>Attached shroud and HEPA dust collection system with air flow as required by the manufacturer. Use a HEPA vac to remove loose dust from the floor between passes of grinder.</td>
<td>OSHA Table I, (xii)</td>
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<td>Vertical grinding</td>
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<td>Overhead grinding</td>
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<tr>
<td>Cutting cement board</td>
<td>Hand held saw with blade diameter 8” or less</td>
<td>Attached shroud and HEPA dust collection system. This work must not be done indoors.</td>
<td>OSHA Table I, (iv)</td>
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<tr>
<td>Core drilling</td>
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<td>OSHA Table I, (iv)</td>
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<tr>
<td>Cured slab sawing</td>
<td>Fuel powered walk behind saw</td>
<td>Integrated, continuous feed water delivery system</td>
<td>OSHA Table I, (iv)</td>
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<td>Stationary Masonry cutting</td>
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<td>Integrated, continuous feed water delivery system</td>
<td>OSHA Table I, (iv)</td>
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<tr>
<td>Tuck pointing (Hand held mortar sawing)</td>
<td>Electric masonry saw</td>
<td>Integrated, continuous feed water delivery system, or Attached shroud and HEPA dust collection system</td>
<td>OSHA Table I, (xi)</td>
<td></td>
</tr>
<tr>
<td>Hand held concrete sawing</td>
<td>Demo saw, fuel or electric powered</td>
<td>Integrated, continuous feed water delivery system, or Attached shroud and HEPA dust collection system</td>
<td>OSHA Table I, (xi)</td>
<td></td>
</tr>
<tr>
<td>Driveable saw Outdoors</td>
<td>Driveable saw</td>
<td>Integrated, continuous feed water delivery system</td>
<td>OSHA Table I, (xi)</td>
<td></td>
</tr>
<tr>
<td>Driveable saw Indoors</td>
<td>Driveable saw</td>
<td>Integrated, continuous feed water delivery system</td>
<td>OSHA Table I, (xi)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. APF 10 respirator required for all indoor work
2. APF 10 respirator required for up to 4 hours work
3. APF 10 respirator required for up to 4 hours of outdoor work
4. APF 25 respirator required after 4 hours of indoor work
5. APF 25 respirator required after 4 hours of all work
6. APF 10 is the 3M 8233 Filtering Facepiece N-100 respirator. Use a P-100 Respirator when oil is present or when using compressed air.
7. APF 25 is the 3M TR-600 Respirator with M-300 Helmet.

All tools and dust extractors must be used per the manufacturer’s instructions. Failure to do so is an OSHA violation.

Shop vacs, if used, must be equipped with a 0.3μ 99.7% efficient HEPA filter and SHALL ONLY be used when respirators ARE NOT REQUIRED.

For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust.

For tasks performed indoors or in enclosed areas, provide exhaust as needed to minimize the accumulation of visible airborne dust.
10. Will you be using any of the following items with your respirator:
   - Yes  No  a. HEPA Filters
   - Yes  No  b. Canisters (for example; gas masks)
   - Yes  No  c. Cartridges

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)
   - Yes  No  a. Escape only (no rescue)
   - Yes  No  b. Emergency Rescue only
   - Yes  No  c. Less than 5 hours per week
   - Yes  No  d. Less then 2 hours per day
   - Yes  No  e. 2 to 4 hours per day
   - Yes  No  f. Over 4 hours per day

12. During the period you are using the respirator(s), is your work effort:
   - Yes  No  a. Light (less than 200 kcal per hour)
     Examples of light work are sitting while writing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.
     If "Yes", how long does this period last during the average shift: 8 hrs. _______ mins.
   - Yes  No  b. Moderate (200 to 350 kcal per hour)
     Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.
     If "Yes", how long does this period last during the average shift: _______ hrs. _______ mins.
   - Yes  No  c. Heavy (above 350 kcal per hour)
     Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.)
     If "Yes", how long does this period last during the average shift: _______ hrs. _______ mins.

13. Yes  No  Will you be wearing protective clothing and/or equipment (other than the respirator) when you’re using your respirator.
   If "Yes", describe this protective clothing and/or equipment:
   Hard hat, safety glasses, gloves, traffic vest, face shield, rubber boots or leather work boots

14. Yes  No  Will you be working under hot conditions (temperature exceeding 77 deg. F)

15. Yes  No  Will you be working under humid conditions

16. Describe the work you’ll be doing while you’re using your respirator(s)
    Abrading, cutting, drilling and demolishing concrete

17. Describe any special or hazardous conditions you might encounter when you’re using your respirator(s)
    (for example, confined spaces, life-threatening gases):
    None

TO BE FILED IN EMPLOYEE'S MEDICAL FILE
18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator: Respirable crystalline silica
   
   Name of first toxic substance:
   Estimated maximum exposure per shift: 50 micrograms per cubic meter
   Duration of exposure per shift: 8 hours
   
   Name of second toxic substance:
   Estimated maximum exposure per shift:
   Duration of exposure per shift:
   
   Name of third toxic substance:
   Estimated maximum exposure per shift:
   Duration of exposure per shift:
   
   Name of any other toxic substances that you'll be exposed to while using your respirator(s):
   
19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example; rescue, security):
   None

Appendix D to Section 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not represent a hazard.

You should do the following:
1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U. S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, fumes, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.
1.0 Purpose

1.1 The Haselden Respiratory Protection Program (Program) outlines the minimum requirements for Haselden and subcontractors’ employees. The control of employee exposure to potential respirable contaminants and hazards will be accomplished as much as possible by accepted engineering, administrative and work practice controls. Whenever these controls are NOT feasible, during the installation/implementation of these controls or if controls are ineffective, the appropriate respirator will be used.

1.2 Employees will be exposed to respirable crystalline silica while performing demolition, concrete repair, preparation for finishes, and masonry work on this project. Respirable silica can be reduced to the point where employee exposure is below harmful levels. This is done through a process that includes exposure assessment (identifying the hazard), engineering controls (use of special tools and equipment), employee training, respirator use for trained and qualified employees, and medical surveillance.

1.3 All work performed on this project shall be in strict conformance with the Haselden Respirable Silica Hazard Control Plan (Plan), which meets or exceeds the requirements of the OSHA Substance Specific Standard for Respirable Crystalline Silica, 29 CFR 1926.1153. The HC Table, or Silica Controls Equipment or PPE for Specific Tasks, shall be followed to the greatest extent possible. When performing work in compliance with the HC Table, exposure assessment will not be required.

1.4 If silica generating activities not included in the HC Table are performed, objective data or monitoring shall be performed by the contractor doing the work.

1.5 The Haselden Respiratory Protection Program (Program) is in effect for this project. In addition, this job-specific plan includes details of the elements required by the OSHA Respiratory Protection Standard 29 CFR 1910.134. Contractors performing work where their employees are exposed to respiratory hazards shall take measures to keep contaminants from entering the breathing zone. If those measures do not reduce the level of contaminants below the Occupational Exposure Limit, employees shall be trained, medically evaluated, fit tested and provided with proper respirators selected on the basis of contaminants to which they will be exposed. The employer is required to have a written respiratory protection program that complies with the OSHA Respiratory Protection Standard.
1.6 The Plan and the Program were sent to Concentra Littleton, Concentra Ft Collins, and Concentra Centennial along with information that must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee’s ability to use a respirator, copies of 29 CFR 1153, Respirable Silica, and 29 CFR 1910.134, Respiratory Protection, were sent to the clinics as well.

1.7 Affected employees are trained in accordance with the OSHA standards and undergo a medical evaluation, chest x-ray, TB test, pulmonary function test, and are fit tested to wear the selected respirator before being allowed to commence the work.

2.0 Scope

The following information has been provided to the PLHCP:

2.1 Task type I – Cutting, grinding, chipping, sawing and bushing concrete, interior and exterior.

2.2 The type and weight of the respirator to be used by the employee;

2.2.1 3M Versaflo TR 600 Powered Air Purifying Respirator with M-300 Hood

2.3 The duration and frequency of respirator use (including use for rescue and escape);

2.3.1 Daily, 8 hours per day, 5 days per week

2.4 The expected physical work effort;

2.4.1 Moderate effort,

2.4.2 50%-75% work

2.5 Additional protective clothing and equipment to be worn;

2.5.1 Long pants, long sleeves, work boots, high visibility vest, work gloves

2.5.2 Additional clothing in cold temperatures or wet weather

2.6 Temperature and humidity extremes that may be encountered.

2.6.1 10 degrees F -95 degrees F

2.6.2 20%-50% humidity
2.7 Task Type II – Cutting, grinding, sawing, chipping and bushing concrete, interior and exterior

2.8 The types and weights of the respirators to be used by the employee;

2.8.1 3M 8233 Filtering Facepiece N-100 Respirator. This respirator is the HC standard because of its comfort, adjustability, quality, and reduced tendency to fog safety glasses.

2.8.2 Moldex 2730 and Moldex 2731 Small N-100 Respirators. These respirators are alternates to be used when the 3M 8233 does not fit an employee.

2.9 The duration and frequency of respirator use (including use for rescue and escape);

2.9.1 Daily, 8 hours per day, 5 days per week

2.10 The expected physical work effort;

2.10.1 Moderate effort

2.10.2 50%-75% work

2.11 Additional protective clothing and equipment to be worn;

2.11.1 Long pants, long sleeves, work boots, high visibility vest, work gloves

2.11.2 Additional clothing in cold temperatures or wet weather

2.12 Temperature and humidity extremes that may be encountered.

2.12.1 10 degrees F - 95 degrees F

2.12.2 20%-50% humidity

3.0 Job Specific Plan Elements

3.1 Why it may be necessary to wear a respirator:

3.1.1 OSHA requires respirators to be worn per Table 1 of OSHA regulation 29 CFR 1926.1153. The requirements of Table 1 will be met or exceeded by using engineering controls and PPE required by Haselden Construction’s Silica Control Equipment Tools and PPE (pocket card), which will be
strictly followed. This information is contained in the HC Respirable Silica Hazard Control Plan. The pocket cards have been distributed to every employee trained to wear a respirator and every supervisor trained to administer the silica and respiratory protection programs.

3.1.2 When implementing the control measures specified in Table 1, for tasks performed indoors or in enclosed areas, provide a exhaust as needed to minimize the accumulation of visible airborne dust.

3.1.3 For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust.

3.1.4 For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:

3.1.4.1 Must be maintained as free as practicable from settled dust;

3.1.4.2 Must have door gaskets, seals and latches that work properly;

3.1.4.3 Must be under positive pressure maintained through continuous delivery of fresh air;

3.1.4.4 Must have intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (e.g., MERV-16 or better); and Must have heating and cooling capabilities.

3.1.5 Where an employee performs more than one task on Table 1 during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

3.2 Other contractors will perform work that may generate respirable silica. These tasks include Concrete chipping, concrete drilling, concrete grinding, concrete sawing, cutting masonry, floor patching compound, scabbling, and excavation. Ventilation, barricades, signs or other effective means shall be used to keep employees, subcontractors
project name

and the public, who are not wearing respiratory protection, from areas where visible silica dust is present.

4.0 Site location and work activities where respirators may be used

4.1 Site Location: Project Address

4.2 Work Activities: Grinding, breaking, abrading, handling, and disposal of Portland cement concrete and cutting masonry units using tools equipped with dust extraction systems that trap respirable silica particles in HEPA filters, or that use wet methods of dust control in accordance with Table 1 of 29 CFR 1926.1153, Respirable Crystalline Silica.

5.0 Procedures for selecting respirators for use in the workplace

5.1 3M 8233 Filtering facepiece N-100 Air Purifying respirators with an Assigned Protection Factor (APF) of 10 and the 3M TR-600 Powered Air Purifying Respirator with M-300 Helmet having an APR of 25 were selected for work generating respirable silica, which will protect employees during a potential silica exposure of 5 milligrams per cubic meter (mg/m3) time weighted average. No activities will be performed that will generate respirable silica dust or total dust that exceeds these limits.

6.0 Medical evaluations of employees required to use respirators;

6.1 Medical evaluations will be performed for all employees involved in the work that are required to wear respirators.

7.0 Fit testing procedures for tight-fitting respirators;

7.1 All employees who will use the N-100 respirator will have passed the fit test administered by the Concentra clinic.

8.0 Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations.

8.1 The only emergency situation anticipated during this work is failure of the respirator. Employees are instructed to leave the work area before removing their respirator in the event of failure.

9.0 Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;

9.1 N-100 respirators will be inspected and a seal check performed before use in accordance with the manufacturer's instructions. They will be discarded at the end of the shift, or replaced sooner if they become clogged or damaged.
9.2 PAPR respirator helmets and face shields will be inspected daily before and after use for cleanliness, damage, and to ensure fit and seal. The face shield will be cleaned with alcohol wipes, and other surfaces will be cleaned with non-alcohol wipes.

9.3 PAPR pumps, filters and hoses will be checked for cleanliness and damage, and to ensure that all mating surfaces seal properly. They will be stored with intake and exhaust port caps in place or the filter will remain in place over the exhaust port. The filter will be removed, inspected and cleaned before use if necessary, and daily after use, or more frequently if the filter is changed during the shift, using a soft cloth, soap and water. The air hose will be washed in soap and water and dried daily.

10.0 Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;

10.1 Not applicable. Only air purifying respirators shall be used.

11.0 Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;

11.1 Employees have been trained in silica exposure and chemical hazards per this Site Specific Respiratory Protection Plan, the Safety Data Sheets for silica sand and paints, and the Sample Job Hazard Analysis. Employees are instructed to always wear their respirator when performing tasks that pulverize or abrade concrete, and during maintenance tasks such as servicing and cleaning equipment.

11.2 Cleanup of slurry or dust from the work area shall be performed using sweeping compound or a HEPA vacuum system. Employees will review a specific Job Hazard Analysis that indicates the job steps, hazards, and control measures to be used.

11.3 Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance;

11.4 Training has been done in accordance with the respirator manufacturer’s written instructions and training records shall be maintained.

12.0 Procedures for regularly evaluating the effectiveness of the program.

12.1 The Qualified Program Administrator has provided training, and will evaluate the effectiveness of the program as it relates to this work by work site observation and employee interviews.
13.0 Ensuring that employees who voluntarily wear respirators (excluding filtering face pieces) comply with the medical evaluation, cleaning, storage and maintenance requirements of the OSHA standard.

13.1 *Employees are trained for respirator use. Part of the training is a discussion of voluntary use. The medical evaluation form read and signed by employees includes Appendix D language from the OSHA Respiratory Standard.*

14.0 A qualified program administrator shall be designated to administer the program. The qualified administrator shall be familiar with the OSHA Respiratory Protection standard and with use and application of respirators in the particular workplace. Respiratory Protection Program evaluation shall be performed by the qualified program administrator, unless this service is provided by an outside party.

14.1 *Jeff Brown, CSP, is the Qualified Program Administrator and has prepared this Plan.*

15.0 Provisions are made to update the program as needed to account for changes in the workplace that affect respirator use.

15.1 *Based on interviews of trained employees, observations, and evaluation, the Program will be updated if required. Review of the program will be conducted at least annually.*

16.0 Equipment, training and medical evaluations are provided at no cost to the employee. *This is accomplished.*
7.4 Instructions for Respirator Timekeeping and Reporting

Work Activity Will Generate Respirable Silica

Check HC Table: Respiratory Protection Required?

- **YES**
  - Follow HC Silica Hazard Control Policy
    - Employee Completes Respirator Time Card
      - Div 3 Supervisor on Site
        - Div 3 Supervisor submits Respirator Time Card through Engage
      - No Div 3 Supervisor on Site
        - Div 1 Supervisor submits Respirator Time Card through Engage

- **NO**
  - Follow HC Silica Hazard Control Policy
    - No Respirator Time Card
      - See Attached Weekly Respirator Time Card Submittal Procedure
Instructions for DAILY tracking and WEEKLY reporting of respirator work hours

In order to comply with 29CFR1926.1153 Respirable Silica, records must be kept of the hours Haselden employees work while wearing a respirator to control respirable silica and other respiratory hazards. Tracking of voluntary respirator use under Appendix D is not required, because there can be no respiratory hazards when voluntarily using a respirator.

According to the Haselden Respirable Silica Hazard Control Policy, the Superintendent is responsible for keeping and submitting records for each employee at the jobsite.

5.0 Responsibilities

5.1 Superintendent

5.1.10 Records in the payroll system the work hours each employee spends in work activities where they are exposed to respirable silica. Reports the type of work activities so recordkeeping requirements can be met.

From the same policy, the Safety Department is responsible for providing to the Medical Professional during medical surveillance, every three years:

6.4.2.1 A medical and work history, including past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system;

Until we begin using our new payroll system sometime in 2018 or 2019, the following procedure for tracking and submitting employee respirator use shall be followed:

Superintendents:

On the Engage, navigate to the Safety page.
Open **Respirator Form Templates** below the respirator icon.

Submit to Engage Weekly

**Respirator User Log**

<table>
<thead>
<tr>
<th>Employee Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:__________ Signature</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
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</tbody>
</table>

Other (Name it)

OSHA requires this record be kept and provided to the medical professional when you receive your next examination under the Respirable Silica standard. You must record the number of hours you wear a respirator on the line that best describes your task. This record should be updated every day you wear a respirator and returned to the Safety Department weekly.

Select the Excel file for recording by computer.

Select the PDF file for recording by hand.
Record for each employee using a respirator the hours of respirator use each day for the Table 1 task the employee works on. If the task is not on Table 1, describe it in the “Other” space and record the hours.

At the end of the week, upload the file in Excel or PDF format using the Engage safety page. Click on the respirator icon.

Then, log into this screen.
This screen will open.

Select **Browse Files**. Open the screen on your laptop where you store the filled-in Respirator User Log. Select the file you wish to upload.
The file appears on this sheet. Select Upload. You are done.

Please call me with any questions. 303-358-7656.
1.0 Purpose

1.1 In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials).

1.2 When effective engineering controls are not feasible, or while they are being implemented, appropriate respirators shall be used by each affected employee according to this procedure.

2.0 Scope

2.1 This program applies to all Haselden employees, subcontractors and their employees on Haselden projects.

2.2 The employer shall provide the respirators which are appropriate for the task and exposure, and shall establish and maintain a respiratory protection program. This Haselden Construction Respiratory Protection Program outlines the minimum requirements for Haselden and their subcontractors.

2.3 In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, a written respiratory protection plan with worksite-specific procedures (Site Specific Plan) is required. The plan shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use. See Paragraph 6.9 for the required contents of the Site Specific Plan.

2.4 An employer may provide respirators at the request of employees or permit employees to use their own respirators, if respirator use will not in itself create a hazard.

2.5 No employer shall require an employee to use a respirator unless feasible engineering controls are in use.

2.6 If feasible engineering controls do not reduce the respirable contaminant to below the Occupational Exposure Limit (OEL), an appropriate respirator shall be used in addition to the engineering controls.

3.0 Definitions
3.1 **Affected Employee:** Employee whose job requires them to perform tasks or work in an area that requires the use of a respirator.

3.2 **Air-Purifying Respirator:** Filters, cartridges, or canisters that remove contaminants from the air by passing the ambient air through the air-purifying element before it reaches the user. Air-purifying respirators are used for contaminants with good warning properties.

3.3 **Assigned Protection Factor (APF):** The workplace level of respiratory protection that a respirator or class of respirators is expected to provide to properly trained employees working in a contaminated environment using a properly fitted and functioning respirator. Example: Respirators with an assigned protection factor of 10 are approved for use in an environment where the employee is exposed to 10 times the permissible exposure limit.

3.4 **Atmosphere-Supplying Respirator:** A respirator that supplies breathing air from a source independent of the ambient atmosphere. This includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units. Air-supplying respiratory devices require Grade D breathing air supplied from an independent source, such as an air compressor or bottled air.

3.5 **Canister or Cartridge:** A filter, sorbent or catalyst enclosed in a container which removes specific contaminants from the air when it passes through the container.

3.6 **Combination Respirator – Air Purifying:** Air purifying respirator used in atmospheres that contain hazards of both particulates and gases. Combination respirators have both particulate filters and gas/vapor filters.

3.7 **Combination Respirator – Atmosphere Supplying:** An atmosphere supplying respirator that has an auxiliary self-contained air supply that can be used if the primary supply fails. The self-contained portion can be small since it only needs to supply enough air for escape. This respirator can be used for entry into confined spaces, and is normally used when there are extended work periods required in atmospheres that are or may become immediately dangerous to life and health (IDLH).

3.8 **Contaminant:** A harmful, irritating or nuisance airborne material such as dust, fogs, fumes, mists, gases, smokes, sprays, vapors, etc.

3.9 **Emergency Situation:** Any occurrence such as equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

3.10 **Employee Exposure:** Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

3.11 **Engineering Controls:** Mechanical systems or equipment (i.e., ventilation systems, substitution of less toxic material, enclosing operations, wet methods of dust control, etc.) used to eliminate or minimize airborne contaminants.

3.12 **End-of-Service-Life Indicator (ESLI):** A system that warns the respirator user of the approach of the end of effective service life of a filter cartridge or canister; the
point beyond which the filter will no longer protect the user against the respiratory hazards it is designed to control.

3.13 **Escape-Only Respirator**: A respirator intended to be used only for emergency exit.

3.14 **Filtering Face Piece Respirator**: Any NIOSH approved negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium. Removes particulates from the atmosphere.

3.15 **Fit Factor**: Quantitative estimate of the fit of a particular respirator to a specific individual that estimates the concentration of the contaminant inside the mask.

3.16 **Fit Test**: The use of a testing method to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

3.17 **Grade “D” Breathing Air**: Air-supplied for Self-Contained Breathing Apparatus, SCBAs, (by way of a cylinder worn by the user) or a supplied-air respiratory device (supplied by a breathing air compressor or stationary air tanks and hoses), MUST meet the Compressed Gas Association, Commodity Specification. (See paragraph 6.14 of this procedure for minimum requirements for Grade “D” breathing air.)

3.18 **Hazardous Atmosphere**: An atmosphere that contains contaminants that exceed the occupational exposure limits or that is oxygen deficient or enriched. Typical places where atmospheric hazards are found include:

3.18.1 Vessels that contain or have been used to store or transport hydrocarbons, hydrogen sulfide, caustics, acids, carbon monoxide, nitrogen, and other hazardous chemicals or chemicals that can displace oxygen.

3.18.2 Areas containing high concentrations of particulate or fumes resulting from abrasive blasting, welding, grinding, asbestos abatement, catalyst, dust, etc.

3.18.3 Areas that have been purged with inert gases.

3.18.4 Confined spaces, such bins; boilers; pits (such as elevator, escalator, pump, valve or other equipment); manholes (such as sewer, storm drain, electrical, communication, or other utility); tanks (such as fuel, chemical, water, or other liquid, solid or gas); incinerators; scrubbers; concrete pier columns; sewers; transformer vaults; heating, ventilation, and air-conditioning (HVAC) ducts; storm drains; water mains; precast concrete and other pre-formed manhole units; drilled shafts; enclosed beams; vessels; digesters; lift stations; cesspools; silos; air receivers; sludge gates; air preheaters; step up transformers; turbines; chillers; bag houses; and/or mixers/reactors.

3.19 **High Efficiency Particulate Air (HEPA) Filter**: A filter that is at least 99.97% efficient in removing particles of 0.3 micrometers in diameter. The equivalent
NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

3.20 **Immediately Dangerous to Life or Health (IDLH):** Any atmosphere that poses an immediate hazard to life or irreversible debilitating effect on health, or that would impair an employee’s ability to escape from a dangerous atmosphere.

3.21 **Loose-Fitting Facepiece:** A respiratory inlet covering that is designed to form a partial seal with the face.

3.22 **Maximum use concentration (MUC):** The maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator. It is determined by multiplying the assigned protection factor of the respirator or class of respirators by the occupational exposure limit of the hazardous substance.

3.23 **Negative Pressure Respirator (Tight Fitting):** A respirator in which the air pressure inside the facepiece is less than air pressure outside the respirator when inhalation occurs.

3.24 **OEL (Occupational Exposure Limit):** An upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials. The following hierarchy of OELs shall be used:

- **3.24.1 IDLH Atmosphere:** This is the most restrictive OEL. Work shall only be performed under the requirements of paragraph 6.13, “Work in IDLH Atmospheres”.

- **3.24.2 Ceiling Recommended Exposure Limit:** The ceiling value exposure limit should not be exceeded at any time.

- **3.24.3 Short Term Exposure Limit (STEL):** A 15-minute Time Weighted Average (TWA) exposure limit that should not be exceeded at any time during a workday.

- **3.24.4 PEL (Permissible Exposure Limit):** The occupational exposure limit established by OSHA, expressed as an eight hour TWA. If no PEL has been established, either of the following two OELs can be used.

- **3.24.5 National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs)**

- **3.24.6 ACGIH® TLV® (Threshold Limit Value)**

- **3.24.7 If no PEL, REL or TLV has been established:**

  - **3.24.7.1 Any other exposure limit** used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet shall be used.

3.25 **Oxygen (O2) Deficiency:** An oxygen deficient atmosphere contains less than 19.5% oxygen. At levels below this threshold, impairment of the body’s physiological functioning begins. Lower levels of oxygen may result in physical impairment and death. An oxygen deficient atmosphere can occur when purging vessels with steam, nitrogen or other inert gases, due to displacement because
of contaminants, from rusting, drying paints or coatings, or from decomposition of organic materials.

3.26 **Oxygen (O\textsubscript{2}) Enriched**: Atmosphere with O\textsubscript{2} greater than 23.5%. Oxygen enriched atmospheres are a severe fire and explosion hazard.

3.27 **Physician or other licensed health care professional (PLHCP)**: An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services.

3.28 **Positive Pressure Respirator**: A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

3.29 **Powered Air-purifying Respirator (PAPR)**: An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

3.30 **Pressure Demand Respirator**: A positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

3.31 **Qualitative Fit Test (QLFT)**: A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test substance with a taste or smell.

3.32 **Quantitative Fit Test (QNFT)**: An assessment of the adequacy of respirator fit by measuring the amount of leakage into the respirator.

3.33 **SCBAs (Self Contained Breathing Apparatus)**: Respiratory protection device that uses an air tank worn on the user's back. It delivers Grade D air "on-demand" (as you inhale) or provides positive pressure (constant flow of air into the face mask). Used primarily for IDLH atmosphere, atmosphere with unknown concentration of contaminants, for rescue or escape, and during firefighting.

3.34 **Service Life**: The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.


3.36 **Supplied-Air Respirator (SAR) or Airline Respirator**: An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

3.37 **Tight-Fitting Facepiece**: A respiratory inlet covering that forms a complete seal with the face.

3.38 **User Seal Check**: An action conducted by the respirator user to determine if the respirator is properly seated to the face.

### 4.0 Reference Documents
4.1 29 CFR 1910.134 – Respiratory Protection and Appendices
4.2 29 CFR 1926 Subpart Z – Toxic and Hazardous Substances
4.3 OSHA Publication #3352 – Assigned Protection Factors (APFs)/Maximum Use Concentrations (MUCs)
4.4 OSHA Publication 3384-09 2011 Small Entity Compliance Guide for the Respiratory Protection Standard
4.5 OSHA eTooL – Respiratory Protection Change Out Schedule Flow Charts
4.6 HASELDEN – Confined Space Entry Program
4.7 HASELDEN – Welding, Torch Cutting, Soldering, Brazing (Oxygen-Fuel Gas Welding)
4.8 HASELDEN – Electric Arc Welding Equipment and Portable Generators
4.9 HASELDEN – Personal Protective Equipment and PPE Task Specific Matrix
4.10 HASELDEN – Respirable Silica Hazard Control Policy

5.0 Responsibilities

5.1 Site Superintendent(s):  
5.1.1 Shall be responsible for implementing this procedure.
5.1.2 Assists the safety department in identifying and evaluating respiratory hazards in the workplace.
5.1.3 Ensures that only employees who are properly trained by the Safety Department, medically evaluated and fit tested are assigned to perform work requiring respirators.
5.1.4 Ensures that a site specific respiratory protection plan (Site Specific Plan) has been prepared.
5.1.5 Provides tools, material, equipment and personal protective equipment identified in this procedure or otherwise required to perform the work.
5.1.6 Ensures that a JHA is prepared, reviewed, and signed by employees for each activity where employees are exposed to respiratory hazards.
5.1.7 Coordinates implementation of this HC Respiratory Protection Program with the HC Respirable Silica Hazard Control Policy when respirators are used in operations where employees are exposed to respirable silica.
5.1.8 Ensures that subcontractors comply with this policy.

5.2 Foremen and Crew Leads:
5.2.1 Assisting employees in the use of respiratory protection.

5.2.2 Promoting respiratory protection training and compliance with this program.

5.2.3 Notifying their Supervisor or the Qualified Program Administrator when:

   5.2.3.1 Conditions or tasks change that may require re-evaluation of the respiratory protection program and/or types of respiratory protection.

   5.2.3.2 A change in an employee status affects the employee's ability to wear a respirator.

5.3 Safety Department:

   5.3.1 Designates (a) Qualified Program Administrator(s) to manage the Respiratory Protection Program.

   5.3.2 Assists in the identification and control of hazardous atmospheres.

   5.3.3 Provides employee training

5.4 Qualified Program Administrator(s):

   5.4.1 Is familiar with the OSHA Respiratory Protection standard and with use and application of respirators in the particular workplace.

   5.4.2 Is responsible and accountable for the day to day administration of the Respiratory Protection Policy.

   5.4.3 Identifies and evaluates respiratory hazards in the workplace that affect HC employees.

   5.4.4 Provides employees with respiratory protection training if respirators are to be used.

   5.4.5 Selects respirators to be used in the workplace.

   5.4.6 Schedules respirator medical evaluations and fit testing for employees.

   5.4.7 Maintains medical records required by this policy.

   5.4.8 Prepares or assists jobsite staff in preparing Site Specific Respiratory Protection Plan.

   5.4.9 Maintains medical and training records required by the Standard.

   5.4.10 Performs the Respiratory Protection Program evaluation annually.

6.0 Selection of Respirators
6.1 Identify and evaluate the respiratory hazard(s) in the workplace. This evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where employee exposure cannot be identified or reasonably estimated, the atmosphere shall be considered to be IDLH.

6.1.1 The employer shall select a NIOSH-certified respirator and use it in accordance with the manufacturer’s instructions.

6.1.2 Follow 29 CFR 1926 Subpart Z for OSHA substance specific requirements regarding contaminants such as benzene, vinyl chloride, chromium VI, and cadmium.

6.1.3 Respirators must be selected on the basis of exposure assessments. Reasonable estimates of employee exposure levels may be made using the following methods.

6.1.3.1 Exposure data may be available from previous monitoring, from trade or industry associations, or from product or chemical manufacturers. In order to use such data, it must be demonstrated that the conditions found in the data survey are similar in processes, environmental conditions, types of materials, work practices, and control methods to those encountered on the jobsite.

6.1.4 Respirator effectiveness shall be continually evaluated. Appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued effectiveness of the respirator.

6.1.5 Consider factors that can influence respirator selection, such as location of the task, the task being performed, and chemicals or materials associated with the task, comfort, environmental factors, physical condition of the employee, and level of exertion.

6.2 Assigned Protection Factors (APFs)

6.2.1 Employers must use the assigned protection factors listed in Table I to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), ensure that the assigned protection factor is appropriate for the mode of operation in which the respirator is being used.

<table>
<thead>
<tr>
<th>Type of respirator, ²</th>
<th>Quarter mask</th>
<th>Half mask</th>
<th>Full facepiece</th>
<th>Helmet/hood</th>
<th>Loose-fitting facepiece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Air-Purifying Respirator</td>
<td>5</td>
<td>10</td>
<td>50</td>
<td>............</td>
<td>............</td>
</tr>
<tr>
<td>2. Powered Air-Purifying Respirator (PAPR)</td>
<td>.............</td>
<td>50</td>
<td>1,000</td>
<td>25/1,000</td>
<td>25</td>
</tr>
</tbody>
</table>
1. Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

2. The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by the Standard (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.

3. This APF category includes filtering facepieces, and half masks with elastomeric facepieces.

4. The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

5. These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

6.3 Maximum Use Concentration (MUC)

6.3.1 The employer must select a respirator that maintains the employee's exposure to the hazardous substance, when measured outside the respirator, at or below the MUC.

6.3.2 Do not apply MUCs to conditions that are immediately dangerous to life or health (IDLH); instead, select respirators listed for IDLH conditions in paragraph 6.4.4 of this Program.

6.3.3 When the calculated MUC exceeds the IDLH limit for a hazardous substance, or the performance limits of the cartridge or canister, the maximum MUC must be set at the lower of the two limits.

6.4 Types of Respirators

6.4.1 The respirator selected shall be appropriate for the chemical state and physical form of the contaminant.

6.4.2 For protection against gases and vapors, provide one of the following:

6.4.2.1 An atmosphere-supplying respirator.
6.4.2.2 An air-purifying respirator, provided that the respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant.

6.4.2.3 If there is no ESLI appropriate for conditions in the workplace, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. Describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

6.4.2.4 Detection of breakthrough by sense of smell is not an acceptable method of scheduling canister and cartridge changes.

6.4.3 For protection against particulates, provide one of the following:

6.4.3.1 An atmosphere-supplying respirator.

6.4.3.2 An air-purifying respirator equipped with a filter certified by NIOSH as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH.

6.4.3.3 For contaminants consisting primarily of particles with a particle size of at least 2 microns, an air-purifying respirator equipped with any filter certified for particulates by NIOSH. Respirable silica has a particle size of 1 micron.

6.4.4 Respirators for atmospheres that are not IDLH:

6.4.4.1 Provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.

6.4.5 For IDLH Atmospheres select one of the following respirators

6.4.5.1 A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes.

6.4.5.2 A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

6.4.5.3 Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

6.4.5.4 Atmosphere supplying respirators are required for oxygen deficient atmospheres.

6.4.6 All oxygen-deficient atmospheres shall be considered IDLH. Exception: If the employer demonstrates that, under all foreseeable conditions, the
oxygen concentration can be maintained within the altitudes specified in Table II then any atmosphere-supplying respirator may be used.

### Table II

<table>
<thead>
<tr>
<th>Altitude (ft.)</th>
<th>Oxygen deficient Atmospheres (% O&lt;sub&gt;2&lt;/sub&gt;) for which the employer may rely on atmosphere-supplying respirators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3,001</td>
<td>16.0-19.5</td>
</tr>
<tr>
<td>3,001-4,000</td>
<td>16.4-19.5</td>
</tr>
<tr>
<td>4,001-5,000</td>
<td>17.1-19.5</td>
</tr>
<tr>
<td>5,001-6,000</td>
<td>17.8-19.5</td>
</tr>
<tr>
<td>6,001-7,000</td>
<td>18.5-19.5</td>
</tr>
<tr>
<td>7,001-8,000</td>
<td>19.3-19.5</td>
</tr>
</tbody>
</table>

1 Above 8,000 feet the exception does not apply. Oxygen-enriched breathing air must be supplied above 14,000 feet.

### 6.5 Medical Evaluation

6.5.1 All employees required to wear any type of respirator must receive medical evaluation by a physician or other licensed health care professional (PLHCP) to determine the employee’s ability to use a respirator in the workplace before the employee is fit tested or required to use the respirator in the workplace. Using a respirator may place a physical or psychological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee.

6.5.2 The medical evaluation may be discontinued when the employee is no longer required to wear a respirator.

6.5.3 The PLHCP shall perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire. This information shall be the same as shown in Appendix C of the Standard.

6.5.4 The employer shall provide the PLHCP with a copy of supplemental information listed below under “Supplemental Information for the PLHCP.”

6.5.5 The employer shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination.

6.5.6 The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

6.5.7 The medical questionnaire and examinations shall be administered confidentially and explained in a manner that ensures that the employee understands.
6.5.8 The employee shall have an opportunity to discuss the questionnaire and examination results with the PLHCP.

6.6 **Supplemental Information to be provided to the PLHCP.**

6.6.1 The type and weight of the respirator to be used by the employee.

6.6.2 The duration and frequency of respirator use (including use for rescue and escape).

6.6.3 The expected physical work effort.

6.6.4 Additional protective clothing and equipment to be worn.

6.6.5 Temperature and humidity extremes that may be encountered.

6.6.6 Any supplemental information previously provided to the PLHCP need not be provided again if the information and the PLHCP remain the same.

6.6.7 The employer shall provide the PLHCP with a copy of the HC Written Respiratory Protection program and a copy of the Standard.

6.6.8 When the employer replaces a PLHCP, the employer must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP.

6.7 **Medical Determination** - In determining the employee's ability to use a respirator:

6.7.1 Obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP. The recommendation shall provide only the following information:

6.7.1.1 Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.

6.7.1.2 The need, if any, for follow-up medical evaluations.

6.7.1.3 A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

6.7.2 If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, provide a PAPR if the PLHCP's medical evaluation finds that the employee can use such a respirator; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.
6.7.3 Additional Medical Evaluations - At a minimum, provide additional medical evaluations that comply with 29 CFR 1910.134 if:

6.7.3.1 An employee reports medical signs or symptoms that are related to the ability to use a respirator;

6.7.3.2 A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated;

6.7.3.3 Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation.

6.7.3.4 A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

6.8 Respirator Fit Testing

6.8.1 Before an employee is required to use any respirator with a negative or positive pressure tight-fitting facepiece, and at least annually afterward, the employee must be fit tested with the same make, model, style, and size of respirator that will be used.

6.8.2 All fit testing shall be in accordance with Appendix A of the Standard. Refer to Appendix A for the complete protocol.

6.8.3 Whenever a different respirator facepiece (size, style, model or make) is used, the employee shall be fit tested again.

6.8.4 Employees using a tight-fitting facepiece respirator are required to pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) conducted using an OSHA accepted protocol.

6.8.5 When conducting quantitative fit testing, the pass/fail level is as follows:

6.8.5.1 The minimum fit factor for half mask respirator is 100.

6.8.5.2 The minimum fit factor of full face respirator is 500.

6.8.6 Facial hair, eyeglasses and dentures can affect the seal between the mask and the wear’s face; therefore, to ensure a proper fit, affected employees will:

6.8.6.1 **NOT** pass eyeglass temples through the sealing surface of the respirator,

6.8.6.2 **NOT** wear tight-fitting respirators that can interfere with seal or respirator valves,

6.8.6.3 Trim or shave facial hair in a manner that it does not affect the sealing surface,
6.8.6.4 Perform a user seal check each time they put on a tight-fitting respirator, using steps demonstrated during training. User seal tests shall be in accordance with the manufacturer’s written instructions.

6.9 Site Specific Respiratory Protection Plan

6.9.1 Haselden and their subcontractors shall prepare a Site Specific Respiratory Protection Plan (Site Specific Plan) for each project where employees are exposed to respiratory hazards. The Site Specific Plan will address the following elements:

6.9.1.1 Why it may be necessary to wear a respirator.

6.9.1.1.1 Site location and work activities where respirators are permitted.

6.9.1.1.2 Procedures for selecting respirators for use in the workplace. Include data used in preparing exposure assessments.

6.9.1.1.3 Procedures for selecting respirators for use in the workplace. Include data used in preparing exposure assessments.

6.9.2 Medical evaluations of employees required to use respirators.

6.9.3 Fit testing procedures for tight-fitting respirators. Fit testing protocol, location of fit testing, and the individual who will perform fit testing must be identified.

6.9.4 Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations.

6.9.5 Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators.

6.9.6 Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators.

6.9.7 Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations.

6.9.8 Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.

6.9.9 Procedures for regularly evaluating the effectiveness of the program.
6.9.10 Ensuring that employees who voluntarily wear respirators (excluding filtering face pieces) comply with the medical evaluation, cleaning, storage and maintenance requirements of the OSHA standard.

6.9.11 A qualified program administrator shall be designated to administer the program. The qualified administrator shall be familiar with the OSHA Respiratory Protection standard and with use and application of respirators in the particular workplace. Respiratory Protection Program evaluation shall be performed by the qualified program administrator.

6.9.12 The Qualified Program Administrator must be named and their qualifications provided to the Project Superintendent.

6.9.13 Provisions are made to update the program as needed to account for changes in the workplace that affect respirator use.

6.9.14 Equipment, training and medical evaluations must be provided at no cost to the employee.

6.10 Voluntary Use of Respirators

6.10.1 Employees wishing to voluntarily use respirators in non-required areas or non-hazardous atmospheres must read and sign Haselden’s form, (“Form”), Information for Employees Using Respirators When Not Required, attached.

6.10.1.1 There can be no respiratory hazard present when a respirator is worn voluntarily.

6.10.1.2 If the Job Hazard Analysis requires an employee to wear a dust mask or filtering face piece respirator, the provisions of voluntary respirator use do not apply and requirements of the full respiratory protection plan must be followed.

6.10.1.3 Dust masks are considered ineffective and shall not be worn by employees.

6.10.1.4 N-95 respirators may be worn by a trained employee who has signed the Form without having a medical evaluation.

6.10.1.5 Respirators used voluntarily must be maintained and disposed of in accordance with the manufacturer’s instructions, so that a respirator does not become a health hazard to the user.

6.10.1.6 Training for voluntarily respirator use shall be conducted by the superintendent using the manufacturer’s written instructions, and shall include proper donning and doffing, wear, and fit. The limitations of the filtering face piece shall be covered. Employees shall be able to demonstrate proper use and explain the contents of the training. Training shall be documented and signed by the trainer and the employee.
6.10.1.7 Use of any respirator other than an N-95 requires medical evaluation and fit testing, even for voluntary use.

6.11 **Use of Respirators when required by the Respiratory Protection Plan**

6.11.1 **Affected employees shall:**

6.11.1.1 Complete a respirator medical evaluation questionnaire and follow-up medical testing if required by the PLHCP.

6.11.1.2 Be fit tested

6.11.1.3 Attend training.

6.11.1.4 Use respiratory protection according to the instructions and training provided.

6.11.1.5 Maintain and store respirators:

6.11.1.5.1 In a clean and sanitary area.

6.11.1.5.2 In such a matter that they are protected from flattening, creasing, or other deformation.

6.11.1.5.3 Away from dust, sunlight, heat, extreme cold, etc.

6.11.1.5.4 In accordance with training and the manufacturer’s instructions.

6.11.1.6 Inspect their respirator before and after use.

6.11.1.7 Replace and dispose of defective, damaged or dirty respirators and filters in accordance with the manufacturer’s instructions and by following filter change schedules.

6.11.1.8 Report any changes in their medical status that may impact their ability to wear a respirator to their immediate supervisor or Safety Resource.

6.11.1.9 Employees shall leave the respirator use area immediately:

6.11.1.9.1 To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use.

6.11.1.9.2 If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece.

6.11.1.9.3 To replace the filter medium if breathing through the filter becomes difficult or if a filter change is scheduled.

6.11.1.9.4 If the employee begins to feel sick, and inform their immediate supervisor or their company’s Safety Resource.
6.11.1.9.5 In case of fire, chemical spill, evacuation notice or other emergency. Respirators are not for emergency use.

6.11.1.10 Employees shall contact their immediate supervisor or Safety Resource whenever respirators or filters are needed.

6.11.2 Not using a respirator when required, or failure to maintain a respirator in a safe and sanitary condition, shall be a Class B Violation of the Haselden Accountability and Disciplinary Program.

6.11.3 Only NIOSH certified respirators shall be used, in accordance with the manufacturer’s recommendations based upon exposure assessments.

6.11.4 Facepiece seal protection - The employer shall not permit respirators with tight-fitting facepieces to be worn by employees who have:

6.11.4.1 Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function.

6.11.4.2 Any condition that interferes with the face-to-facepiece seal or valve function.

6.11.5 If an employee wears corrective glasses or goggles or other personal protective equipment, equipment shall be worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

6.11.6 For all tight-fitting respirators, employees shall perform a user seal check each time they put on the respirator using the procedures recommended by the respirator manufacturer.

6.11.7 In order to ensure continuing respirator effectiveness, appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change that may affect respirator effectiveness, the continued effectiveness of the respirator shall be evaluated.

6.11.8 Exposure assessment will consist of area, task specific and personnel monitoring. Refer to OSHA’s Small Entity Compliance Guide or the OSHA Respiratory Protection Standard for guidance.

6.12 Filters, Cartridges and Canisters

6.12.1 Filters, cartridges and canisters shall be labeled and color coded with the NIOSH approval label. The label shall not be removed or become illegible.

6.12.2 A schedule of filters and filter changes shall be posted on site in a location accessible to employees.

6.13 Work in IDLH Atmospheres – For all IDLH atmospheres, the following requirements will be met:
6.13.1 If work is performed in a confined space where a respiratory hazard exists or has the potential to exist, that space shall be designated as a Permit Required Confined Space and all work shall be performed in accordance with 29 CFR 1926 Subpart AA, Confined Spaces in Construction.

6.13.2 If work is not performed in a confined space, the following protocols shall be followed:

6.13.2.1 One employee or, when needed, more than one employee shall be located outside the IDLH atmosphere.

6.13.2.2 Visual, voice, or signal line communication shall be maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.

6.13.2.3 The employee(s) located outside the IDLH atmosphere shall be trained and equipped to provide effective emergency rescue.

6.13.2.4 The employer shall be notified before the employee(s) located outside the IDLH atmosphere enter to provide emergency rescue.

6.13.2.5 The rescuer, once notified, shall provide necessary assistance appropriate to the situation.

6.13.2.6 Employee(s) located outside the IDLH atmosphere shall be equipped with:

6.13.2.6.1 Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA.

6.13.2.6.2 Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry.

6.13.2.6.3 Equivalent means for rescue in areas where retrieval equipment would increase the overall risk resulting from entry.

6.14 When Grade “D” Breathing Air and Breathing Air Compressors are used:

6.14.1 If the exposure assessment identifies the need of a supplied air respirator or a self-contained breathing apparatus (SCBA) (primarily used in IDLH environments):

6.14.1.1 Action shall be taken to minimize or eliminate the potential hazard. Steps to be considered are elimination of the hazard, substitution of a safer product, engineering controls such as ventilation, or limiting the amount of time an employee can spend performing that work activity to keep exposure below the OEL.
6.14.1.2 Obtain written approval from the Qualified Program Administrator if eliminating or minimizing potential employee exposure is infeasible.

6.14.1.3 Ensure that an adequate supply of Grade “D” breathing air is provided.

6.14.1.4 Provide a dedicated employee to monitor breathing air compressors and alarms if they are used.

6.14.2 Breathing Air Quality Assurance:

6.14.2.1 ONLY Grade “D” or better breathing air will be used when air-supplying respirators are required.

6.14.2.2 Testing and documentation of the breathing air quality is the responsibility of the company performing the work.

6.14.2.3 Grade “D” breathing air requirements are:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen (O₂)</td>
<td>19.5% minimum - 23.5% maximum</td>
</tr>
<tr>
<td>Carbon Dioxide (CO₂)</td>
<td>1000 PPM - maximum</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>10 PPM - maximum</td>
</tr>
<tr>
<td>Hydrocarbons (condensed)</td>
<td>5 mg/m³ - maximum</td>
</tr>
<tr>
<td>Nitrogen (N₂)</td>
<td>Balance</td>
</tr>
<tr>
<td>Odor</td>
<td>Free of pronounced odors</td>
</tr>
<tr>
<td>Moisture Content; to protect</td>
<td>Breathing air bottles should not exceed a dew</td>
</tr>
<tr>
<td>Valves from freezing:</td>
<td>point of 50°F at 1 atmosphere pressure.</td>
</tr>
<tr>
<td></td>
<td>Breathing air compressor should not exceed a dew</td>
</tr>
<tr>
<td></td>
<td>point of 10°F at 1 atmosphere pressure.</td>
</tr>
</tbody>
</table>

6.14.3 Compressed oxygen shall not be used in atmosphere-supplying respirators that have previously used compressed air.

6.14.4 Ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

6.14.5 Breathing Air Cylinder Requirements

6.14.5.1 Obtain a copy of the CGA G 7.1-2011 Grade D Air Analysis Report (Certificate of Analysis) from the supplier or vendor.

6.14.5.2 Maintain copies of certificate of analysis on site.

6.14.5.3 Verify each bottle meets the Grade D specification prior to air being placed in service.
6.14.5.4 The employer shall use only the respirator manufacturer’s NIOSH-approved breathing-gas containers, marked and maintained in accordance with the Quality Assurance provisions of the NIOSH approval for the SCBA as issued in accordance with the NIOSH respirator-certification standard at 42 CFR part 84.

6.14.5.5 The breathing air supplier is responsible for ensuring bottled breathing air cylinders are tested and maintained according to 29 CFR Parts 180, "Shipping Container Specification Regulation of the Department of Transportation".

6.14.5.6 Documentation must be made available to the Haselden superintendent.

6.14.6 Breathing Air Compressor Requirements

6.14.6.1 Must be constructed and situated to prevent entry of contaminated air into the system.

6.14.6.2 Must be equipped with particulate and sorbent bed filters that are maintained to meet the manufacturer’s specification.

6.14.6.3 Must bear a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor.

6.14.6.4 Must be equipped with a carbon monoxide (CO) sensor and alarm that is tested before each use. The sensor shall be calibrated once a month. Testing and calibration shall be documented and made available to the Haselden Superintendent.

6.14.6.5 Oil lubricated compressors shall be equipped with a high-temperature alarm, a CO (carbon monoxide) alarm, or both.

6.14.6.6 If only a high temperature alarm is used, the supplied air must be monitored for CO, not to exceed the 10 ppm.

6.14.6.7 Breathing air couplings must be incompatible with outlets for non-respirable worksite air or gas systems. No asphyxiating substance shall be introduced into the breathing air lines.

6.14.6.8 Maintain records documenting CO sensor calibration, filter changes, maintenance records, and certify that only the manufacturer’s recommended or approved replacement parts have been used. Documentation shall be made available to the Project Superintendent.

6.14.6.9 The employer shall use only the respirator manufacturer's NIOSH-approved breathing-gas containers, marked and maintained in accordance with the Quality Assurance provisions of the NIOSH approval for the SCBA as issued in accordance
with the NIOSH respirator-certification standard at 42 CFR part 84.

6.15 Maintenance, Inspection and Care of Respirators

6.15.1 Provide for the cleaning, disinfecting, storage, inspection and repair of respirators used by employees.

6.15.2 Each respirator user shall be provided with a respirator that is clean, sanitary and in good working order.

6.15.3 Respirators shall be cleaned and disinfected in accordance with and at intervals identified in the manufacturer's written instructions.

6.15.4 Respirators shall be stored to protect them from damage, deformation, contamination, dust, sunlight, extreme temperature, excessive moisture, and damaging chemicals.

6.15.5 Respirators used for emergencies shall be kept accessible in the work area, clearly marked for emergency use, inspected, and stored in accordance with manufacturer's recommendations.

6.15.6 Respirators shall be inspected before each use and during cleaning.

6.15.7 Respirators used for emergencies shall be inspected monthly, and before and after each use.

6.15.8 Emergency escape only respirators shall be inspected before being carried into the workplace for use.

6.15.9 Defective respirators shall be immediately removed from service, and discarded or repaired or adjusted in accordance with the manufacturer's requirements.

6.15.10 If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, the respirator must be replaced or repaired before the employee returns to the work area.

6.15.11 Reducing and admission valves, regulators and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

6.15.12 Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The employer shall determine that the regulator and warning devices function properly.

6.15.13 For respirators maintained for emergency use, provide the following:

6.15.13.1 Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action,
and a serial number or other means of identifying the inspected respirator.

6.15.13.2 Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information shall be maintained until replaced following a subsequent certification.

6.16 **Training**

6.16.1 Any training performed by a subcontractor must meet or exceed Haselden Respiratory Protection Program and regulatory requirements.

6.16.2 Training shall be comprehensive, effective and shall be given in a language that employees can understand.

6.16.3 Employees shall be able to demonstrate or explain the following:

6.16.3.1 Why the respirator is necessary and how improper fit, usage or maintenance can compromise the effectiveness of respiratory protection.

6.16.3.2 The limitations and capabilities of the respirator.

6.16.3.3 How to use the respirator effectively during emergency situations, including when the respirator malfunctions.

6.16.3.4 How to inspect a respirator, put it on and remove it, check the seals, and use it properly.

6.16.3.5 Maintenance, cleaning and storage procedures.

6.16.3.6 How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.


6.16.3.8 Employees shall be trained before the respirator is required in the workplace.

6.16.3.9 Employees shall receive refresher training every 12 months or more often if necessary.

6.16.3.10 Written employee training records shall be kept and made available to the Project Superintendent.

6.16.4 **Retraining**

6.16.4.1 When there is reason to believe that any employee who has been trained does not have the understanding and skill required to use a respirator and perform his job safely, the employee shall be retrained.
6.16.4.2 Retraining shall be performed when;

6.16.4.2.1 Changes in the workplace make previous training obsolete.

6.16.4.2.2 Changes in types of PPE to be used make previous training obsolete.

6.16.4.2.3 Inadequacies in the employee’s knowledge or use of PPE indicate that the employee has not grasped necessary understanding or skill.

6.17 Program Evaluation

6.17.1 The Qualified Program Administrator shall conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly followed.

6.17.2 Employees shall be observed and consulted with to ensure that respirators are being used properly.

6.17.3 The program will be evaluated to ensure that the program is effective, considering the following items:

6.17.3.1 Respirator fitment

6.17.3.2 Respirator maintenance

6.17.3.3 Ability to perform work activities with minimal interference

6.17.3.4 Appropriate respirator selection for the hazards to which employees are exposed

6.18 Recordkeeping

6.18.1 The following records shall be maintained at the jobsite in accordance with the Standard.

6.18.1.1 Medical evaluation

6.18.1.2 Fit testing

6.18.1.3 Medical determination of an employee’s ability to wear a respirator and restrictions.

6.18.1.4 A written copy of the current respirator program

6.18.1.5 A written copy of the Site Specific Plan

7.0 Attachments:

7.1 Information for Employees Using Respirators When Not Required

7.2 Respiratory Protection Program Checklist
Information for Employees Using Respirators When Not Required
(OSHA Appendix D Information to Respiratory Protection Standard)

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

EMPLOYEE INFORMATION VERIFICATION:

I have read and understand the contents of this document

Employee Name

_____________________________________________________________

Employee Signature

_____________________________________________________________

Date
<table>
<thead>
<tr>
<th>OSHA Reference</th>
<th>OSHA Requirement</th>
<th>HC</th>
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<th>No</th>
<th>Action</th>
<th>Checked by</th>
<th>Date</th>
<th>Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910.134(c)(i)</td>
<td>Procedures for selecting respirators for use in the workplace</td>
<td></td>
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<td>1910.134(c)(ii)</td>
<td>Medical evaluation of employees required to use respirators</td>
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<td>1910.134(c)(iii)</td>
<td>Fit testing procedures for tight-fitting respirators</td>
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<td>1910.134(c)(iv)</td>
<td>Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations</td>
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<td>1910.134(c)(v)</td>
<td>Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding and otherwise maintaining respirators</td>
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<tr>
<td>1910.134(c)(vi)</td>
<td>Procedures to ensure adequate air quality, quantity and flow of breathing air for atmosphere-supplying respirators</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1910.134(c)(vii)</td>
<td>Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations</td>
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<td></td>
</tr>
<tr>
<td>1910.134(c)(viii)</td>
<td>Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance</td>
<td></td>
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<td></td>
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<td></td>
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<td>1910.134(c)(ix)</td>
<td>Procedure for regularly evaluating the effectiveness of the program</td>
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</tbody>
</table>
1.0 Purpose

1.1 This procedure establishes minimum requirements for safe use of rigging and hoisting equipment used in material handling. The procedure is based on OSHA regulations in 29 CFR 1926.

2.0 Scope

2.1 Minimum requirements associated with the 5 steps to safely rigging a load, and inspection criteria that is used for rigging and material handling.

3.0 Definitions

3.1 **Competent Person:** An employee who is capable of identifying existing and predictable hazards in the surrounding working conditions which are unsanitary, hazardous, or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.2 **Bird Cage:** Wire rope strands are forcibly untwisted and become spread outward.

3.3 **Chain Hoist:** A mechanical device used to facilitate movement of material that uses chain to transmit the load to the hoist; the commonly used chain hoists are the spur-gear and lever-operated chain hoist or chain fall.

3.4 **EIPS:** Extra improved plow steel.

3.5 **Fiber Rope Core:** A rope with fiber at the center of the wire.

3.6 **IWRC:** Independent wire rope core.

3.7 **Shackle:** U-shaped or horseshoe-shaped piece of metal provided with a means for applying a bolt or pin through the ends and used to hold several lifting members together; sometimes called a clevis.

3.8 **Sling:** An assembly which connects the load to the lifting equipment

3.9 **Sling Angle:** Angle of sling from horizontal when multiple Slings are used to attach a load to a hoist.

3.10 **Softener:** Wood or other soft materials placed over the sharp edges of objects to be lifted or rigged from, to keep the sharp edges from cutting or damaging the sling(s) being used.
3.11 **SWL**: Safe Working Load = The 'safe working load' of a rigging equipment that can be applied without causing any kind of damage. Note that the safe working load is considerably less than the breaking strength.

3.12 **Qualified Rigger**: Person that possesses a recognized degree, certificate, or professional standing, or has extensive knowledge, training, and experience, and can successfully demonstrate the ability to solve problems related to rigging loads.

4.0 **Reference Documents**

4.1 29 CFR 1926 Subpart R Steel Erection
4.2 29 CFR 1926 Subpart CC Cranes and Derricks in Construction
4.3 29 CFR 1910.184 - Slings
4.4 29 CFR 1926.552 – Material Hoist, Personnel Hoist and Elevators
4.5 29 CFR 1926.753 – Hoisting and Rigging
4.6 29 CFR 1926.953 – Material Handling
4.7 29 CFR 1926.251 - Rigging Equipment for Material Handling
4.8 OSHA Publication 3072 – Sling Safety
4.9 OSHA Publication 2236 – Material Handling and Storage
4.10 OSHA Construction Safety and Health Outreach Program – Sling Safety
4.11 OSHA Construction Safety and Health Outreach Program – Material Handling and Storage
4.12 OSHA Guidance on Safe Sling Use
4.13 OSHA Standard Interpretations - Rigging Equipment/Custom-Designed Accessories
4.14 OSHA Standard Interpretations - Load-Testing; Custom-design Rigging Accessories & ASME Standards
4.15 OSHA eTool – General Requirements Gear and Equipment for Rigging and Materials
4.16 OSHA eTool – Steel Erection/Hoisting and Rigging
4.17 Haselden Crane Program
4.18 HC Steel Erection Policy

5.0 **Responsibilities**
5.1 Site Superintendent(s):

5.1.1 Responsible for ensuring that lifting operations are performed safely and in compliance with OSHA regulations and Haselden Construction Rigging Policy, and safe work practices. They are also responsible for identifying new hazards and developing control measures to prevent injuries and property damage related to rigging activities.

5.2 Qualified Employees:

5.2.1 Responsible for inspecting all rigging and hoisting equipment for damage and defects before each use and for otherwise complying with this procedure. Employees must immediately report any damaged or defective equipment to their supervisor.

6.0 Implementation

6.1 Inspection and Removal Criteria

6.1.1 Alloy Steel Chains

6.1.1.1 An alloy steel chain sling shall be removed from service if conditions such as the following are present:

6.1.1.1.1 Missing or illegible sling identification

6.1.1.1.2 Cracks or breaks.

6.1.1.1.3 Excessive wear, nicks, or gouges. Maximum allowable wear on chain links shall not be below the values listed in the Table:

<table>
<thead>
<tr>
<th>Chain Size, Inches</th>
<th>Maximum Allowable Wear, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>3/64</td>
</tr>
<tr>
<td>3/8</td>
<td>5/64</td>
</tr>
<tr>
<td>1/2</td>
<td>7/64</td>
</tr>
<tr>
<td>5/8</td>
<td>9/64</td>
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<tr>
<td>3/4</td>
<td>5/32</td>
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<tr>
<td>7/8</td>
<td>11/64</td>
</tr>
<tr>
<td>1</td>
<td>3/16</td>
</tr>
</tbody>
</table>

6.1.1.1.4 Stretched chain links or components.

6.1.1.1.5 Bent, twisted, or deformed chain links or components.

6.1.1.1.6 Evidence of heat damage.

6.1.1.1.7 Excessive pitting or corrosion.

6.1.1.1.8 Lack of ability of chain or components to hinge (articulate) freely.

6.1.1.1.9 Weld splatter
6.1.1.2 Alloy steel chains and chain slings should not be heated above 600 degrees after being received from the manufacturer.

6.1.1.3 Only Alloy grade 80 or 100 use for overhead hoisting.

6.1.1.4 Only alloyed chain will be used in rigging. Chains must be inspected for damage and defects before each use.

6.1.1.5 A formal annual inspection must be performed on each chain. Annual inspections must be documented with copies kept at the job site.

6.1.1.6 New, repaired, or reconditioned alloy steel chain slings must be proof-tested before initial use, in accordance with the manufacturer's requirements. A certificate of the proof test must be retained for the service life of the sling. Copies of proof test certificates must be available at the job site.

6.1.1.7 Mechanical coupling links or other attachments used with alloy steel chains must have a rated capacity at least equal to that of the chain.

6.1.1.8 Alloy steel chain slings must have permanently attached, durable identification showing their size, grade, rated capacity, and manufacturer.

6.1.1.9 Use of mechanical coupling links or low carbon steel links to repair broken chains is prohibited.

6.1.2 Wire Rope Slings

6.1.2.1 A wire rope sling shall be removed from service if conditions such as the following are present:

6.1.2.1.1 Missing or illegible sling identification.

6.1.2.1.2 Broken Wires:

6.1.2.1.2.1 For strand-laid and single-part slings, 10 randomly distributed broken wires in one rope lay, or 5 broken wires in one strand in one rope lay.

6.1.2.1.2.2 For cable-laid slings, 20 broken wires per lay.

6.1.2.1.2.3 For less than eight-part braided slings, 20 broken wires per braid.

6.1.2.1.2.4 For eight-part or more than eight braided slings, 40 broken wires per braid.

6.1.2.1.2.5 Severe localized abrasion or scraping.
6.1.2.1.2.6  Kinking, crushing, bird caging, or any other damage resulting in damage to the rope structure.

6.1.2.1.2.7  Evidence of heat damage.

6.1.2.1.2.8  End attachments that are cracked, deformed, or worn to the extent that the strength of the sling is substantially affected.

6.1.2.1.2.9  Severe corrosion of the rope, end attachments, or fittings.

6.1.2.2  A minimum safety factor of five must be maintained at all times.

6.1.2.3  Wire rope must have a readable tag stating the capacity of the sling in vertical, choker, and basket configurations.

6.1.2.4  Eyes in wire rope bridles and slings shall not be formed by wire rope clips or knots.

6.1.2.5  Protruding ends of strands in splices on slings and bridles must be covered or blunted.

6.1.2.6  Field fabricated wire rope slings are prohibited.

6.1.3  Natural and Synthetic Fiber Rope.

6.1.3.1  Natural synthetic fiber rope used for rigging shall not be permitted. Under special circumstances, written permission may be granted by the Director of Safety or his designee.

6.1.4  Synthetic Nylon Web Slings

6.1.4.1  A synthetic web sling shall be removed from service if the following conditions are present:

6.1.4.2  Missing or illegible sling identification.

6.1.4.3  Acid or caustic burns.

6.1.4.4  Melting or charring of any part of the sling.

6.1.4.5  Holes, tears, cuts, or snags

6.1.4.6  Broken or worn stitching in load bearing splices.

6.1.4.7  Excessive abrasive wear.

6.1.4.8  Knots in any part of the sling.
6.1.4.8.1 Discoloration and brittle or stiff areas on any part of the sling may mean chemical or ultraviolet/sunlight damage.

6.1.4.9 Fittings that are pitted, corroded, cracked, bent, twisted, gouged, or broken.

6.1.5 Polyester Round Slings:

6.1.5.1 A synthetic round sling shall be removed from service if the following conditions are present:

6.1.5.1.1 Missing or illegible sling identification.

6.1.5.1.2 Acid or caustic burns.

6.1.5.1.3 Evidence of heat damage

6.1.5.1.4 Holes, tears, cuts, abrasive wear, or snags that expose the core yarns.

6.1.5.1.5 Broken or damaged core yarns.

6.1.5.1.6 Weld splatter that exposes core yarns.

6.1.5.1.7 Knots in the round slings, except for core yarns inside the cover.

6.1.5.1.8 Fittings that are pitted, corroded, cracked, bent, twisted, gouged, or broken.

6.2 Shackles

6.2.1 Shackles shall be removed from service if conditions such as the following are present:

6.2.1.1 Missing or illegible manufacturer’s name or trademark and/or rated load identification.

6.2.1.2 Indications of heat damage including welding spatter or arc strikes.

6.2.1.3 Excessive pitting or corrosion.

6.2.1.4 Bent, twisted, distorted, stretched, elongated, cracked, or broken load-bearing components.

6.2.1.5 Excessive nicks or gouges.

6.2.1.6 A 10% reduction of the original or catalog dimension at any point around the body or pin.

6.2.1.7 Incomplete thread engagement or pin seating.
6.2.1.8 Excessive thread damage.

6.2.1.9 Evidence of unauthorized welding.

6.2.1.10 Other conditions, including visible damage, that cause doubt as to the continued use of the shackle.

6.3 Hooks

6.3.1 Hooks shall be removed from service if conditions such as the following are preset:

6.3.1.1 Missing or illegible hook manufacturer's identification.

6.3.1.2 Missing or illegible rated load identification.

6.3.1.3 Excessive pitting or corrosion.

6.3.1.4 Cracks, nicks, or gouges.

6.3.1.5 Wear — any wear exceeding 10% (or as recommended by the manufacturer) of the original section dimension of the hook or its load pin.

6.3.1.6 Deformation — any visibly apparent bend or twist from the plane of the unbent hook.

6.3.1.7 Throat opening — any distortion causing an increase in throat opening of 5% not to exceed 1/4 in. (or as recommended by the manufacturer).

6.3.1.8 Inability to lock — any self-locking hook that does not lock

6.3.1.9 Inoperative latch (if required) — any damaged latch or malfunctioning latch that does not close the hook's throat.

6.3.1.10 Damaged, missing, or malfunctioning hook attachment and securing means.

6.3.1.11 Evidence of excessive heat exposure or unauthorized welding.

6.3.1.12 Evidence of unauthorized alterations such as drilling, machining, grinding, or other modifications.

6.4 Shouldered Eye Bolts

6.4.1 Standard eyebolts are prohibited for hoisting. Only shouldered eyebolts shall be used.

6.4.2 Eyebolts shall be removed from service if conditions such as the following are preset:
6.4.2.1 Missing or illegible manufacturer’s name or trademark and/or rated load identification.

6.4.2.2 Indications of heat damage including welding spatter or arc strikes.

6.4.2.3 Excessive pitting or corrosion.

6.4.2.4 Bent, twisted, distorted, stretched, elongated, cracked, or broken load-bearing components. i.e. Excessive nicks or gouges.

6.4.2.5 A 10% reduction of the original or catalog dimension at any point around the body or pin.

6.4.2.6 Excessive thread damage or wear.

6.4.2.7 Evidence of unauthorized welding or modification.

6.4.2.8 Other conditions, including visible damage, that cause doubt as to suitability for continued use.

6.5 Ratchet Lever Chain Hoist & Chain Falls

6.5.1.1 Ratchet Lever Chain Hoist and chain fall shall be removed from service if conditions such as the following are present:

6.5.1.1.1 Bolts, rivets, nuts, and pins for being loose or missing.

6.5.1.1.2 Cracked or worn drums or sheaves, or rollers.

6.5.1.1.3 Worn, corroded, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers locking, and clamping devices.

6.5.1.1.4 Excessive wear on motor or load brakes.

6.5.1.1.5 Excessive wear of chains and chain stretch.

6.5.1.1.6 The chain should be cleaned before inspection. Examine visually for cracks, gouges, nicks, weld spatter, corrosion, and distorted links. Slacken the chain and move adjacent links to one side to inspect for wear at the contact points. If you observe wear or suspect stretching, measure the chain according to the hoist manufacturer’s instructions.

6.5.1.1.7 Deterioration or damage of end connections and terminations of wire rope, load chains, and synthetic web.

6.5.1.1.8 Hooks damaged from chemicals, cracks, any visibly apparent bend or twist from the plane of the unbent hook, or any distortion causing an increase in throat opening of 5% not to exceed 1/4 inch unless otherwise
recommended by the manufacturer (See hook section for additional hook removal criteria).

6.5.1.9 Hook-retaining nuts or collars and pins, welds, or riveting used to secure the retaining member.

6.5.1.2 No one except the chain manufacturer shall repair the load chain by welding or any other means.

6.6 Rigging Use Requirements

6.6.1 The use of all rigging equipment and below the hook lifting devices must be in accordance with safe work practices recommended by the manufacturer.

6.6.2 Suspended loads must be kept clear of all obstructions. Personnel must be kept clear of suspended loads and those about to be lifted.

6.6.3 Shock loading is prohibited.

6.6.4 Employees are prohibited from rigging a load in a manner that exceeds the rated capacity of the rigging equipment.

6.6.5 Pulling a sling from under a load while the load is resting on the sling may damage the sling and side-load the hoisting equipment. This action is prohibited.

6.6.6 All rigging equipment must be properly labeled.

6.6.7 All rigging must be and be domestically produced. Rigging materials or equipment made in China are not to be used on any Haselden project for any purpose.

6.6.8 When not in use, rigging equipment must be removed from the immediate work area and properly stored and maintained in a safe condition.

6.6.9 Damaged or defective equipment must be repaired or replaced immediately. Rigging equipment removed from service must be clearly tagged "DANGER - DO NOT USE" or else cut and disposed of to prevent reuse. Hooks, shackles, rings, pad eyes and other fittings that show excessive wear or that have been bent, twisted or otherwise damaged, must be removed from service.

6.6.10 Special custom design rigging accessories are sometimes required on units such as modular panels, prefabricated structures, and similar materials. These lifting accessories must be marked with their safe working load limits. Custom designed rigging accessories shall be proof tested to 125 percent of their rated load prior to use.

6.6.11 The use of job made hooks and links, makeshift fasteners, rigging attachments formed from bolts, rods, rebar, mild steel, or other items not designed or rated for rigging is prohibited.
6.6.12 Placing hands and fingers between the sling or rigging hardware and its load while the sling is being tightened or is under tension is prohibited.

6.6.13 Unsecured and suspended loads will **NOT** be left unattended.

6.6.14 Tag lines will be used to control all loads.

6.6.15 Slings, shackles, and other similar rigging equipment must have a designed safety factor of five.

6.6.16 Slings

6.6.16.1 All slings shall be made by a reputable manufacturer.

6.6.16.2 Wire rope slings shall have a minimum length of wire rope 10 times the component rope diameter between sleeves and or end fittings. For example: a 1 inch diameter wire rope sling cannot be less than 10 inches in length from end fitting to end fitting.

6.6.16.3 Sling will be securely attached to their loads.

6.6.16.4 When used in a basket hitch, the loads will be balanced to prevent slippage.

6.6.16.5 Do not place the rating tag of a round sling in a hook, shackle or connecting hardware. Failure of the splice may occur.

6.6.17 Hooks

6.6.17.1 Hooks will be fitted with a safety latch on the hook opening or the hook will be designed so that slings cannot be displaced.

6.6.17.2 Loads shall be applied to the hook only in the bend/bowl of the hook. Point loading shall not be permitted.

6.6.17.3 Hooks will not be used for choking a sling around a load.

6.6.17.4 Shake-out hooks will:

   6.6.17.4.1 Only be used for off-loading and sorting structural steel

   6.6.17.4.2 Be kept close to the ground when lifting loads and in no case will loads be hoisted higher than 6 feet

6.6.18 Shouldered Eyebolts

6.6.18.1 Only shouldered or swivel eyebolts will be used for lifting. Standard eyebolts shall **NOT** be used.

6.6.18.2 When shouldered eye bolts are being used for angular pulls, the manufacturer's recommendations for capacity reductions shall be applied.

6.6.18.3 All shouldered eyebolts will be seated firmly and squarely against the mating surface and have at least 90 percent thread engaged.
6.6.19 Shackles:

6.6.19.1 **Only** original pins may be used with shackles.

6.6.19.2 Rebar, mild-steel bolts, or similar items will **NOT** be used as a replacement for the pin.

6.6.19.3 Pins for shackles will be placed in the hook with the eyes of slings bearing on the shank.

6.6.20 Beam Clamps:

6.6.20.1 Only manufactured beam clamps that are properly sized for the beam to which they are attached will be used.

6.6.20.2 Beam clamps will be securely fastened to the beam.

6.6.20.3 Rigging will be attached to the beam clamp using a shackle.

6.6.20.4 Plate grips, tongs, pipe clamps, C-clamps, etc., will **NOT** be used as a substitute for beam clamps.

6.6.20.5 Beam clamps will **NOT** be used when angle lifts are to be made.

6.6.21 Ratchet Lever Chain Hoist, Cable Come-alongs and Chain falls

6.6.21.1.1 Shall not be loaded in excess of its safe working load limit.

6.6.21.1.2 Shall be designed so that one person can operate the hand chain to lift to the full capacity; only one person at a time will operate the hand chain.

6.6.21.1.3 Shall **NOT** be wrapped around the load to be lifted. The chain needs to be attached to appropriate rigging that is secured to the load.

6.6.21.1.4 Cheaters or handle extensions will not be used.

6.7 Qualified Riggers:

6.7.1 Haselden requires qualified riggers for all hoisting and rigging operations.

6.7.2 The employer must determine whether a person is qualified to perform specific rigging tasks.

6.7.3 The person designated as the qualified rigger must have the ability to properly rig the load for a particular job. It does not mean that a rigger must be qualified to do every type of rigging job.

6.7.4 Each load that requires rigging has unique properties. Past rigging experience man not automatically qualify the rigger to rig unstable, unusually heavy, or eccentric loads that may require a tandem lift, multiple-lifts, or use of custom rigging equipment.
6.8 Use of a Forklift

6.8.1 Loads shall not be lifted by any means other than with the load resting on the forks, unless written approval of the forklift manufacturer is obtained. Free rigging is the direct attachment to or placement of rigging equipment (slings, shackles, rings, etc.) onto the tines of a forklift for a below-the-tines lift. Free rigging is prohibited.

6.8.2 Only those attachments that have been engineered, designed and manufactured for a specific make or model forklift with written approval by the forklift manufacturer will be installed and used.

See next page for all associated Rigging Charts.
7.0 Rigging Charts Reference

7.1 Hand Signals

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**Journeyman Rigger's Reference Card**

<table>
<thead>
<tr>
<th>Sling Capacities</th>
<th>MECHANICAL SPlice IN Pounds</th>
<th>DESIGN FACTOR 6:1</th>
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Formula to find sling length: Total distance between pick points \( \times \) Multiplier = Sling Length

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**Sling Capacities**

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**Rigging Hardware Capacities**

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<th>Master Link 5/16</th>
<th>Shackle 5/16</th>
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**Coefficients of Friction**

- Concrete on concrete: 0.65
- Continuous lubricated: 0.60
- Metal on concrete: 0.50
- Wood on concrete: 0.45
- Steel on steel: 0.15
- Wood on metal: 0.30

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<th>40:1 = 0.83</th>
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<tr>
<td>Wood on concrete</td>
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Inspection Reference Cards

**Rigging Gear Inspection Reference Card**

**Wire Rope Slings**

1. Do not exceed rated capacity.
2. Min. of 10 dia. between sleeves/splices.
3. Consult mfr. below -60°F, over 400°F.
4. Weld/proof test fittings prior to assembly.
5. Remove if:
   - Evidence of heat damage
   - Broken wires = 10/lay, 5 in 1 strand/lay
   - 1/3 wear of outside wires
   - Kinks • Crushing • Unstranding
   - Birddaging • Corrosion
   - Distorted rope structure
   - Damaged end attachments
   - Hooks with 15° spread or 10° twist

1. Slings shall be marked showing mfr., rated load and angle upon which it is based, diameter or size.
2. Do not use knots to form eyes.
3. Use WR clips only if can't prefabricate.
4. Remove if:
   - Broken wires for multi-part slings:
     - Less than 8-part and Cable Lay = 20/lay, 20/braid/lay, 1 strand/sling
   - 8-part or more = 40/lay, 40/braid/lay, 1 strand/sling
   - Core damage • Severe abrasion
1) Use chaffing gear and avoid load slippage.
2) Don't drag slings. Avoid shock loads.
3) Don't choke on fittings, avoid pinch points.
4) Bent hooks or more than 5% spread.
5) Don't place small slings on large hook.

**Alloy Chain Slings**

1. Do not exceed rated capacity.
2. Slings shall be permanently marked with size, grade, rated capacity and reach.
3. Slings shall be thoroughly inspected at intervals no greater than once every 12 months. Records of such inspections must be kept on file.
4. Makeshift links or fasteners made from bolts or rods shall not be used.
5. Worn or damaged slings or attachments shall not be used until repaired.
6. Mechanical coupling or low carbon steel repair links shall not be used to repair broken lengths of chain.
7. Remove if:
   - Heated above 1000°F
   - Cracked/deformed master links.
   - Couplings or other components
   - Hooks are cracked and have been opened more than 13% or twisted more than 10° from plane of unbent hook
   - Reduction in size of links at any point
1) Prior to use, welded components of new slings shall be proof tested to twice rated load.
2) Repaired slings shall be permanently marked with name of repairing agency.
3) Latches on hooks should seat properly, rotate freely, and show no permanent distortion.
4) Slings shall be marked to also show mfr., and number of legs.
5) Check chain and attachments for wear, nicks, cracks, breaks, gouges, stretch, bends, weld splatter, discoloration from excessive temperature, and throat opening of hooks.
1) Bent hooks or more than 5% spread.

**Synthetic Web Slings**

1. Do not exceed rated capacity.
2. Do not use nylon web or aluminum fittings near acids, nor polyester web around caustics.
3. Repaired slings shall be proof tested to twice rated capacity.
4. Stitching is the only acceptable method to attach end fittings and form eyes.
5. Fittings shall be of minimum breaking strength equal to that of the sling.
6. Do not use at temp. in excess of 180°F.
7. Remove if:
   - Acid or caustic burns
   - Melted or charred
   - Snags, punctures, tears or cuts
   - Distortion of fittings
   - Broken or worn stitches
1) Slings shall be permanently marked with:
   a) Manufacturer name and stock number
   b) Rated load for types of hitch(es) and angle upon which it is based.
   c) Type of synthetic web material
2) Remove if:
   - Holes, tears, cuts, snags, crushing
   - Missing or illegible tag
   - Knots in any part of the sling
   - Excessive fitting or corrosion, or cracked distorted, or broken fittings
   - UV/sunlight damage
   - Other visible damage that causes doubt as to the strength of the sling
1) Use padding between sharp edges and sling.
2) Don't drag slings. Avoid shock loads.
3) Bent hooks or more than 5% spread.
4) Do not shorten or lengthen using knots.
5) Personnel stand clear of suspended load.
Roundslings

1) Do not exceed rated load (RL).
2) Slings shall be marked with mfr’s I.D., code/stock #, rated loads for types of hitch(es) and angle upon which it is based, core material and cover material (if different than core).
3) Always consult the manufacturer when using a roundsling in chemically active environments, such as acids or caustics.
4) Repairs of load bearing yarns or fittings are not permitted. Repairs to protective covers shall be done by mfr. or qualified person. Then marked by repair agent and proof tested to 2xRL.
5) Fitting surfaces shall be cleanly finished and sharp edges removed.
6) Fittings shall be of minimum breaking strength equal to that of the sling. Previously used fittings shall be free from defects and proof tested 2xRL.
7) Do not use above 194°F, or below -40°F. Some mfrs. vary.
8) Remove if:
   • Missing or illegible tag
   • Chemical or heat damage
   • Holes, tears, cuts, abrasion, snags, or broken/worn stitching that expose core yarns
   • Fittings that are stretched, worn, cracked, pitted, or distorted
   • Knots in any part of the sling
   • Other damage that causes doubt as to the sling’s strength
9) Prevent cutting with padding.
10) Do not constrict or bunch roundslings by the load, hook or fittings.

Below-the-Hook Lifting Devices

1) A nameplate or other permanent marking shall be affixed displaying the following:
   a) Manufacturer’s name and address
   b) Serial number
   c) Lifter weight, if over 100 lbs (45kg)
   d) Rated load
2) Design factor shall be a minimum of 3, based on yield strength, for load bearing structural components.
3) All welding shall be in accordance with ANSI/AWS D14.1.
4) Exposed moving parts constituting a hazard under normal operating conditions should be guarded.
5) Electrical components and wiring shall comply with Article 610 of ANSI/NFPA 70.
6) During frequent or periodic inspections, any deficiencies, such as listed below, shall be carefully examined, and determination made as to whether they constitute a hazard:
   a) Structural deformation, cracks, or excessive wear on any part of the lifter
   b) Loose or missing guards, fasteners, covers, stops, or nameplates
   c) All functional operating mechanisms for misadjustments interfering with operation
   d) Loose bolts or fasteners
   e) Cracked or worn gears, pulleys, sheaves, sprockets, bearings, chains and belts
   f) Excessive wear of friction pads, linkages, and other mechanical parts
   g) Excessive wear at hoist hooking points and load support clevises or pins

Shackles

1) Do not exceed rated load.
2) Shackles to be marked with size, mfr. and rated load.
3) Remove if:
   • Missing mfr. name, rated load
   • Heat, corrosion, elongation damage
   • Bent, twisted, 10% reduction of dia.
   • Nicks, gouges, thread damage
4) Users trained in shackle selection, inspection, and rigging practices.
5) The screw pin shall be fully engaged.
6) All portions of human body to be kept from between shackle, load, and other rigging during the lift.
7) Applied load should be centered.
8) Reduce rated load if side loaded.
9) When used in a choker hitch, the pin shall be in the eye, not on the body.

Turnbuckles

1) Do not exceed rated load.
2) Turnbuckles to be marked with mfr. and rated load or grade or size.
3) Remove if:
   • Missing or illegible identification
   • Heat, corrosion, elongation damage
   • Bent, twisted, 10% reduction of dia.
   • Nicks, gouges, thread damage
4) Users trained in turnbuckle selection, inspection, and rigging practices.
5) The end fitting threads shall be fully engaged, with extra care in pipe bodies.
6) All portions of human body to be kept from between turnbuckle, load, and other rigging during the lift.
7) Applied load should be in line and in tension. No side loading.
8) Shock loading should be avoided.
Rigging Blocks  ASME B30.26

1) Do not exceed rated load.
2) Blocks to be marked with rope size(s), mfr. and rated load.
3) Users trained in block selection, inspection, and rigging practices.
4) Metal rigging blocks generally used between 0°F and 150°F.
5) Stand clear of suspended loads.
6) Load applied to be in-line with sheave.
7) Block’s rated load is based on rated connection: eye, bail, hook, or shackle.
8) Remove if:
   - Missing mfr. name, rated load
   - Heat, corrosion, elongation damage
   - Bent, twisted, cracked, distorted
   - Broken bearings or sheave wobble
   - Nicks, gouges, wear 10% of original dimension.

Swivel Hoist Ring  ASME B30.26

1) Do not exceed rated load.
2) Swivel hoist ring to be marked with mfr., rated load and torque value.
3) Remove if:
   - Missing or illegible identification
   - Pitting, corrosion, weld spatter
   - Elongation, cracked, broken load bearing components
   - Nicks, gouges, thread damage
   - Bent, twisted, 10% reduction of dia., lack of free rotation or pivot.
4) Users training in swivel hoist ring selection, inspection, and rigging practices.
5) Bushing flange shall fully contact load.
6) Applied load in center of bail.
7) Through-hole, washer/nut shall meet or exceed mfr. specification.
8) Threaded hole, engage 1.5 times bolt dia.

Eyebolts  ASME B30.26

1) Do not exceed rated load.
2) Eyebolts to be marked with mfr. and size, grade or rated load.
3) Remove if:
   - Missing or illegible identification
   - Pitting, corrosion, weld spatter
   - Elongation, cracked, broken load bearing components
   - Nicks, gouges, bent, twisted
   - Thread damage, heat damage
   - 10% reduction of original dimension
   - General temperature range is 30° - 275°F.
4) Users trained in eyebolt selection, inspection, and rigging practices.

Wedge Sockets  ASME B30.26

1) Do not exceed rated load.
2) Socket and wedge to be marked with mfr. and size, applicable model numbers.
3) Remove if:
   - Missing or illegible identification
   - Pitting, corrosion, weld spatter
   - Elongation, cracked, broken load bearing components
   - Nicks, gouges, bent, twisted
   - Thread damage, heat damage
   - Indications of wire rope slippage
   - 10% reduction of original dimension
   - Unauthorized replacement component
4) Users trained in wedge socket selection, inspection, and use.
HOISTING AND RIGGING HAND SIGNALS

EXTEND BOOM  DOG EVERYTHING  TRAVEL  RETRACT BOOM

EXTEND BOOM (ONE HAND)  RETRACT BOOM (ONE HAND)

USE MAIN HOIST  USE WHIP LINE  RAISE BOOM  LOWER BOOM

MOVE SLOWLY  RAISE THE BOOM & LOWER THE LOAD  LOWER THE BOOM & RAISE THE LOAD  SWING

EMERGENCY STOP  STOP
1.0 Purpose

1.1 This program outlines the minimum requirements for installing torch applied roofing systems, hot tar/asphalt roofing, thermoplastic roof membranes, staging, set-up, and the use of roofing equipment.

2.0 Scope

2.1 This program applies to all Haselden and subcontractors roofing operations as applicable.

2.2 Roofing operations will use the Haselden Fall Protection Policy, Personal Protective Equipment Procedures and Fire Prevention and Protection Program.

3.0 Definitions

3.1 **Torch Applied Roof System**: Roofing systems that using membranes that are adhered by heating with a torch and melting the asphalt coating.

4.0 Reference Documents

4.1 29 CFR 1926 Subpart M Fall Protection

4.2 29 CFR 1910.134 Respiratory Protection

4.3 HASELDEN – Fall Protection Policy

4.4 HASELDEN – Fire Prevention and Protection Program

4.5 HASELDEN – Personal Protective Equipment

4.6 HASELDEN – Pre-Task Plan JHA

4.7 HASELDEN – Work Site Analysis

4.8 HASELDEN – Compressed Gas Cylinders

4.9 HASELDEN – Respiratory Protection Program

4.10 Haselden HAZCOM Program

5.0 Responsibilities
5.1 Site Superintendent(s):

5.1.1 To supervise the implementation of this program.

5.1.2 To enforce disciplinary action for violations of this program.

5.2 Roofing Contractor Superintendents/Foremen:

5.2.1 To train their employees on safe operating procedures for the specific roofing system being installed.

5.2.2 To conduct weekly safety inspections for their activities.

5.2.3 To administer disciplinary action for violation of this program, and the subcontractor's safety plan.

6.0 Implementation

6.1 General

6.1.1 Subcontractors will evaluate hazards and will develop a detailed Job Hazard Analysis for submittal to the Haselden jobsite management team for review and acceptance.

6.1.1.1 Train employees on the selection, safe use, limitations, inspection and maintenance of equipment necessary to complete the task.

6.1.1.2 Stage roofing materials to avoid over loading and damaging the structure.

6.1.1.3 Plan fall protection for all work, including fall protection for employees engaged in the installation of fall protection systems.

6.1.1.4 Provide protection of employees from hazardous weather conditions.

6.1.1.5 Provide a list of chemicals and their quantities that will be staged on the roof.

6.1.1.6 Plan methods of getting employees, material and equipment onto the roof.

6.1.1.7 Identify when respirators will be used to protect employees from a respiratory hazard. When respirators must be worn, a written respiratory protection program will be required.

6.1.2 Subcontractors will conduct periodic inspections throughout the duration of roofing work.

6.1.2.1 Inspections will be performed by a competent person.
6.1.2.2 Inspectors will assess all equipment, including safety devices that are used to handle and transport materials onto the roof, for adequacy, proper use and stability.

6.1.2.3 Immediate action will be taken to correct any deficiencies identified during the inspection.

6.1.3 All roofing installation that requires a spark or flame for installation must be covered by a hot work permit.

6.2 Planning

6.2.1 Every phase of roofing installation will be planned in detail to:

6.2.1.1 Identify and manage inherent dangers and ensure employees' health and safety.

6.2.1.2 Control the quality.

6.2.1.3 Eliminate or minimize any environmental exposure or potential for property damage.

6.2.2 Several key components of this planning process involve daily assessment and preparation for each task.

6.2.2.1 Safe access to the work.

6.2.2.2 Fall protection

6.2.2.3 Ensuring the appropriate material and equipment needed to safely perform the work is available.

6.2.2.4 Tools and equipment must be properly maintained and kept in safe operating condition.

6.2.2.5 Adequate storage must be available.

6.2.2.6 Note the location of exposed electrical lines and take measures to de-energize, insulate, or maintain a safe distance.

6.2.2.7 Verify that skylights and other openings in the work area are properly covered or guarded.

6.2.2.8 Have a plan for securing materials in the event of high winds

6.3 Roofing Systems/Applications

6.3.1 Torch applied roofing systems:

6.3.1.1 A hot work permit is required.

6.3.1.2 The work will be monitored by a competent person.
6.3.1.3 Torches and torch units will be:
   6.3.1.3.1 Inspected by a competent person.
   6.3.1.3.2 Equipped with a pilot adjustment and flame height adjustment.
   6.3.1.3.3 Equipped with a gauge, regulator, and 25-50 feet of hose. Torch equipment shall be listed by a recognized approval agency.
   6.3.1.3.4 Set in their support leg position with torch head pointing at an upward angle when not in use during the work shift. Torches shall not be left unattended while burning fuel.
   6.3.1.3.5 Lit with a torch striker.
   6.3.1.3.6 **NOT** be used directly on insulation, wood, other combustible materials, flashing, corners, roof deck, any combustible material, or in an area where the surface being heated cannot be seen.

6.3.1.4 Only approved LP-gas containers or bottles will be used.
   6.3.1.4.1 LP-gas containers will be protected from temperatures above 120ºF.
   6.3.1.4.2 When shutting off the torch, the fuel gas cylinder valve will be closed **first** and the remaining gas in the hose burned off before closing the torch valve.

6.3.1.5 At least one 10-ABC fire extinguisher will be within 20 feet of any torch operator.

6.3.1.6 Personnel not operating torch shall be at least 10 feet from the torch while it is being used.

6.3.2 Thermoplastic Roof Membranes:
   6.3.2.1 Personnel operating thermoplastic hot-air welding equipment must be trained and certified by the roof system manufacturer.
   6.3.2.2 Thermoplastic hot-air welding equipment will not be used in the rain or where surfaces are wet.
   6.3.2.3 GFCIs will be used at the electrical power source for hot-air welding equipment.
   6.3.2.4 Electrical cords and cord caps will be installed and inspected by a qualified person.
6.3.2.5 Overheating of thermoplastic membranes will be avoided; overheating can result in the release of harmful chemicals.

6.3.2.6 Subcontractor will determine if respiratory protection is required.

6.3.3 Hot Bitumen Roofs:

6.3.3.1 Face shields and safety glasses must be worn for eye and facial protection during preparation, transportation, and application of hot tar.

6.3.3.2 To prevent hot tar exposure, workers need to wear arm guards that cover their gloves, or wear long cuffed gloves underneath their long sleeve shirts, or tape their gloves to their long-sleeved shirts.

6.3.3.3 Use mop carts with wheels and push handles to transfer tar to application point instead of hand held buckets. If buckets are needed for certain applications, this should be addressed in the detailed Job Hazard Analysis before work commences.

6.3.3.4 If buckets must be used, never fill a bucket more than three quarters full.

6.3.3.5 Keep lids closed on kettles and other items so equipped.

6.3.3.6 Prevent unnecessary employee and bystander exposure to hot tar by using barriers to keep people away from all hot tar operations.

6.3.3.7 All affected employees need to be trained on hot tar roofing hazard recognition and control.

6.3.3.8 Keep buckets of water nearby for first aid and follow first aid procedures for hot tar injuries.

6.3.3.9 If tar is on skin, cool the tar immediately with large amounts of water to prevent the burn from going deeper.

6.3.3.10 Do not use gasoline to remove tar, for this may cause a chemical burn, be absorbed systemically and cause organ damage. Removing the tar is not a medical emergency. Tar should only be removed by a medical professional.

6.4 Fall Protection

6.4.1 Roof monitoring is prohibited.

6.4.2 Guardrails and Personal Fall Arrest Systems are the primary methods of providing fall protection for employees.

6.4.3 Warning lines shall be used only when approved by the HC Safety Director or his designee. Warning lines shall be
established 15 feet from all unprotected edges when other trades must access the roof during roofing operations.

6.4.4 Refer to the Haselden Fall Protection Procedure for specific Warning Line provisions.

6.5 Fire Prevention/Protection

6.5.1.1 A hot work permit is required for roofing system application that involves flame, heat or sparks.

6.5.1.2 Accumulation of combustible debris will be kept to a minimum, and a minimum of 35 feet clearance from all hot work.

6.5.1.3 The competent person will ensure hot work is stopped at least:

6.5.1.3.1 **Two hours** before the end of the shift.

6.5.1.3.2 **One hour** if an infrared thermometer is used.

6.5.1.4 Ensure torches and bottles are disconnected at the end of each shift.

6.5.1.5 Ensure at least one 10-ABC fire extinguisher will be within 20 feet of any hot work.

6.5.2 Flammables and Combustibles

6.5.2.1 If flammable or combustible liquids must be used or stored on the roof:

6.5.2.1.1 Only approved metal safety cans (approved by a nationally recognized testing laboratory) will be used to store and dispense fuels.

6.5.2.1.2 Safety cans will be constructed of metal, have self-closing lids, flash screens, and pouring spouts.

6.5.2.1.3 All containers shall bear GHS compliant labels.

Refer to the Haselden Compressed Gas Cylinders, Hazardous Communication Program and Fire Prevention and Protection procedures.

6.6 Personal Protective Equipment

6.6.1 Employees’ exposure to harmful dusts and vapors will not exceed the Occupational Exposure Limit (OEL) unless exposed personnel use the appropriate respiratory protection. The use of respirators to protect employees from respiratory hazards requires a written respiratory protection plan, medical evaluation, fit testing, and employee training. Refer to the HC Respiratory Protection Program.

6.6.2 All personnel will wear at a minimum:
6.6.2.1 Hard hats.
6.6.2.2 Goggles or safety glasses with side shields.
6.6.2.3 Long-sleeved *cotton* shirts, button at the cuffs and within one button of the collar.
6.6.2.4 Properly-fitting cotton trousers, without cuffs, that extend over the tops of boots.
6.6.2.5 Boots (at least ankle-height) with thick nonskid soles.
6.6.2.6 Heat-resistant gloves with snug-fitting cuffs.

6.7 **Personnel Qualifications and Training**

6.7.1 Subcontractor management shall:

6.7.1.1 Ensure that employees involved in material or equipment staging on the roof, install roofing material, and installing or maintaining fall protection systems are trained on the potential hazards associated with the work.

6.7.2 The subcontractor will provide personnel working at heights six feet or more above adjacent walking/working surfaces training in recognizing and controlling fall hazards.

7.0 **Attachments**

7.1 N/A
1.0 Purpose

1.1 This document describes the policy for the safety alert communication system implemented by the Haselden Safety Department.

2.0 Scope

2.1 This document applies to Haselden Construction Safety Communication.

3.0 Definitions

3.1 **Alert**: a communication system for any new issue or change to a safety process, policy, procedure, or any news related to construction safety or the construction environment that needs to be communicated to Haselden Employees.

3.2 **Technical Alert**: A best practices or technical information bulletin. Examples: near miss, product recall.

3.3 **Safety Flash Alert** – A safety bulletin alerting employees to a hazard or incident.

3.4 **Best Practice Alert** – A bulletin advising employees of new methods or best practices.

4.0 Reference Documents

5.0 Responsibilities

5.1 **Site Superintendent**

   5.1.1 Will review all safety alerts with Haselden employees on site.

   5.1.2 Distribute safety alerts to those subcontractors whose work may be affected.

   5.1.3 Post all safety alerts on the safety information board.

5.2 **Director of Health and Safety or Designee**

   5.2.1 Will review and approve all alerts prior to distribution to Haselden and subcontractor employees.
5.3 **Safety Staff**

5.3.1 Provide ideas and subjects for future alerts.

5.3.2 Create alerts and send those documents to the Director of Safety and Health for review and approval.

5.4 **All Haselden employees**

5.4.1 Review and discuss all published alerts and post on all job sites.

5.4.2 Provide ideas and subjects for future alerts.

6.0 **Implementation**

6.1 Get useful information about a given safety topic out in a quick and efficient way.

6.2 Alerts will be sent out through email, posted on the Haselden website, or be given out in hard copy.

6.3 Alerts need to be discussed either in a special meeting, or in the next tool box talk meeting. Attendance must be documented.

6.4 Alerts should be given to subcontractors especially those that perform work that is affected by the alert.

6.5 Alerts will be posted at the jobsite on the safety bulletin board or where other documents are posted for view.

7.0 **Attachments:**

7.1 Safety Flash Alert

7.2 Best Practice Alert
Not Following Erection Procedures

Many of our projects have site specific erection plans and procedures developed by our Preconstruction Department. These plans and procedures have been designed and evaluated by qualified people to determine the safest way to rig the loads and assemble the parts and pieces. Where site specific erection plans are established, we are required to follow those plans. When site constraints require deviations or alterations to the original plan we must have review and approval from Preconstruction Department.

What Happened?

On one of our current projects, we had a serious incident where the site specific erection plan was not followed and resulted in a truss partially rolling over. As the truss was being hoisted from the ground in an upright position it started to roll over causing a large bow in the center of the truss. During the tandem pick, the rigging points used to hoist the truss deviated from the original plan and the end result caused the truss to roll over. Fortunately there was no serious damage or injury involved however there was a serious potential for much worse complications such as crane collapse, damage to occupied aerial lift, or injury to employees working in the vicinity.

Best Practice!

- Always follow site specific erection procedures.
- Review site specific erection procedure with all employees involved.
- Critical lift permit and pre-lift meeting required for every critical lift.
- Utilize stop work authority if any employees have concerns about the lift.
**Best Practice Title Here**

Many of our projects have site specific erection plans and procedures developed by our Preconstruction Department. These plans and procedures have been designed and evaluated by qualified people to determine the safest way to rig the loads and assemble the parts and pieces. Where site specific erection plans are established, we are required to follow those plans. When site constraints require deviations or alterations to the original plan we must have review and approval from Preconstruction Department.

---

**Why is this a Best Practice?**

On one of our current projects, we had an incident where the site specific erection plan was not followed and resulted in a truss partially rolling over. As the truss was being hoisted from the ground in an upright position it started to roll over causing a large boom to strike the center of the truss. During the lifting operation, the sagging points used to hoist the truss deviated from the original plan and the end result caused the truss to roll over. Fortunately there was no serious damage or injury involved however there was a serious potential for much worse complications such as crane collapse, damage to occupied aerial lift, or injury to employees working in the vicinity.

---

**Best Practices!**

- Always follow site specific erection procedures.
- Review site specific erection procedure with all employees involved.
- Critical lift permit and pre-lift meeting required for every critical lift.
- Utilize stop work authority if any employees have concerns about the lift.
1.0 Purpose

1.1 Provide an avenue and structure to correct hazards and document those findings.

1.2 To help maintain compliance with regulatory bodies and with the overall Haselden Construction Safety Program.

1.3 Safety Inspections are conducted in order to:

   1.3.1 Identify and document hazards
   1.3.2 Correct hazards in a timely manner and document corrections.
   1.3.3 Follow up on serious or repetitive findings to prevent recurrence.

2.0 Scope

2.1 This program applies to all Haselden projects.

3.0 Definitions

4.0 Reference Documents

5.0 Responsibilities

5.1 Project Superintendent

   5.1.1 Ensure that all safety inspections for the job site are completed on a weekly basis and are documented through the Compliance Wise inspection system. Project Superintendents will also ensure that uncontrolled hazards and non-compliances are corrected in a timely manner. Written documentation of corrective actions must be included.

   5.1.2 Ensure completion and documentation of one weekly computer based safety inspection.

   5.1.3 Coordinate the participation of the entire project team in conducting and documenting a weekly safety inspection report on ComplianceWise.
5.2 **Superintendent**

5.2.1 Conduct and document an electronic weekly safety inspection report or delegate the responsibility.

5.3 **Safety Manager**

5.3.1 To assist the project superintendent with compliance with this program.

5.3.2 Train employees on the correct procedures and documentation processes to complete a safety inspection.

5.3.3 Train site employees to complete weekly ComplianceWise inspections.

5.4 **Director of Safety and Health**

5.4.1 Oversee compliance with this program including performing random audits and reviewing documented inspections.

5.4.2 Assist in the training of employees to properly complete safety inspections.

6.0 **Implementation**

6.1 A job site safety inspection is required at the start of each project. The inspections must be repeated every seven (7) calendar days thereafter on all field activities. The inspection report should be documented in the ComplianceWise safety inspection system along with pictures of the findings and corrections. All issues must be closed out in a timely fashion. Exceptions may be granted due to work stoppages during holidays or other job specific shutdowns.

6.2 Paper copies of job site safety inspections are required and permitted only if there is no internet capability on the project site and an exception is made by the Haselden Director of Safety and Health or his Designee.

6.3 Paper copies of job site safety inspections will be maintained at the job site for the duration of the project. Upon completion of the project, all inspection records will be sent to the Safety Department for long-term storage for a minimum of eight years from the completion of the project.

6.4 Haselden Construction views safety as a team activity and therefore expects everyone on its project teams to participate in project safety inspections. Mentoring and training are encouraged for those team members who have not conducted a weekly safety inspection report in the past.

6.5 **Paper Safety Inspection Report Instructions:**

6.5.1 Inspectors will walk around the entire job site, checking off each item on the Job Site Safety Inspection form. Every item on the form must be marked “Yes”, “No”, or “N/A” (not applicable).
6.5.2 Every “No” answer requires an explanation of the specific problem and what is being done to correct the problem. Use the Comments section at the end of the Inspection form to record this information.

6.5.3 Every “No” answer that is not immediately corrected must be tracked on each Job Site Safety Inspection report, until the item has been completely corrected. All items must be closed out in a timely fashion.

6.5.4 “Yes” answers or good observations should also be documented. Use the comments section at the end of the section to record good observations.

6.5.5 Inspectors may add site-specific hazards that are not included in the prepared list of inspection items. Such site-specific hazards should be written in at the end of the inspection checklist.

6.5.6 Inspectors will sign and date the last page of each Inspection form and turn in the form to the Project Superintendent.

6.5.7 Results of each weekly Job Site Safety Inspection must be reviewed at the next safety meeting or project meeting with employees on-site.

6.5.8 Rarely will a thorough inspection result in 0 findings or everything marked “Yes”. If this occurs please reevaluate the inspection for missed or overlooked items.

6.6 Computer Based Safety Inspection Instructions:

6.6.1 Inspectors will walk the entire site taking pictures of safety observations for record. Observations can be documented as a finding, recommendation or a correction.

6.6.2 When a finding is corrected a picture will be taken of the correction.

6.6.3 Rarely will a thorough inspection result in 0 findings. If this occurs please reevaluate the inspection for missed or overlooked items.

6.6.4 Log into computer based compliance wise inspection system at https://haselden.compliancewise.net.

6.6.5 Certain areas of some projects may experience slow internet speeds, causing the ComplianceWise software to freeze. It is important to save your work after each finding so data will not be lost if you enter an area with poor connectivity. It is recommended that photographs be taken outside of ComplianceWise during these conditions, then uploaded into ComplianceWise Findings or Recommendations when adequate connectivity is restored.

6.6.6 Click on the Safety tab, select the small yellow box labeled “New Inspection”.
6.6.7 From the drop down list, select the project. If your project does not appear, contact the Safety Department to set up the project and Project Permissions.

6.6.8 Follow the prompts to complete information missing from the Project, Project Responsible Party or Inspection tabs.

6.6.9 From the dropdown list, select an inspection type. Jobsite staff will select Weekly Safety Inspection. Safety Department staff will select Random Inspection.

6.6.10 Save your work.

6.6.11 Verify the contact access list and email recipients for this inspection report. Recipients may be added or deleted in this screen. Then, select "Next".

6.6.12 Verify your name and date, then select "Next".

6.6.13 Select the “Findings” tab to make safety hazard observations or the “Recommendations” tab to record other items.

6.6.14 Select the blank page icon to enter either the Findings or Recommendations screens.

6.6.15 Save your work regularly from this point.

6.6.16 Beneath the left hand window, select “Upload Photo”. Take a photo of a safety violation or Finding, or select one from your device drive. Save the photo.

6.6.16.1 If the photo is taken or uploaded, the time and date will automatically be recorded.

6.6.16.2 If the photo comes from another device, make sure the time and date is accurate. Correct if necessary.

6.6.17 Select Category, then Subcategory.

6.6.18 Select a Severity Rating based on the description found by selecting the Question Mark.

6.6.19 Type in a description of the finding.

6.6.20 Type in a corrective action.

6.6.21 Select the party responsible for the finding. If the responsible organization is not found on the drop down list, they can be added to the list.
6.6.22 If the finding is corrected immediately, take a photograph of the correction. Make sure time and date is accurate.

6.6.22.1 Select “Yes” from the drop down “Correction Attempted”.

6.6.22.2 Set the Severity Rating to Zero.

6.6.23 If the inspection is completed and the finding is uncorrected, finalize the inspection and send the initial email. As corrections are made, take and upload a completion photo and add a description on the right side of the page. Then, complete steps 6.6.20.1 and 6.6.20.2.

6.6.24 Don't forget to save your work.

6.6.25 Upload any attachments.

6.6.26 Select the Report Information tab, then select Email.

6.6.27 Fill out the Initial Inspection Email, Including any important information, details or explanations, then save. Send the email.

6.6.28 If there are open findings, a Follow-up Inspection Email must be sent after all findings are closed.

6.6.29 If there are any issues regarding this process please contact the Safety Department Manager for assistance.

6.7 Training

6.7.1 Any Haselden employee required to perform a safety inspection will be trained on hazard identification, severity, and control measures and how to properly document those findings.

6.7.2 Further training will be required if the safety inspection reports require improvement.

6.8 Review

6.8.1 If a jobsite employee other than the Superintendent performs the inspection, or if the inspection is completed by a member of the Safety Department, immediately review the findings with the Superintendent so they may be corrected timely.

7.0 Attachments:

7.1 Jobsite Inspection Report Form
**SAFETY INSPECTION REPORT**

<table>
<thead>
<tr>
<th>JOB NAME:</th>
<th>JOB #:</th>
<th>DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSPECTOR NAME:</td>
<td></td>
<td>SIGNATURE:</td>
</tr>
</tbody>
</table>

**GENERAL WORK ENVIRONMENT**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are all work areas clean and orderly?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are work areas and Access /Egress areas adequately lighted?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all posters/TBTs/SDSs/Emergency #s and Procedures onsite and/or posted?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are / First aid kits/Trauma bags full and inspected monthly?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are JHAs and weekly work plans being filled out and signed?</td>
<td></td>
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<tr>
<td>Is material stacked to prevent it from falling and is proper material handling being done?</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**PERSONAL PROTECTIVE EQUIPMENT**

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ANSI type II reflective vests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Glasses (Face shields if needed, Goggles if needed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work boots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardhats</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory protection available?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing protection available?</td>
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<td></td>
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</tbody>
</table>

**FIRE PROTECTION AND PREVENTION**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a properly inspected ABC fire extinguisher for every 3000 sq. ft. of work area?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are fire extinguishers clearly visible and unobstructed at all times?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are compressed gas cylinders being stored properly?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Is welding or other hot work being conducted properly?</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**FALL PROTECTION**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are holes and other openings properly guarded?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are handrails on all stairways having four or more steps?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Are employees exposed to falls of 6’ or greater using 100% fall protection?</td>
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<td></td>
</tr>
<tr>
<td>Do all elevated surfaces have guardrails at least 42 +/- 3 inches high?</td>
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<tr>
<td>Are all elevated surfaces equipped with a safe means of access?</td>
<td></td>
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<td></td>
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<tr>
<td>Is rebar or other protrusions protected by covers to prevent impalement injuries?</td>
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<td></td>
</tr>
</tbody>
</table>

**PORTABLE LADDERS**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are all ladders maintained in good condition including applicable stickers?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are ladders being used properly for their designed purpose only? (Step /Extension)</td>
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</tr>
</tbody>
</table>

**SCAFFOLDING**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are scaffolds set up on level, stable ground with dry footings?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Has the scaffold been assembled, tagged, and inspected by a competent person today?</td>
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</tr>
<tr>
<td>Do all scaffolds higher than 4’ have 42-inch-high toprails, midrails, and toeboards?</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Are scaffolds in good working condition with no damaged or missing parts?</td>
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</tr>
<tr>
<td>Is there safe access to the scaffold?</td>
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</tr>
<tr>
<td>Is the scaffold being used properly?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>ELECTRICAL</strong></td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>----------------</td>
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<td>-----</td>
</tr>
<tr>
<td>Are all electrically-operated tools double insulated or effectively grounded?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are GFCIs provided on all “construction use” electrical circuits?</td>
<td></td>
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</tr>
<tr>
<td>Are all electrical rooms/panels secured and have proper signage?</td>
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</tr>
<tr>
<td>Are all extension cords 12 gauge or better, with no damage, and have 3-prongs intact?</td>
<td></td>
<td></td>
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<tr>
<td>Are all extension cords protected from sharp edges, vehicles, and hung up 7’ or higher by nonconductive materials?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Are electrical circuits and equipment shut off, de-energized and locked out before equipment installation, repairs, maintenance, or servicing?</td>
<td></td>
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</tr>
</tbody>
</table>

**COMMENTS:**

<table>
<thead>
<tr>
<th><strong>TRENCHING AND SHORING</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are spoils, materials and equipment set back a minimum of 2’ from edge of excavation?</td>
<td></td>
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<tr>
<td>Are trenches protected from cave-ins at 5’ deep or greater?(Sloping, Shoring, Shielding)</td>
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<tr>
<td>Is a means of egress in trenches that are 4’ deep or more within 25’ of workers?</td>
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<tr>
<td>Is fall protection and barricades being used around excavations 6’ or deeper?</td>
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</tbody>
</table>

**COMMENTS:**

<table>
<thead>
<tr>
<th><strong>EQUIPMENT</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are Aerial lifts in new or like new condition and being used properly?</td>
<td></td>
<td></td>
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<tr>
<td>Is fall protection being used in both scissor and boom lifts?</td>
<td></td>
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<tr>
<td>Are vehicles and equipment inspected, and are operators wearing their seatbelts?</td>
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<tr>
<td>Are Cranes inspected/ operators certified/ set up properly/all paperwork in?</td>
<td></td>
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<td></td>
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<tr>
<td>Is all rigging inspected and being used properly? Are qualified riggers documented?</td>
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</tbody>
</table>

**COMMENTS:**

<table>
<thead>
<tr>
<th><strong>TOOLS</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>Are employees operating powder actuated tools trained, documented and signs posted?</td>
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<tr>
<td>Are damaged and defective tools removed from service/repaired/replaced immediately?</td>
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<tr>
<td>Are grinders, saws, and other tools properly guarded?</td>
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</tbody>
</table>

**COMMENTS:**

<table>
<thead>
<tr>
<th><strong>TRAFFIC CONTROL</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>Are proper signs placed on road to alert drivers on construction danger ahead?</td>
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<tr>
<td>Are cones and barricades used in the street at least 28” high?</td>
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<tr>
<td>Have flaggers been properly trained and carrying their flagger certification card?</td>
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</tbody>
</table>

**COMMENTS:**

**ADDITIONAL COMMENTS:**

Any items to note for follow up for next tool box talk or job-wide meeting?
1.0 Purpose

1.1 The site Project Superintendent is responsible for ensuring that safety meetings take place that employees attend the meetings, and that safety meetings are documented in writing.

2.0 Scope

2.1 This program covers all Haselden projects and related work.

3.0 Definitions

4.0 Reference Documents

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Has the overall responsibility to ensure compliance with this program.

6.0 Implementation

6.1 Weekly Safety Meetings

6.1.1 On Haselden Construction projects with two or more Haselden Construction employees, supervisors will conduct weekly safety meetings with project employees. These meetings may also include Haselden Construction subcontractor personnel.

6.1.2 Weekly safety meetings will include, but are not limited to, the following topics:

   6.1.2.1 Results of the most recent Job Site Safety Inspection;

   6.1.2.2 Identify hazards and develop control measures for any new hazards at the work site;

   6.1.2.3 Review SDS for new chemical hazards before being exposed.

   6.1.2.4 A review of work activities performed by other employers on-site that may affect the safety and health of Haselden employees.

   6.1.2.5 Discuss causes and corrective actions for work-related incidents, near misses, injuries or illnesses since the last meeting;
6.1.2.6 Respond to employee or customer safety concerns raised at previous safety meetings;

6.1.2.7 Review Haselden Safety Department Safety Flashes and Best Practice bulletins.

6.1.2.8 Discuss new employee or customer safety concerns or complaints.

6.1.2.9 Present commendations or other positive recognition of employees who demonstrate outstanding safety and work performance.

6.2 Monthly or Site Facility Safety Meetings

6.2.1 The job site will conduct monthly safety meetings, at a minimum. Best Practice is to conduct job-wide safety meetings on a weekly basis. All job site employees are required to attend these meetings unless absent due to illness, disability, approved vacation, or approved leave of absence.

6.2.2 Employees who are absent from work at the time of the monthly safety meeting must be informed of the topics and details of the safety meeting by their supervisor when the employee returns to work.

6.2.3 Monthly site safety meetings will include those topics listed in 6.1 above, in addition to the following topics:

6.2.3.1 Results of any Haselden Construction safety audits and inspections since the last meeting;

6.2.3.2 New equipment or safety procedures that have been implemented since the last meeting;

6.2.3.3 Respond to employee safety concerns that were raised at previous safety meetings;

6.2.4 Monthly project safety meetings will also include at least one specific safety topic that is applicable to the work assignments of site employees. These topics may include specific subjects that require annual refresher training.

6.2.5 Project Superintendents may assign responsibility for presenting specific safety topics to qualified Haselden Construction employees, in order to broaden participation and support for Haselden Construction safety and health programs. Project Superintendents may contact the Safety Department for assistance in obtaining training materials for monthly safety meetings.

6.2.6 Project superintendents and foremen will discuss safety findings at the weekly subcontractor coordination meeting.

6.3 Record Keeping
6.3.1 All safety meetings will be documented on the attached Safety Meeting Report, or an equivalent form that contains the same minimum information. A copy of any handouts and training materials that are presented must be attached to the Safety Meeting Report.

6.3.2 Employees attending the safety meeting must sign the Safety Meeting Report at the end of the meeting to document their attendance. Signatures and legible printing of names are both required.

6.3.3 Safety Meeting Reports and attachments must be stored on the project site for the duration of the project. Scanned copies of the weekly safety inspection report must be uploaded in the Compliance Wise inspection system. All hard copies will be forwarded to the Safety Department for permanent record keeping in the Safety Filing System at the completion of any project. Files will be maintained for a minimum of eight years from the completion of the project.

7.0 Attachments:

7.1 Safety Meeting Report
SAFETY MEETING REPORT  
(Print clearly)

Date: ___________  Meeting Leader: ______________________________

Job Site Location: ________________________________

Subjects Discussed: ________________________________

_________________________________________________________________

_________________________________________________________________

My name and signature below mean that I attended this safety meeting and that I had an opportunity to discuss the subjects that were presented and to ask questions.

<table>
<thead>
<tr>
<th>PRINT Name</th>
<th>SIGN Name</th>
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</table>
1.0 Purpose

1.1 For subcontractors to prepare and submit information regarding hazards they anticipate on a jobsite and employee training they have provided that will assist employees in recognizing and minimizing or eliminating those hazards.

1.2 To assist Haselden supervisors with ensuring that Haselden employees have completed OSHA required training before they are exposed to certain hazards in the workplace.

1.3 For designation of Competent Persons as required by OSHA.

2.0 Scope

2.1 The employer must train each affected employee in a manner required by an OSHA standard. (29 CFR 1926.20(f)(2)

2.2 The employer is required to instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposures to illness or injury. (29 CFR 1926(b)(2)

2.3 Worksite Analysis is an effective means of identifying training and instruction required by the OSHA standards. Worksite analysis involves worksite examination and planning to identify existing hazards as well as conditions and operations in which changes may occur to create hazards. OSHA Safety and Health Management Guidelines (b)(2).

3.0 Definitions

3.1 Competent Person: A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

3.2 Qualified Person: A person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

4.0 Reference Documents

4.1 29 CFR 1926.20(f)(2) Training
4.2 29 CFR 1926.21(b)(2) Instruction in Hazard Recognition

4.3 29 CFR OSHA Guidelines 54:3904-3916(b)(2) Worksite Analysis

4.4 29 CFR 1926.32(f)

4.5 29 CFR 1926.32(l)

4.6 OSHA Letter of Interpretation, 29 CFR 1926, April 15, 1992, Mr. Don Bollinger

4.7 Haselden Hazard Analysis and Safety Planning policy

4.8 Haselden Site Specific Safety Plan

4.9 HC HAZCOM Policy

5.0 Responsibilities

5.1 Site Superintendents:

5.1.1 Shall be responsible for implementing this procedure.

5.1.2 Shall prepare a Hazard Checklist to identify training needs for Haselden employees working on the project.

5.1.3 Shall ensure that Haselden employees are trained in accordance the Employee Qualification Matrix before being exposed to the associated hazards.

5.2 Safety Department:

5.2.1 Shall assist the project team by providing HC employees with training to minimize or eliminate hazards identified on the Hazard Checklist.

5.2.2 Shall keep HC employee training records identified on the Employee Qualification Matrix.

6.0 Implementation

6.1 General Safety and Health training

6.1.1 Manager and Supervisors will be trained on construction hazard recognition and control. Safety and health leadership and responsibilities will also be taught to management employees.

6.1.2 All Haselden employees will be trained on Haselden’s IIPP (Safety Policy), safe work practices, recognition of physical and health hazards, and ways to control or eliminate hazards.

6.1.3 Each training class will use an appropriate method, written or oral, to assess the effectiveness of employee comprehension of the subject
manner. No matter what method is used it must be properly documented.

6.1.4 All Haselden employees are required to attend an OSHA 10 hour construction training before starting work.

6.1.5 Returning Haselden employees are required to attend OSHA 10 hour construction training if they have not attended one within the last year.

6.1.6 Project and Field Management employees are asked to attend OSHA 30 hour construction training within 6 months of hire date.

6.1.7 All Subcontractor employees must be trained to perform their work in a safe and healthy manner, and are responsible for following Haselden’s safety policy.

6.1.8 All employees and vendors working on a project for more than one day must attend a site specific safety orientation. See Haselden’s Project Safety Orientation program.

6.2 Job specific training

6.2.1 Employees will be trained on subjects depending on their specific job requirements. Those subjects are found in Attachment 7.2, Employee Qualification Matrix.

6.3 Hazard Checklist

6.3.1 Subcontractor shall prepare the Hazard Checklist (see attachments), identifying which definable features of work their employees will be performing. Subcontractor representatives will meet with HC management prior to beginning work to discuss in general the hazards that employees will be exposed to. Comments may be added as the hazards are discussed. Attendees shall sign and date the Hazard Checklist, and follow-up action shall take place as required.

6.3.2 Haselden superintendents shall prepare the Hazard Checklist for work to be performed by HC employees.

6.3.3 The Hazard Checklist shall be used as a basis for preparing Job Hazard Analyses for submittal to the Haselden Superintendent daily with the Plan of the Day. See Haselden Hazard Analysis and Safety Planning Policy.

6.4 Employee Qualification Matrix

6.4.1 Based on the Hazard Checklist, the subcontractor shall identify requirements for training their employees based on OSHA standards. The subcontractor shall prepare the Employee Qualification Matrix (see attachment) and maintain it as a checklist for compliance with training requirements as well as for tracking training needs for their employees.
6.4.2 Haselden superintendents shall prepare an Employee Qualification Matrix for Haselden employees performing work on the project.

6.4.3 If at the time of submittal it is not possible to identify employees that will be assigned to the project, identify the training required for each craft trade or classification.

6.4.4 Subcontractors shall submit the Employee Qualification Matrix for review by the jobsite staff. Update as training requirements are completed. Ensure training is done before the work is performed.

6.5 **Competent Person Designation**

6.5.1 All work activities must have a competent person to oversee that task. Each competent person will have their picture posted in Haselden’s trailer with a list of their areas of competencies. Every competent person will have a ‘Competent Person Designation’ form filled out and on file at the project, signed by their superintendent and their company safety representative. In the event that the competent person leaves the project the employer shall designate a suitable replacement.

6.5.2 In order to avoid hazards or work stoppages, a secondary or back up competent person should be assigned for those activities requiring a competent person.

6.5.3 The Competent Person Designation (see attachments) lists every standard where OSHA requires an employer to designate a competent person. Based on the Hazard Checklist, designate a competent person as required on the Competent Person Designation form. Multiple competent persons may be required depending on a subcontractor’s scope of work, hazards, employee experience, training and qualifications.

6.5.4 Submit the Competent Person Designation before the work is performed. Update as required.

6.6 **Safety Data Sheets (SDS)**

6.6.1 Submit Safety Data Sheets before bringing chemicals on site, in accordance with HC HAZCOM Policy.

6.7 **Safety Policy**

6.7.1 Submit a Site Specific Safety Plan

6.8 **Pre-task Planning JHA**

6.8.1 Submit Pre-task Planning JHA

7.0 **Attachments**

7.1 Hazard Checklist
7.2 Employee Qualification Matrix
7.3 Competent Person Designation
7.4 Sample Site Safety Submittal Review
### Employees Will Be Exposed to the Following Hazards while performing our scope of work:

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive Blasting</td>
<td></td>
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<tr>
<td>Aerial lifts</td>
<td></td>
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<tr>
<td>Air Compressors/Use of Compressed Air</td>
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<tr>
<td>Arc Flash</td>
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<tr>
<td>Asbestos</td>
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<tr>
<td>Asphalt Paving</td>
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<tr>
<td>Barricades</td>
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<tr>
<td>Blasting and Explosives</td>
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<tr>
<td>Bloodborne Pathogens/Biological Hazards</td>
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<tr>
<td>Compressed Air</td>
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<tr>
<td>Compressed Gas Cylinders</td>
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<tr>
<td>Concrete chipping (ID Interior or Exterior?)</td>
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<tr>
<td>Concrete coring (ID Interior or Exterior?)</td>
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<tr>
<td>Concrete drilling</td>
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<tr>
<td>Concrete grinding (ID Interior or Exterior?)</td>
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<tr>
<td>Concrete Horizontal Formwork</td>
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<tr>
<td>Concrete Placement with bucket</td>
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<tr>
<td>Concrete Placement with pump</td>
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<tr>
<td>Concrete sawing (ID Interior or Exterior?)</td>
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<tr>
<td>Confined Space Work</td>
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<tr>
<td>Crane use</td>
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<tr>
<td>Delivery Truck Loading and Unloading</td>
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<tr>
<td>Demolition</td>
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<tr>
<td>Drilled Foundations</td>
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<tr>
<td>Earth Moving</td>
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<tr>
<td>Electrical Hazards</td>
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<tr>
<td>Electrical Work</td>
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<tr>
<td>Excavations and Trenching</td>
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<tr>
<td>Falls: (Working at elevations &gt; 6 feet)</td>
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<tr>
<td>Finished Area/Concealed Services Work</td>
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<tr>
<td>Forklifts</td>
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<tr>
<td>Form scaffold</td>
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<tr>
<td>Fueling equipment</td>
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<tr>
<td>Hazardous Chemical Use</td>
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<td>Hazardous Energy Isolation</td>
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<tr>
<td>Hazardous Substances Communication</td>
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<tr>
<td>Heat and Cold Stress</td>
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<tr>
<td>Heavy Equipment Operation</td>
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<tr>
<td>Hoist and Rigging</td>
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<tr>
<td>Hoisting using excavators</td>
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<tr>
<td>Hot Work</td>
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<tr>
<td>Housekeeping</td>
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<tr>
<td>Impalement Protection</td>
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<tr>
<td>Ladders - Step</td>
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<td>Ladders: Extension</td>
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<tr>
<td>Laser use</td>
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<tr>
<td>Lead Installation or Abatement</td>
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</table>
**Employees Will Be Exposed to the Following Hazards while performing our scope of work:**

<table>
<thead>
<tr>
<th>scope of work</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Manual Lifting</td>
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<tr>
<td>Masonry cutting or grinding</td>
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<tr>
<td>Noise Exposure</td>
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<tr>
<td>Personnel or Material Hoists</td>
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<tr>
<td>Personal Fall Arrest Systems</td>
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<tr>
<td>Powder Actuated Tools</td>
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<tr>
<td>Precast erection</td>
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<tr>
<td>Respirator Use</td>
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<tr>
<td>Respiratory Hazards</td>
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<tr>
<td>Roofing</td>
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<tr>
<td>Scaffolds: Supported</td>
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<td>Scaffolds: Suspended</td>
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<tr>
<td>Scaffolds: Utility (Baker type)</td>
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<tr>
<td>Scissor lifts</td>
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<tr>
<td>Steel Erection</td>
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<tr>
<td>Substance Abuse Policy</td>
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<tr>
<td>Traffic Control</td>
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<tr>
<td>Welding or Flame Cutting</td>
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<td>Work on the roof</td>
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Prepared by: __________________________ Dated: __________________________
Skills: The employer certifies that employees have been trained in the following skills in accordance with OSHA requirements. Check each skill for which an employee has received training.

<table>
<thead>
<tr>
<th>Employee Name</th>
<th>Last</th>
<th>First</th>
<th>Job Description</th>
<th>Foreman or Supervisor?</th>
<th>OSHA 10</th>
<th>OSHA 30</th>
<th>Forklift Operator</th>
<th>Aerial Lift/Scissor Lift Operator</th>
<th>Certified Crane Operator</th>
<th>Qualified Rigger</th>
<th>Qualified Signaler</th>
<th>GHS/HAZCOM Training</th>
<th>Fall Protection Training</th>
<th>Scaffold Erector Training</th>
<th>Scaffold User Training</th>
<th>Confined Space Awareness Training</th>
<th>Confined Space Supervisor</th>
<th>Confined Space Attendant</th>
<th>Confined Space Entrant</th>
<th>Laser Use Training</th>
<th>Authorized Employee - Lock Multiple Lift Rigging Procedures</th>
<th>Steel Connector</th>
<th>Fire Watch</th>
<th>Stairways and Ladders</th>
<th>Cutting and Welding</th>
</tr>
</thead>
</table>
COMPETENT PERSON DESIGNATION

Project Location: ______________________  Project Name: ______________________

Name: _______________________________  Company: ________________________

Basic Definition of Competent Person as Listed in 29 CFR 1926.32 (f):
One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

A DESIGNATED COMPETENT PERSON IS REQUIRED FOR EACH OF THE FOLLOWING HAZARDS IF THEY ARE PRESENT. DEPENDING ON HAZARDS OF A CONTRACTOR’S SCOPE OF WORK AND THE QUALIFICATIONS OF EMPLOYEES, MULTIPLE COMPETENT PERSONS MAY BE NECESSARY. THIS EMPLOYEE HAS BEEN DESIGNATED BY THE EMPLOYER AS A COMPETENT PERSON FOR:

<table>
<thead>
<tr>
<th>Code</th>
<th>Hazard</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
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<tbody>
<tr>
<td>1926.20</td>
<td>General Safety and Health</td>
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<td>1926.53</td>
<td>Ionizing Radiation</td>
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<td>1926.62</td>
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<tr>
<td>1926.101</td>
<td>Hearing Protection</td>
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<tr>
<td>1926.103</td>
<td>Respiratory Protection</td>
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<td></td>
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<td>Electrical</td>
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<td>Scaffolds</td>
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<td></td>
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<tr>
<td>1926.500-503</td>
<td>Fall Protection</td>
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<td>Cranes and Derricks</td>
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<td>Material Hoists, Personnel Hoists, and Elevators</td>
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<td>1926.650-652</td>
<td>Excavations</td>
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<td>Concrete and Masonry - Lift Slab Operations</td>
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<td>1926.751-756</td>
<td>Steel Erection</td>
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<tr>
<td>1926.800-803</td>
<td>Underground Construction</td>
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<td>Demolition</td>
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<td>1926.900</td>
<td>Blasting</td>
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<td>Asbestos</td>
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<td>Respirable Crystalline Silica</td>
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<td>1926.1203</td>
<td>Confined Space for Construction</td>
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DESIGNATED BY: ________________________ DATE: ______________________

Company Superintendent Signature

DESIGNATED BY: ________________________ DATE: ______________________

Company Safety Manager Signature
## Safety Submittal Review

**Project**

<table>
<thead>
<tr>
<th>Submittal</th>
<th>Date Received</th>
<th>Date Accepted</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Competent Person Designation</td>
<td>Yesterday</td>
<td>Today</td>
<td>Accepted</td>
</tr>
<tr>
<td>Hazard Checklist</td>
<td>Last week</td>
<td>Today</td>
<td>Accepted</td>
</tr>
<tr>
<td>Employee Training Matrix</td>
<td>Last week</td>
<td>Today</td>
<td>Accepted</td>
</tr>
<tr>
<td>Job Hazard Analysis</td>
<td></td>
<td></td>
<td>Pending HC review</td>
</tr>
<tr>
<td>Safety Data Sheets</td>
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<td></td>
<td>Pending setup of On Demand System for HC staff by USE Field personnel</td>
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### Action Required:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Action</th>
<th>Date Completed</th>
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<tbody>
<tr>
<td>1</td>
<td>Competent Person Designation</td>
<td>Please provide name of competent person for Respirable Silica</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Hazard Checklist</td>
<td>You have indicated that concrete drilling and saw cutting will be performed. How will silica hazards be controlled?</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Employee Training Matrix</td>
<td>If your employees will be working from baker scaffold or frame scaffold, scaffold training will be required. Do you plan to use any type of scaffolding?</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Employee Training Matrix</td>
<td>Do you foresee any permit required confined space (PRCS) work? If so, please indicate which employees have been trained as confined space supervisors, attendants and entrants, per 29CFR1926.1207, 1208, 1209 and 1210.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Employee Training Matrix</td>
<td>Your Hazard Checklist indicates you plan to do hot work. Please indicate employees that have received training in your program of welding, cutting, and fire watch.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Employee Training Matrix</td>
<td>Your Safety Plan discusses a respiratory protection program and respirator use. Your Employee Skills Matrix does not indicate that any employees are qualified to wear a respirator. Do you plan to eliminate all respiratory hazards using engineering controls?</td>
<td></td>
</tr>
</tbody>
</table>
Haselden Construction Safety Program

Subject: Scaffolds

Approved By: Safety Department

Date: 1/15/2018

1.0 Purpose

1.1 To establish procedures to assist with compliance of the OSHA Scaffold Standard and reduce or eliminate the injury potential of scaffold hazards.

2.0 Scope

2.1 This section of the Safety Manual describes requirements for scaffolds on the jobsite. It applies to all Haselden projects, Haselden related tasks, and subcontractor work.

2.2 This procedure establishes minimum requirements for the construction, inspection and use of scaffolds. It also outlines the training and requirements for scaffold competent persons and employees who are required to work from a scaffold.

3.0 Definitions

3.1 Competent Person: An employee who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.2 Completed Scaffold: A temporary work platform that provides a safe working area for personnel working above grade; constructed/erected with secured decking, guardrail systems, toe boards, swing gates, access ladders and fall arrest/protection systems.

3.3 Exposed Power Lines: Electrical power lines which are accessible to employees and which are not shielded from contact. Such lines do not include extension cords or power tool cords.

3.4 Fabricated Frame Scaffold: “tubular welded frame scaffold” – A scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

3.5 Guardrail System: A vertical barrier, consisting of, but not limited to, top rails, mid rails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

3.6 Heavy Duty Scaffold: A scaffold constructed such that the allowable working load is a maximum of 75 lbs. per square foot.
3.7 **Light Duty Scaffolds:** A scaffold constructed such that the allowable working load is a maximum of 25 lbs. per square foot.

3.8 **Medium Duty Scaffolds:** A scaffold constructed such that the allowable working load is a maximum of 50 lbs. per square foot.

3.9 **Large Area Scaffold:** A pole scaffold, tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over substantially the entire work area. For example: a scaffold erected over the entire floor area of a room.

3.10 **Lower Levels:** Areas below the level where the employee is located and to which an employee can fall. Such areas include ground levels, floors, roofs, ramps, runways, excavations, pits, materials, water, and equipment.

3.11 **Maximum Intended Load:** the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

3.12 **Mobile Scaffold:** a powered or unpowered, portable, caster or wheel-mounted supported scaffold, including utility (“Baker type” scaffold).

3.13 **Open Sides and Ends:** the edges of a platform that are more than 14 inches away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations, the horizontal threshold distance is 18 inches.

3.14 **Qualified Person:** A person, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems related to the subject matter, the work, or the project.

3.15 **Scaffold:** A work platform that provides a safe working area for personnel above surrounding floor, ground or grade.

3.16 **Supported Scaffold:** one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

3.17 **Suspension Scaffold:** one or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

3.18 **Unstable Objects:** items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include barrels, boxes, loose brick, and concrete blocks.

4.0 **Reference Documents**

4.1 29 CFR 1926 – Subpart L - Scaffold

4.2 29 CFR 1910.28 – Safety Requirements for Scaffolding
5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 To periodically review the implementation of this program.

5.1.2 To enforce disciplinary action for violations of this program.

6.0 Implementation

6.1 General Requirements for All Scaffold Types

6.1.1 Design and Loading:

6.1.1.1 Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.

6.1.1.2 Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at
either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.

6.1.1.3 Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design.

6.1.1.4 Platforms rated for light-duty capacity shall be designed and constructed to carry a uniformly distributed load of 25 lbs. per square foot.

6.1.1.5 Platforms rated for medium-duty capacity shall be designed and constructed to carry a uniformly distributed load of 50 lbs. per square foot.

6.1.1.6 Platforms rated for heavy-duty capacity shall be designed and constructed to carry a uniformly distributed load of 75 lbs. per square foot.

6.1.1.7 Platforms rated for special-duty capacity may be designed by a qualified person and constructed to carry specified uniformly distributed loads not covered by 6.1.1.4, 6.1.1.5 and 6.1.1.6.

6.1.1.8 Scaffold manufacturer’s technical manual, erection details, and safety instructions must be available on the jobsite. This includes utility scaffold.

6.1.1.9 Scaffold shall be erected in accordance with manufacturer’s requirements.

6.1.1.10 When scaffold design data or installation instructions are prepared by a qualified person or a registered professional engineer, the documents shall be available at the jobsite.

6.1.2 Prior to initiating scaffold erection, the area will be assessed for:

6.1.2.1 Physical and health hazards including hazardous energy (electrical, mechanical, pneumatic, thermal, laser, chemical, ionizing/non-ionizing radiation, etc.) nearby or in the immediate area.

6.1.2.2 The presence and work activities of other employees/personnel in the vicinity.

6.1.2.3 Weather conditions, including high winds, rain, snow, and ice.

NOTE: Scaffolds will not be erected/constructed or used within 15 feet of any overhead power lines or conductors without the written consent of Haselden’s onsite management team, Haselden’s Safety Department and a qualified electrical person.
6.1.3 Work Platforms:

6.1.3.1 Each platform unit (e.g., scaffold plank, fabricated plank, fabricated deck, or fabricated platform) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1-inch wide, except where a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).

6.1.3.1.1 If a wider space is necessary, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9-1/2 inches.

6.1.3.2 Each scaffold platform and walkway shall be at least 18 inches wide.

NOTE: Where scaffolds must be used in areas that are so narrow that platforms and walkways cannot be at least 18 inches wide, such platforms and walkways shall be as wide as feasible, and employees on those platforms and walkways shall be protected from fall hazards by the use of guardrails and/or personal fall arrest systems.

6.1.3.3 The front edge of all platforms shall not be more than 14 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used to protect employees from falling. EXCEPT:

6.1.3.3.1 The maximum distance from the face for outrigger scaffolds shall be 3 inches;

6.1.3.3.2 The maximum distance from the face for plastering and lathing operations shall be 18 inches.

6.1.3.4 Each end of a platform, unless cleated or otherwise restrained by hooks or nailed or wired together to prevent displacement, shall extend over the centerline of its support at least 6 inches.

6.1.3.5 Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches unless the platform is designed and installed so that the cantilevered portion of the platform is able to support employees and/or materials without tipping, or has guardrails which block employee access to the cantilevered end.

6.1.3.6 Each platform greater than 10 feet in length shall not extend over its support more than 18 inches, unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end.
6.1.3.7 On scaffolds where scaffold planks are abutted to create a long platform, each abutted end shall rest on a separate bearing surface.

6.1.3.8 Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes; however, the coating may not obscure the top or bottom wood surfaces.

6.1.3.9 All solid sawn wood planks shall be rated as a “scaffold plank” grade and shall be certified by, or bear the grade stamp of a grading agency.

6.1.4 Inspection:

6.1.4.1 Frame scaffold components shall be inspected before erection and maintained in good condition throughout their use on the project in accordance with the manufacturer’s requirements. If the manufacturer does not list inspection criteria, then “Recommended Procedures for Visual Inspection of Welded Tubular Frame Scaffolding & Accessories” prepared by the Scaffolding, Shoring & Forming Institute, Inc. shall be used. This HC Scaffold Policy shall be used when it is more restrictive.

6.1.4.2 Each scaffold to be used shall be inspected by a competent person on a daily or shift by shift basis. Inspections shall also be performed if changes in the working environment could affect the scaffold status or integrity.

6.1.4.3 All parts of suspended scaffold, including platforms guard rails, tie ins, bolts, nuts, fittings, clamps, wire ropes, and outrigger beams and their fastenings, shall be maintained in sound and good working condition and shall be inspected before each installation and periodically thereafter.

6.1.4.4 The competent person shall document this inspection and provide notification to inform workers of the status and condition of the scaffold. (please see 6.1.5 Notification)

6.1.5 Notification:

6.1.5.1 All scaffolds must use a notification system to inform workers of the status and condition of the scaffold that includes at least the following:

6.1.5.1.1 Completed, inspected by a competent person, and ready for use. (date, competent person) (Green),

6.1.5.1.2 Structurally complete, inspected by a competent person, ready for use with restrictions. (date, competent person, restrictions) (Yellow),
6.1.5.1.3 Partially completed, not ready for use. (why, date, competent person) (Red),

6.1.5.1.4 This scaffold is unsafe, not ready for use. Do not use (date, competent person) (Red).

6.1.5.1.5 The notification system shall be placed at each point where employees access the scaffold.

6.1.5.1.6 Green tags and yellow tags must be removed at the end of a shift, and a red tag must be visible when the scaffold is not inspected for use.

6.1.6 Intermixing manufacturers components:

6.1.6.1 Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the user. Scaffold components manufactured by different manufacturers shall not be modified in order to intermix them unless a competent person determines the resulting scaffold is structurally sound.

6.1.7 Dissimilar metals:

6.1.7.1 Scaffold components made of dissimilar metals shall not be used together unless a competent person has determined that galvanic action will not reduce the strength below the 4 times safety factor.

6.2 Utility Scaffold Requirements

6.2.1.1 Utility scaffolds shall be equipped with outriggers on both sides when the height to base width in the smallest dimension reaches or exceeds 3:1. Outriggers when added shall reduce the height to base ration to 3:1 or less.

6.2.1.2 When outriggers are not used on both sides of a utility scaffold, the scaffold shall be supported by fastening to a building element in accordance with the manufacturer's recommendation.

6.2.1.3 All wheels of utility scaffolds shall be locked.

6.3 Supported Scaffold (Ground or Outrigger Beam Supported) Requirements

6.3.1 Tipping restraint

6.3.1.1 Supported scaffolds with a height to base width ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:
6.3.1.1.1 Guys, ties, and braces shall be installed at locations where horizontal members support both inner and outer leg.

6.3.1.1.2 Restraining members must be of design to prevent tipping towards the building or workface as well as tipping away from the building or workface.

6.3.1.1.3 The vertical frequency of guys, ties, and braces shall be determined according to the scaffold manufacturer’s recommendations or at the following intervals:

6.3.1.1.3.1 Scaffolds with a 3’ or narrower minimum base dimension:

6.3.1.1.3.1.1 The first support is installed on the closest horizontal member to the 4:1 height and more supports are installed vertically at locations of horizontal members every 20 feet or less thereafter.

6.3.1.1.3.2 Scaffolds with a minimum base dimension wider than 3’:

6.3.1.1.3.2.1 The first support is installed on the closest horizontal member to the 4:1 height and every 26 feet or less thereafter.

6.3.1.1.4 The top guy, tie or brace of completed scaffolds (no matter what their minimum base dimension) shall be placed no further than the 4:1 height from the top.

6.3.1.1.5 Such guys, ties and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (measured from one end [not both] towards the other).

6.3.1.2 Ties, guys, braces, or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or is transmitted to the scaffold.

6.3.2 Footings and Foundations:

6.3.2.1 Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and be secured to mud sills or other adequate firm foundation.

6.3.2.2 Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement, shifting or collapse of one component or the entire scaffold.
6.3.2.3 Unstable objects shall not be used to support scaffolds or platform units.

6.3.2.4 Unstable objects shall not be used as working platforms.

6.3.2.5 Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use.

6.3.2.6 Fork-lifts shall not be used to support scaffold platforms unless the Director of Safety and Health has pre-approved this activity in writing and the operation is in full compliance with ANSI and OSHA requirements.

6.3.2.7 Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

6.3.3 Uplift

6.3.3.1 Frames and panels must be joined together vertically by coupling or stacking pins or equivalent means.

6.3.3.2 Frames and panels must be locked together to prevent uplift, where uplift can occur. Uplift is the separation of a frame from the frame below it.

6.3.4 Access

6.3.4.1 When scaffold platforms are more than 2 feet (0.6 m) above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used.

6.3.4.2 Cross braces shall not be used as a means of access.

6.3.4.3 Portable, hook-on, and attachable ladders should:

   6.3.4.3.1 Be positioned so as not to tip the scaffold;
   6.3.4.3.2 Be positioned so that their bottom rung is not more than 24 inches above the scaffold supporting level;
   6.3.4.3.3 Have rest platforms at 35-foot maximum vertical intervals on scaffolds more than 35 feet high;
   6.3.4.3.4 Be specifically designed for use with the type of scaffold used;
6.3.4.3.5 Each platform level will be provided with a gate or other means of safely accessing the ladder without compromising fall protection.

6.3.4.3.6 Accessing a scaffold access ladder through the guardrails is not permitted.

6.3.4.3.7 Have a minimum rung length of 11 1/2 inches; and

6.3.4.3.8 Have uniformly spaced rungs with a maximum spacing between rungs of 16 3/4 inches.

6.3.4.4 Stair tower requirements:

6.3.4.4.1 Shall be positioned such that their bottom step is not more than 24 inches above the scaffold supporting level.

6.3.4.4.2 Shall have a stair rail consisting of a top rail and a midrail on each side of each scaffold stairway with handrails or top rails that serve as an adequate handhold for employees grasping them to avoid falling.

6.3.4.4.3 Stair rail systems and handrails shall:

6.3.4.4.3.1 Be surfaced to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.

6.3.4.4.3.2 The ends of stair rail systems and handrails shall be constructed so that they do not constitute a projection hazard.

6.3.4.4.3.3 Handrails, and top rails that are used as handrails, shall be at least 3 inches from other objects.

6.3.4.4.3.4 Stair rails shall be not less than 28 inches nor more than 37 inches from the upper surface of the stair rail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

6.3.4.4.4 A landing platform at least 18" X 18" shall be provided at each level.

6.3.4.4.5 Each scaffold stairway shall be at least 18 inches (45.7 cm) wide between stair rails.

6.3.4.4.6 Treads and landings shall have slip-resistant surfaces.
6.3.4.7 Stairways shall be installed between 40 degrees and 60 degrees from the horizontal.

6.3.4.8 Guardrails shall be provided on the open sides and ends of each landing.

6.3.4.9 Riser height shall be uniform, within 1/4 inch, for each flight of stairs. Greater variations in riser height are allowed for the top and bottom steps of the entire system, not for each flight of stairs.

6.3.4.10 Tread depth shall be uniform, within 1/4 inch, for each flight of stairs.

6.3.4.5 Ramps and walkways

6.3.4.5.1 Ramps and walkways used for scaffold access that are 4 feet or more above lower levels shall have guardrail systems.

6.3.4.5.2 No ramp or walkway shall be inclined more than a slope of 20 degrees above the horizontal.

6.3.4.5.3 If the slope of a ramp or a walkway is steeper than one vertical in eight horizontal, the ramp or walkway shall have cleats not more than fourteen inches apart which are securely fastened to the planks to provide footing.

6.3.4.6 Integral prefabricated scaffold access frames shall:

6.3.4.6.1 Be specifically designed and constructed for use as ladder rungs;

6.3.4.6.2 Have a rung length of at least 8 inches (20 cm);

6.3.4.6.3 Not be used as work platforms when rungs are less than 11 1/2 inches in length, unless each affected employee uses fall protection, or a positioning device;

6.3.4.6.4 Be uniformly spaced within each frame section;

6.3.4.6.5 Be provided with rest platforms at 35-foot maximum vertical intervals on all supported scaffolds more than 35 feet high; and

6.3.4.6.6 Have a maximum spacing between rungs of 16 3/4 inches (43 cm). Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16 3/4 inches;
6.3.4.6.7 Shall be free of any projections, obstructions or other hindrances that could hinder the ability to safely use the ladder;

6.3.4.6.8 Steps and rungs of ladder and stairway type access shall line up vertically with each other between rest platforms.

6.3.4.7 Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surface.

6.3.4.8 A safe means of access shall be provided for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. A competent person shall determine whether it is feasible or would pose a greater hazard to provide, and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

6.3.4.9 Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

6.3.4.10 When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level and are not more than 22 inches apart vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand hold and foot space.

6.3.4.11 Cross braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

6.4 Scaffold Use

6.4.1 Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

6.4.1.1 Any part of a scaffold damaged or weakened such that its strength is less than that required shall be immediately repaired or replaced, to meet those provisions, or removed from service until repaired.

6.4.2 All scaffolds will be appropriately tagged after the competent person's inspection. (see notification section above 6.1.5)

6.4.3 Scaffolds shall not be moved horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement and with approval from the Haselden Project Team. (See 6.7.2 Mobile Scaffolds NOTE: Scissor lifts are
considered by OSHA to be mobile scaffolds that are legal to be propelled by the operator from the lift platform.

6.4.4 Scaffolds shall not be erected closer than 15 feet from any power line carrying more than 300 volts, up to 50,000 volts. Insulated electrical lines carrying 300 volts or less require a clearance of at least 3 feet.

**NOTE:** The above language does not apply if the power lines have been de-energized and properly secured (LOTO) per OSHA requirements.

6.4.5 Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.

6.4.6 Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

6.4.7 Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.

6.4.8 Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the scaffold is secured by engineered design against the anticipated wind forces imposed.

6.4.9 When scaffolds are wrapped with tarps, poly enclosures, or similar materials; wind calculations shall be prepared by a Qualified Person (QP) to determine the strength and placement of the ties. Maximum wind speed shall be calculated for evacuating the scaffold. Forecasted wind speed shall be calculated for removal of the scaffold covering to prevent collapse. Calculations shall be available on the jobsite.

6.4.10 Enclosed scaffolds shall be ventilated and monitored as necessary to prevent a hazardous atmosphere from developing.

6.4.11 Debris shall not be allowed to accumulate on platforms.

6.4.12 Excess material shall not be stacked on platforms. Material should be of an amount that can be installed during that shift.

6.4.13 Makeshift devices, such as boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees.

6.4.14 Ladders shall not be used on scaffolds to increase the working level height of employees, except on large area scaffolds where employers have satisfied the following criteria:
6.4.14.1 When the ladder is placed against a structure which is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder;

6.4.14.2 The platform units shall be secured to the scaffold to prevent their movement;

6.4.14.3 The ladder legs shall be on the same platform or other means shall be provided to stabilize the ladder against unequal platform deflection, and

6.4.14.4 The ladder legs shall be secured to prevent them from slipping, being pushed off or through the platform.

6.4.15 Platforms shall not deflect more than 1/60 of the span when loaded (ex. A 10’ plank should not bend more than 2”).

6.5 Fall Protection

6.5.1 Each employee on a scaffold more than 4 feet above a lower level shall be protected from falls. Guardrails are the preferred method of fall protection but if deemed infeasible by the competent person then other means of fall protection shall be provided.

6.5.2 Each employee on a boatswains’ chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system;

6.5.3 Each employee on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system.

6.5.4 During masonry operations, the wall being constructed must be a minimum of 32 inches above the working surface. If below 32 inches other means of fall protection is required.

6.5.5 A competent person shall determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Where the installation and use of fall protection is feasible on supported scaffolds and does not create a greater hazard, it is required. If the competent person determines that fall protection is infeasible they shall submit a written document detailing the reasoning behind this determination and a Job Hazard Analysis shall be submitted detailing the method to be used in lieu of standard fall protection.

6.5.6 When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, antennas, outrigger beams, or counterweights.
6.5.7 Guardrail systems shall be:

6.5.7.1 Installed along all open sides and ends of platforms.

6.5.7.2 Installed before the scaffold is released for use by employees other than erection/dismantling crews.

6.5.7.3 Have a toprail installed between 38 to 45 inches above the platform surface. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other guidelines.

6.5.7.4 Have midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members installed between the top edge of the guardrail system and the scaffold platform.

NOTE: When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface. When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports. When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches apart.

6.5.7.5 Have toprails capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 100 pounds for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds for guardrail systems installed on all other scaffolds.

6.5.7.6 Have midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the midrail or other member of at least 75 pounds for guardrail systems with a minimum 100 pound toprail capacity, and at least 150 pounds for guardrail systems with a minimum 200 pound toprail capacity.

6.5.7.7 Be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

6.6 Falling Object Protection

6.6.1 Each employee on a scaffold shall be provided with protection from falling hand tools, debris, and other small objects through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. The following falling object protection methods may be used:
6.6.1.1 The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area; or

6.6.1.2 A toe board shall be erected along the edge of platforms more than 6 feet above lower levels for a distance sufficient to protect employees below.

6.6.1.3 Where tools, materials, or equipment are piled to a height higher than the top edge of the toe board, paneling or screening extending from the toe board or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below; or

6.6.1.4 A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects; or

6.6.1.5 A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

6.7 Requirements for Specific Scaffold Types

6.7.1 Fabricated frame scaffolds (tubular welded frame scaffolds):

6.7.1.1 When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced prior to receiving the new platforms.

6.7.1.2 Frames and panels shall be braced by cross, horizontal, or diagonal braces, or combination thereof, which secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, and square. All brace connections shall be secured.

6.7.1.3 Frames and panels shall be joined together vertically by coupling or stacking pins or equivalent means.

6.7.1.4 Where uplift can occur, which would displace scaffold end frames or panels, the frames or panels shall be locked together vertically by pins or equivalent means.

6.7.1.5 Brackets used to support cantilevered loads shall:

6.7.1.5.1 Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames;

6.7.1.5.2 Not be bent or twisted from these positions; and

6.7.1.5.3 Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces.
caused by those other loads being placed on the bracket-supported section of the scaffold.

6.7.1.6 Scaffolds over 125 feet (38.0 m) in height above their base plates shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with such design.

6.7.2 Mobile scaffolds

6.7.2.1 Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.

6.7.2.2 All scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is used in a stationary manner.

6.7.2.3 Manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet above the supporting surface.

6.7.2.4 Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.

6.7.2.5 Scaffolds shall be stabilized to prevent tipping during movement.

6.7.2.6 Haselden Construction will allow employees to ride on mobile scaffolds only if the following parameters are met:

   6.7.2.6.1 The scaffold is not propelled by the person on the platform.

   6.7.2.6.2 Manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet above the supporting surface.

   6.7.2.6.3 The scaffold has guardrails and toe boards in place on all four sides.

   6.7.2.6.4 The scaffold is not higher than height to base width ratio of more than two to one (2:1).

   6.7.2.6.5 Upon reaching a stationary position all wheels will be locked immediately.
6.7.2.6.6 The area where the scaffold will be used shall be free of holes, indentations, or debris which may cause the scaffold to tip or become unstable.

6.7.2.6.7 Scaffold is inspected, tagged, and dated by a competent person.

6.7.2.6.8 A detailed Job Hazard Analysis (JHA) is signed by all employees involved and is submitted to Haselden Construction.

6.7.2.6.9 Exceptions to this rule are the use of scissor lifts or other scaffold types that have been pre-approved in writing by a Haselden safety manager, safety department manager, or safety director.

6.7.2.7 Platforms shall not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.

6.7.2.8 Where leveling of the scaffold is necessary, screw jacks or equivalent means shall be used. Screw jack extension shall not exceed manufacturer’s limitations.

6.7.2.9 Caster stems and wheel stems shall be pinned or otherwise secured in scaffold legs or adjustment screws using methods approved by the manufacturer.

6.7.3 Stilts:

6.7.3.1 An employee may wear stilts on a scaffold only if it is a large area scaffold.

6.7.3.2 When an employee is using stilts on a large area scaffold where a guardrail system is used to provide fall protection, the guardrail system shall be increased in height by an amount equal to the height of the stilts being used by the employee.

6.7.3.3 Surfaces on which stilts are used shall be flat and free of pits, holes and obstructions, such as debris, as well as other tripping and falling hazards.

6.7.3.4 Stilts shall be properly maintained. Any alteration of the original equipment shall be approved by the manufacturer.

6.7.4 Suspension Scaffolds:

6.7.4.1 Haselden Construction workers may only use a swing stage scaffold with the written approval of the Director of Safety and Health or his Designee. Once approval has been given, all workers must be trained on the safety requirements for erection, dismantling, using and inspecting their specific swing stage systems.
6.7.5 Ladder jack/pump jack scaffolds:

6.7.5.1 Ladder/pump jack scaffolds are prohibited on Haselden projects. Those types of scaffolds may only be used if approved in writing by the Haselden Director of Safety and Health or his designee prior to use.

6.7.6 Aerial Lifts:

6.7.6.1 See Haselden’s Aerial Lift Safety Policy.

6.8 Training Requirements

6.8.1 Each employee who performs work while on a scaffold shall be trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following:

6.8.1.1 The nature of any electrical hazards, fall hazards and falling object hazards in the work area;

6.8.1.2 The correct procedures for dealing with electrical hazards and other scaffold hazards, the fall protection systems and falling object protection systems being used;

6.8.1.3 The proper use of the scaffold, and the proper handling of materials on the scaffold;

6.8.1.4 The maximum intended load and the load-carrying capacities of the scaffolds used; and

6.8.1.5 Any other pertinent requirements

6.8.2 Each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold shall be trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:

6.8.2.1 The nature of scaffold hazards;

6.8.2.2 The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question;

6.8.2.3 The design criteria, maximum intended load-carrying capacity and intended use of the scaffold;

6.8.2.4 Any other pertinent requirements.
6.8.3 If an employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, they shall be retrained so that the requisite proficiency is regained. Retraining is required in at least the following situations:

6.8.3.1 Where changes at the worksite present a hazard about which an employee has not been previously trained; or

6.8.3.2 Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or

6.8.3.3 Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

7.0 Attachments

7.1 Waiver and Indemnity

WAIVER AND INDEMNITY

Our company, ___________________________ is being allowed to operate or use the undersigned, Haselden, equipment such as tools, scaffold, ladders, cranes, forklifts, etc., the undersigned, through its authorized representative, hereby agrees to the following:

1. Assume complete responsibility for the equipment/components inspections, operations or use of, per the manufacturer’s specifications. Abide by all applicable Federal OSHA regulatory standards, Haselden Safety Policies and comply with all State / Federal laws while utilizing/operating or being in charge of Haselden Scaffold__________________________.

2. Our company shall report any unsafe acts or conditions, equipment defects or damage to the equipment or property during the use of, or resulting from the utilization of said listed equipment.

3. Our company by using this equipment shall guarantee that our operators/employees possess the required and necessary skills, licenses, certifications, competent or qualified operator status for said operator and that they are drug and alcohol free.

4. To indemnify and hold harmless Haselden Construction, LLC. against all claims, damages and losses (including without limitation legal fees and disbursements) for injury to persons or damage to property arising out of or resulting from the undersigned’s use of Haselden Construction, LLC., equipment.

Date: ___________________________________________________________

Company Representative’s Name: (Please Print):_________________________

Address: __________________________________________________________

Signature: _________________________________________________________

Authorized Representative
Recommended Procedures for Visual Inspection of Welded Tubular Frame Scaffolding & Accessories

This document provides recommended procedures for visual inspection of steel and aluminum frame scaffolding equipment and is not intended for other materials such as wood products. The following are general guidelines. Contact the manufacturer for specific guidelines.

Visual Inspection

Inspection teams must be thoroughly trained to recognize the following possible defects or unsafe conditions present in scaffold frames and accessories regardless of age or source:

Frames
  1. Cracked or broken welds
  2. Missing members, legs or crossmembers
  3. Split or cracked tube
  4. Holes in legs or crossmembers due to cutting or cutting torch activity
  5. Evidence of extreme heat
  6. Extra or deformed holes
  7. Missing or inoperable cross brace lock devices
  8. Tubular members out of round or deviations from normal cross section
  9. Bent crossmembers or legs, including dents and dimples
  10. Squareness or warp of frames, ledger frames and major components
  11. Excessive corrosion such as pitting or flaking – Corrosion can affect the overall strength of the product due to loss of cross sectional area
  12. Discoloration due to possible exposure to caustic chemicals
  13. Evidence of field welding or modification

Crossbraces
  1. Bends or kinks in braces
  2. Damaged or excessively loose pivot
  3. Splits or cracks in braces
  4. Holes in braces due to cutting or cutting torch activity
  5. Evidence of extreme heat
  6. Excessive corrosion such as pitting or flaking
  7. Missing connecting hardware
  8. Discoloration due to possible exposure to caustic chemicals
  9. Evidence of field welding or modification
Recommended Procedures for Visual Inspection of Welded Tubular Frame Scaffolding & Accessories

Sidewall Brackets
1. Cracked or broken welds
2. Missing members
3. Missing fasteners (rivets, bolts)
4. Holes in members due to cutting or cutting torch activity
5. Evidence of extreme heat
6. Extra or deformed holes
7. Missing or damaged hooks or connecting devices
8. Bends or kinks in members
9. Squareness or warp of brackets
10. Excessive corrosion such as pitting or flaking
11. Discoloration due to possible exposure to caustic chemicals
12. Evidence of field welding or modification

Screw Jacks / Base Plates
1. Splits or cracks in leg material
2. Damaged threads
3. Excessively loose adjusting nuts
4. Cracked or damaged adjusting nuts
5. Cracked or broken welds at attached base plates
6. Evidence of extreme heat
7. Straightness of legs
8. Excessive corrosion such as pitting or flaking
9. Discoloration due to possible exposure to caustic chemicals
10. Evidence of field welding or modification

Various jigs and fixtures can be assembled to inspect and check the frames and accessories.

If you have any questions regarding the safety of a scaffold frame or accessory, contact the manufacturer.
1.0 Purpose

1.1 The purpose is to provide information and guidelines on use of small unmanned aircraft systems (drones).

2.0 Scope

2.1 This procedure applies to operation of small unmanned aircraft systems at all Haselden work sites, corporate property, and events. This includes the aircraft, the control station, the communication link, and the pilot.

3.0 Definitions

3.1 **sUAS - Small Unmanned Aircraft System (sUAS).** A small Unmanned Aircraft and its associated elements (including communication links and the components that control the small UA) that are required for the safe and efficient operation of the small UA in the National Air Space. A small UA weighs less than 55 pounds, including everything that is onboard or otherwise attached to the aircraft, and can be flown without the possibility of direct human intervention from within or on the aircraft.

3.2 **UAS Pilot** – One who holds a current FAA Remote Pilot Certificate with a small Unmanned Aircraft Systems (sUAS) rating.

3.3 **Visual Observer (VO)** - A person acting as a flight crew member who assists the small UA remote pilot to see and avoid other air traffic or objects aloft or on the ground.

4.0 Reference Documents


4.2 **FAA AC 107-2, 6/21/2016**

5.0 Responsibilities

5.1 **Superintendent**

5.1.1 Ensure that this policy is followed on the jobsite.
5.2 **Project Manager**

5.2.1 Has responsibility for the details of compliance with this policy.

5.3 **UAS Pilot**

5.3.1 Operate the equipment in a safe manner

5.3.2 Obey all safety and operating rules

5.3.3 Maintain valid FAA certification for operating the sUAS

5.3.4 Be trained to operate the particular sUAS used for flight

5.3.5 Operate the sUAS in accordance with the manufacturer’s operating instructions.

5.3.6 Obtain clearance from the Haselden Project Manager prior to flight.

5.3.7 Conduct an assessment of the operating environment. The assessment must include at least the following:

5.3.7.1 Local weather conditions

5.3.7.2 Local airspace and any flight restrictions

5.3.7.3 The location of persons and property on the surface, and other ground hazards

5.3.7.4 Determine whether a visual observer will be required.

5.3.8 Ensure that all persons directly participating in the small UA operation are informed about the following:

5.3.8.1 Operating conditions

5.3.8.2 Emergency procedures

5.3.8.3 Contingency procedures

5.3.8.4 Roles and responsibilities of each person involved in the operation, and

5.3.8.5 Potential hazards.

5.3.9 Participate in preparation of the Job Hazard Analysis.

5.3.10 Maintain visual line of site with the sUAS at all times.

5.3.11 Operate the sUAS in a manner that does not interfere with and gives way to any manned aircraft.
5.3.12 When flown within 5 miles of an airport, provide the airport operator and the airport air traffic control (ATC) tower (when an air traffic facility is located at the airport) with prior notice of the operation.

5.3.13 Maintain 50 ft clearance from all stacks, towers, wires, cables and guys.

5.3.14 Be fit for flight, and have no physical or mental incapacities identified by the FAA that prohibit sUAS operation.

5.3.15 Perform a preflight inspection of the sUAS.

5.3.16 Verify that required maintenance of the sUAS has been performed.

5.3.17 Determine operational performance of the sUAS.

5.3.18 Keep records in accordance with FAA requirements.

5.3.19 Report incidents, including near misses, to the Haselden Superintendent.

5.3.20 Report accidents to the FAA in accordance with FAA AC 107-2.

5.3.21 Report wildlife aircraft strikes to the FAA.

6.0 Implementation

6.1 Use of Drones on Active Jobsites

6.1.1 Anyone other than one who holds a current Remote Pilot Certificate with a small Unmanned Aircraft Systems (sUAS) rating is absolutely prohibited from flying a drone on any active Haselden jobsite regardless of whether it is during construction worktimes or not.

6.1.2 Owners and their employees, agents, and consultants are prohibited from sUAS flights on the jobsite without the permission of the Vice President of Operations for Haselden Construction.

6.1.3 All videos and photographs taken during flight are subject to review by the Director of Safety before release to any source.

6.2 Prior to any UAS flights, it is the Project Manager’s responsibility to do the following:

6.2.1 Contact the Safety Director or a Safety Manager.

6.2.1.1 A Safety Department representative must perform a risk assessment prior to sUAS flight.

6.2.1.2 A Safety Department representative must be present during sUAS flight.
6.2.1.2.1 Exception: For recurring surveillance, such as periodic recording of project progress, the Director of Safety may waive the requirement for a Safety Department representative to be present.

6.2.1.2.1.1 Notification will be given to the Safety Department prior to flights

6.2.1.2.1.2 Changes to the flight plan or the JHA be submitted to the Safety Department for review prior to flights

6.2.2 Forward a copy of the sUAS manufacturer’s operating instructions to the Safety Department representative.

6.2.3 Prepare a Job Hazard Analysis. Include the following:

6.2.3.1 Input from the assessment of the pilot. See item 5.3.7.

6.2.3.2 Air space classification and restrictions for the flight area.

6.2.3.3 Any restrictions due to airspace operational requirements.

6.2.3.4 Loading restrictions for this flight.

6.2.3.5 How flyaways will be prevented.

6.2.3.6 Visual observer responsibility, if one is required.

6.2.3.7 Wire strike prevention.

6.2.3.8 Operating limitations for sUAS.

6.2.3.9 A plan view showing limits of flight.

6.2.4 Verify that Haselden has a current Certificate of Insurance for UAS flights.

6.2.5 Verify that the UAS Pilot has a current Remote Pilot Certificate with a small Unmanned Aircraft Systems (sUAS) rating

6.2.6 Verify that the remote pilot can contact the ATC by phone or other means if necessary.

6.2.7 Verify that the sUAS has a current Commercial Registration with the FAA.

6.3 Safe Operating Procedures

6.3.1 The sUAS must be registered with the FAA.
6.3.2 Operate the sUAS within the visual line of sight of the operator aided only by eye glasses or contact lenses. Binoculars may be used only for improving situational awareness.

6.3.3 Avoid operating in the traffic pattern or published approach corridors used by manned aircraft.

6.3.4 Fly no faster than a groundspeed of 87 knots (100 miles per hour);

6.3.5 Fly no higher than 400 feet above ground level (AGL), unless flown within a 400-foot radius of a structure and does not fly higher than 400 feet above the structure’s immediate uppermost limit

6.3.6 Ensure minimum visibility, as observed from the location of the control station, may not be less than 3 statute miles; and

6.3.7 Minimum distance from clouds must be no less than 500 feet below a cloud and no less than 2000 feet horizontally from the cloud.

6.3.8 Operating hours are limited from sunrise until sunset.

6.4 No sUAS flight will be permitted under the following conditions:

6.4.1 During work shifts

6.4.2 Inside a building

6.4.3 In an area with FAA flight restrictions

6.4.4 When forecasted or actual wind speeds exceed the sUAS manufacturer’s safe operating recommendations

6.4.5 Under adverse weather conditions that may limit pilot visibility or control of the sUAS.

6.4.6 When a person other than the pilot to is allowed to manipulate the flight controls.

6.4.7 When carrying hazardous material.

6.4.8 Operations over human beings or residences.

6.4.9 Simultaneous operation of multiple sUAS by one pilot.

6.5 Additional Requirements

7.0 Attachments:

7.1 sUAS Risk Assessment
The key question to ask during analysis of the sUAS and its operation is, “what if?” sUAS remote PICs are expected to exercise due diligence in identifying significant and reasonably foreseeable hazards related to their operations.

**Figure A-1. Hazard Identification and Risk Assessment Process Chart**

A.4 **Risk Analysis and Assessment.** The risk assessment should use a conventional breakdown of risk by its two components: likelihood of occurrence and severity.

A.5 **Severity and Likelihood Criteria.** There are several tools which could be utilized in determining severity and likelihood when evaluating a hazard. One tool is a risk matrix. Several examples of these are presented in Figure A-2, Safety Risk Matrix Examples. The definitions and construction of the matrix is left to the sUAS remote PIC to design. The definitions of each level of severity and likelihood need to be defined in terms that are realistic for the operational environment. This ensures each remote PIC’s decision tools are relevant to their operations and operational environment, recognizing the extensive diversity which exists. An example of severity and likelihood definitions is shown in Table A-1, Sample Severity and Likelihood Criteria.
### Table A-1. Sample Severity and Likelihood Criteria

<table>
<thead>
<tr>
<th>Severity of Consequences</th>
<th>Likelihood of Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Severity Level</strong></td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Equipment destroyed, multiple deaths.</td>
</tr>
<tr>
<td>Hazardous</td>
<td>Large reduction in safety margins, physical distress, or a workload such that crewmembers cannot be relied upon to perform their tasks accurately or completely. Serious injury or death. Major equipment damage.</td>
</tr>
<tr>
<td>Major</td>
<td>Significant reduction in safety margins, reduction in the ability of crewmembers to cope with adverse operating conditions as a result of an increase in workload, or as result of conditions impairing their efficiency. Serious incident. Injury to persons.</td>
</tr>
<tr>
<td>Minor</td>
<td>Nuisance. Operating limitations. Use of emergency procedures. Minor incident.</td>
</tr>
<tr>
<td>Negligible</td>
<td>Little consequence.</td>
</tr>
</tbody>
</table>

**A.5.1 Risk Acceptance.** In the development of risk assessment criteria, sUAS remote PICs are expected to develop risk acceptance procedures, including acceptance criteria and designation of authority and responsibility for risk management decisionmaking. The acceptability of risk can be evaluated using a risk matrix, such as those illustrated in Figure A-2. Table A-2, Safety Risk Matrix—Example shows three areas of acceptability.
Risk matrices may be color coded; unacceptable (red), acceptable (green), and acceptable with mitigation (yellow).

A.5.1.1 *Unacceptable (Red).* Where combinations of severity and likelihood cause risk to fall into the red area, the risk would be assessed as unacceptable and further work would be required to design an intervention to eliminate that associated hazard or to control the factors that lead to higher risk likelihood or severity.

A.5.1.2 *Acceptable (Green).* Where the assessed risk falls into the green area, it may be accepted without further action. The objective in risk management should always be to reduce risk to as low as practicable regardless of whether or not the assessment shows that it can be accepted as is.

A.5.1.3 *Acceptable with Mitigation (Yellow).* Where the risk assessment falls into the yellow area, the risk may be accepted under defined conditions of mitigation. An example of this situation would be an assessment of the impact of an sUAS operation near a school yard. Scheduling the operation to take place when school is not in session could be one mitigation to prevent undue risk to the children that study and play there. Another mitigation could be restricting people from the area of operations by placing cones or security personnel to prevent unauthorized access during the sUAS flight operation.

**Figure A-2. Safety Risk Matrix Examples**
Table A-2. Safety Risk Matrix—Example

<table>
<thead>
<tr>
<th>Risk Likelihood</th>
<th>Risk Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Catastrophic A</td>
</tr>
<tr>
<td></td>
<td>Hazardous B</td>
</tr>
<tr>
<td></td>
<td>Major C</td>
</tr>
<tr>
<td></td>
<td>Minor D</td>
</tr>
<tr>
<td></td>
<td>Negligible E</td>
</tr>
<tr>
<td>Frequent 5</td>
<td>5A</td>
</tr>
<tr>
<td></td>
<td>5B</td>
</tr>
<tr>
<td></td>
<td>5C</td>
</tr>
<tr>
<td></td>
<td>5D</td>
</tr>
<tr>
<td></td>
<td>5E</td>
</tr>
<tr>
<td>Occasional 4</td>
<td>4A</td>
</tr>
<tr>
<td></td>
<td>4B</td>
</tr>
<tr>
<td></td>
<td>4C</td>
</tr>
<tr>
<td></td>
<td>4D</td>
</tr>
<tr>
<td></td>
<td>4E</td>
</tr>
<tr>
<td>Remote 3</td>
<td>3A</td>
</tr>
<tr>
<td></td>
<td>3B</td>
</tr>
<tr>
<td></td>
<td>3C</td>
</tr>
<tr>
<td></td>
<td>3D</td>
</tr>
<tr>
<td></td>
<td>3E</td>
</tr>
<tr>
<td>Improbable 2</td>
<td>2A</td>
</tr>
<tr>
<td></td>
<td>2B</td>
</tr>
<tr>
<td></td>
<td>2C</td>
</tr>
<tr>
<td></td>
<td>2D</td>
</tr>
<tr>
<td></td>
<td>2E</td>
</tr>
<tr>
<td>Extremely Improbable 1</td>
<td>1A</td>
</tr>
<tr>
<td></td>
<td>1B</td>
</tr>
<tr>
<td></td>
<td>1C</td>
</tr>
<tr>
<td></td>
<td>1D</td>
</tr>
<tr>
<td></td>
<td>1E</td>
</tr>
</tbody>
</table>

Note: The direction of higher/lower and more/less scales on a matrix is at the discretion of the remote PIC.

A.5.2 Other Risk Assessment Tools for Flight and Operational Risk Management. Other tools can also be used for flight or operational risk assessments and can be developed by the remote PICs themselves. The key thing is to ensure that all potential hazards and risks are identified and appropriate actions are taken to reduce the risk to persons and property not associated with the operations.

A.5.3 Reducing Risk. Risk analyses should concentrate not only on assigning levels of severity and likelihood, but on determining why these particular levels were selected. This is referred to as root cause analysis, and is the first step in developing effective controls to reduce risk to lower levels. In many cases, simple brainstorming sessions among crewmembers is the most effective and affordable method of finding ways to reduce risk. This also has the advantage of involving people who will ultimately be required to implement the controls developed.

A.5.3.1 It is also very easy to get quite bogged down in trying to identify all hazards and risks. That is not the purpose of a risk assessment. The focus should be upon those hazards which pose the greatest risks. As stated earlier, by documenting and compiling these processes, a remote PIC can build an arsenal of safety practices that will add to the safety and success of future operations.
A.5.4 Sample Hazard Identification and Risk Assessment.

A.5.4.1 Example. I am the remote PIC of an sUAS in the proximity of an accident scene shooting aerial footage. Much like pilots in manned aircraft must adhere to preflight action (part 91, § 91.103), I must adhere to preflight familiarization, inspection, and aircraft operations (§ 107.49). Let’s say that there is an obvious takeoff and landing site that I intend to use. What if, while I am operating a manned aircraft (emergency medical services (EMS) helicopter) requires use of the same area and I am not left with a suitable landing site? Furthermore, I am running low on power. If I consider this situation prior to flight, I can use the Basic Hazard Identification and Mitigation Process. Through this process, I might determine that an acceptable level of risk can be achieved by also having an alternate landing site and possibly additional sites at which I can sacrifice the UA to avoid imposing risk to people on the ground or to manned aircraft operations. It is really a simple process: I must consider the hazards presented during this particular operation, determine the risk severity, and then develop a plan to lessen (or mitigate) the risk to an acceptable level. By documenting and compiling these processes, I can build an arsenal of safety practices that will add to the safety and success of future operations. The following are some proven methods that can help a new remote PIC along the way:

A.5.4.2 Hazard Identification. Using the Personal Minimums (PAVE) Checklist for Risk Management, I will set personal minimums based upon my specific flight experience, health habits, and tolerance for stress, just to name a few. After identifying hazards, I will then input them into the Hazard Identification and Risk Management Process Chart (Figure A-1).

1. Personal: Am I healthy for flight and what are my personal minimums based upon my experience operating this sUAS? During this step, I will often use the IMSAFE checklist in order to perform a more in-depth evaluation:
   - Illness – Am I suffering from any illness or symptom of an illness which might affect me in flight?
   - Medication – Am I currently taking any drugs (prescription or over-the-counter)?
   - Stress – Am I experiencing any psychological or emotional factors which might affect my performance?
   - Alcohol – Have I consumed alcohol within the last 8 to 24 hours?
   - Fatigue – Have I received sufficient sleep and rest in the recent past?
   - Eating – Am I sufficiently nourished?

2. Aircraft: Have I conducted a preflight check of my sUAS (aircraft, control station (CS), takeoff and landing equipment, etc.) and
determined it to be in a condition for safe operation? Is the filming equipment properly secured to the aircraft prior to flight?

3. **Environment**: What is the weather like? Am I comfortable and experienced enough to fly in the forecast weather conditions? Have I considered all of my options and left myself an “out”? Have I determined alternative landing spots in case of an emergency?

4. **External Pressures**: Am I stressed or anxious? Is this a flight that will cause me to be stressed or anxious? Is there pressure to complete the flight operation quickly? Am I dealing with an unhealthy safety culture? Am I being honest with myself and others about my personal operational abilities and limitations?

A.5.5 **Controlling Risk**. After hazards and risks are fully understood through the preceding steps, risk controls must be designed and implemented. These may be additional or changed procedures, additional or modified equipment, the addition of VOs, or any of a number of other changes.

A.5.6 **Residual and Substitute Risk**. Residual risk is the risk remaining after mitigation has been completed. Often, this is a multistep process, continuing until risk has been mitigated down to an acceptable level necessary to begin or continue operation. After these controls are designed but before the operation begins or continues, an assessment must be made of whether the controls are likely to be effective and/or if they introduce new hazards to the operation. The latter condition, introduction of new hazards, is referred to as substitute risk, a situation where the cure is worse than the disease. The loop seen in Figure A-1 that returns back to the top of the diagram depicts the use of the preceding hazard identification, risk analysis, and risk assessment processes to determine if the modified operation is acceptable.

A.5.7 **Starting the Operation**. Once appropriate risk controls are developed and implemented, then the operation can begin.
1.0 Purpose

1.1 To report and give proper instruction for cleanup of different spills depending on the factors listed below.

2.0 Scope

2.1 This program applies to all spills occurring on Haselden Construction projects or those directly outside of Haselden Construction projects that were caused by Haselden or their subcontractors.

3.0 Definitions

4.0 Reference Documents

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Responsible for the proper cleanup of all spills on the project.

6.0 Implementation

6.1 Storage

6.1.1 Only approved containers and portable tanks will be used for storage and handling of flammable and combustible liquids.

6.1.2 All small fuel containers must be stored in a flammable storage cabinet and must be identified on the site map.

6.1.3 All containers must be stored under cover or in a leakproof secondary container that holds 110% of the volume of the stored contents.

6.1.4 For quantities of five gallon or less, the original container or approved metal safety cans will be used for storage, use and handling of flammable and combustible liquids.

6.1.5 No on-site storage containers for flammable or combustible liquids are allowed to exceed 55 gallons without written permission from Haselden Construction’s Director of safety and health or designee.
6.1.6 Fuel trucks that have mounted tanks in excess to this amount are allowed short term access to the site for refueling of equipment.

6.1.7 Flammable or combustible liquids will not be stored in areas used for exits, stairways or the passage of people. Storage of containers (not more than 55 gallons each) will not exceed 1,100 gallons in any one pile or area. Piles or groups of containers will be separated by a 5-foot clearance. Piles or groups of containers will not be nearer than 20 feet to a building.

6.1.8 Within 200 feet of each pile of containers there will be a 12-foot wide access for fire control apparatus.

6.1.9 The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or dike at least 12 inches high. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rain water, or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.

6.1.10 Outdoor Portable Tank Storage

6.1.10.1 Individual tanks or barrels greater than 55 gallons must receive written permission from Haselden construction’s Director of safety and health or designee for temporary storage on site.

6.1.10.2 Portable tanks will not be nearer than 20 feet from any building. Two or more portable tanks grouped together having a combined capacity in excess of 2,200 gallons will be separated by a 5-foot clear area. Individual portable tanks exceeding 1,100 gallons will be separated by a 5-foot clear area.

6.1.11 Within 200 feet of each portable tank, there will be a 12-foot wide access for fire control apparatus.

6.2 Petrochemical Spill Prevention, Control, and Countermeasures

6.2.1 In the event of a small petrochemical spill occurring on this site or within areas temporarily controlled by Haselden, any of the following controls and countermeasures may be implemented to insure proper clean-up and practices:

6.2.1.1 Haselden will have on site, and use in the event of a small scale petrochemical spill, Hazmat Spill Control Kit or other adequate form of spill clean-up and countermeasure. In addition, such spill countermeasure(s) will be available and within close proximity to areas that have been determined to have high possibility for petrochemical spills. Haselden will make all techniques and products readily available to our employees and employees of sub-contractors with adequate training in implementation and execution of such controls and countermeasures.
6.2.1.1 The spill kit shall contain a plastic shovel for cleanup of small quantities of flammables such as gasoline and other chemicals with a low flash point that could be ignited by the spark of a metal tool.

6.2.1.2 The most effective method of cleaning spills on soil is to immediately remove the contaminated soil to the depth of spill penetration. Test the soil to ensure all chemical contaminants have been removed, and dispose of legally at a facility that receives oily waste.

6.2.1.3 After some soil is removed from the area of the spill, certain contaminants, such as hydraulic fluid, may still be present even though they are not visible. Continue to remove soil until the contaminant can no longer be smelled by comparing it to the scent of uncontaminated soil.

6.2.1.4 Haselden will keep on site a spill countermeasure named MicroBlaze™ Emergency Liquid Spill Control. MicroBlaze™ functions by eliminate flammability of hydrocarbons. Microbes are activated by mixing with water and the MicroBlaze™ solution will then break down, degrade and digest the waste under certain, specific conditions of use. Read this policy carefully. Instructions shipped with the product do not describe use of MicroBlaze™ for spills on soil.

6.2.1.5 Micro-Blaze characteristics:

<table>
<thead>
<tr>
<th>PHYSICAL CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• White, opaque perfumed liquid formulation</td>
</tr>
<tr>
<td>• pH: 7.3</td>
</tr>
<tr>
<td>• Completely soluble in water</td>
</tr>
<tr>
<td>• Bacteria count: ~ 400 billion / gallon</td>
</tr>
<tr>
<td>• Bacillus bacterial cultures; non-pathogenic, non-toxic</td>
</tr>
<tr>
<td>• Completely biodegradable</td>
</tr>
<tr>
<td>• 10-year shelf life</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ships concentrated ready to dilute with water and use; no mixing dry powders and waiting 24 hours</td>
</tr>
</tbody>
</table>

6.2.1.6 MicroBlaze™ Emergency Liquid Spill Control can be used when petrochemicals are spilled on impervious surfaces or on soil.

6.2.1.7 For use on impervious surfaces, mix MicroBlaze™ concentrate to make a 10% solution with water, then apply with a sprayer. Apply the same amount of solution as the quantity of spilled liquid.

6.2.1.8 For treating hydrocarbon spills on soil, MicroBlaze™ is only effective if it is tilled into the top foot of soil and the soil is kept...
moist, at approximately 5% moisture content. Mix and apply a 10% solution into the contaminated soil and apply in the same amount as the quantity of spilled liquid. Till into the soil and water to keep moist. The microbes will become inactive if the soil dries out. The microbes will digest the hydrocarbons in a matter of weeks.

6.2.1.9 Contact Bill Scogin at Verde Environmental, Inc, the manufacturer of MicroBlaze™, with any questions. 800-626-6598.

6.3 Chemical Spill Prevention, Response, and Cleanup Policy

6.3.1 Spill Management and Responsibilities:

6.3.1.1 The site superintendent has primary responsibility for coordinating the response to emergencies, including chemical spills.

6.3.1.2 Supervisors should ensure that employees are familiar with these procedures and receive any necessary training.

6.3.1.3 All employees should follow these procedures in the event of a chemical spill.

6.3.2 Emergency Contact Numbers:

6.3.2.1 Police, fire department, ambulance: 911

6.3.2.2 Nearest Medical Center:

6.3.2.3 Nearest Emergency Hospital:

6.3.2.4 Haselden Safety Department: 303-751-1478

6.3.2.5 National Poison Control Center: 1-800-222-1222

6.3.2.6 WQCD Toll Free 24-Hour Environmental Emergency Spill Reporting Line: 1-877-518-5608

**NOTE:** All additional details, locations, addresses, phone numbers shall be located inside the main site construction trailer.

6.3.3 Clean-Up Procedures:

6.3.3.1 Spilled chemicals should be effectively and quickly contained and cleaned up. Employees will clean up spills themselves, only if properly trained and protected. Employees who are not trained in spill clean-up procedures will need to report the spill to the Responsible Person(s) listed in this program, warn other employees, and then leave the area.
6.3.3.2 In the event of large spills that cannot be cleaned up with the sites provided cleanup kits, contact the appropriate responders listed in the Emergency Contact Numbers section.

6.3.4 Evacuation:

6.3.4.1 The following general guidelines should be followed for evacuation, spill control, notification of proper authorities, and general emergency procedures in the event of a chemical incident in which there is a potential for a significant release of hazardous materials.

6.3.4.1.1 Persons in the immediate vicinity of a spill should immediately evacuate the premises (except for employees with training in spill response in circumstances described below) if the spill is of a medium or large size, or if the spill seems hazardous, immediately notify emergency response personnel.

6.3.5 Spill Control Techniques:

6.3.5.1 Once the spill has occurred, the employee needs to decide whether the spill is small enough to handle without outside assistance. Only employees trained in spill response should attempt to contain or clean up a spill.

6.3.5.2 If you are cleaning up a spill yourself, make sure you are aware of the hazards associated with the materials spilled, have adequate ventilation, and proper personal protective equipment. Treat all residual chemical and cleanup materials as hazardous waste.

6.3.5.3 Spill control equipment should be located wherever significant quantities of hazardous materials are received or stored. SDS’s, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers, and “caution-keep out” signs are common spill response items.

6.3.6 Spill Response and Cleanup:

6.3.6.1 Chemical spills are divided into three categories: Small, Medium and Large. Response and cleanup procedures vary depending on the size of the spill. When containing spills, try to protect any water discharge areas, (inlets, streams, ponds, etc.) first.

6.3.6.2 Small Spills: Any spill where the major dimension is less than 18 inches in diameter. Small spills are generally handled by internal personnel and usually do not require an emergency response by police or fire department HAZMAT teams.

6.3.6.2.1 Quickly control the spill by stopping or securing the spill source. This could be as simple as up-righting a container and using floor-dry or absorbent pads to soak
up spilled material. Wear gloves and protective clothing if necessary.

6.3.6.2.2 Put spill material and absorbents in secure containers if any are available.

6.3.6.2.3 Consult with the facility Response Person and the SDS for spill and waste disposal procedures.

6.3.6.2.4 In some instances, the area of the spill should not be washed with water. Use Dry Cleanup Methods and never wash spills down the drain, onto a storm drain or onto the driveway or parking lot.

6.3.6.2.5 Both the spilled material and the absorbent may be considered hazardous waste and must be disposed of, in compliance with State and Federal, environmental regulations.

6.3.6.3 **Medium Spills**: Spills where the major dimension exceeds 18 inches, but is less than 6 feet. Outside emergency response personnel (police and fire department HAZMAT teams) should usually be called for medium spills. Immediately try to help and contain the spill at its source by simple measures only. This means quickly up-righting a container, or putting a lid on a container, if possible. Do not use absorbents unless they are immediately available.

6.3.6.3.1 Once you have made a quick attempt to contain the spill, or once you have quickly determined you cannot take any brief containment measures, leave the area and alert Emergency Responders at 911.

6.3.6.3.2 Closing doors behind you when leaving the area, helps contain vapors from spills. Give Emergency Responders accurate information as to the location, chemical, and estimated amount of the spill.

6.3.6.3.3 Evaluate the area outside the spill. Advise Emergency Responders on how to turn off ignition sources such as, engines, electrical, heating, air conditioning equipment, air circulating equipment or any other potential source of ignition. Do not go back into the spill area once you have left.

6.3.6.3.4 If emergency Responders evacuate the spill area, follow their instructions in leaving the area.

6.3.6.3.5 Be prepared to assist emergency responders with any other information that may be necessary, such as, SDS’s and questions about the facility. Emergency Responders or trained personnel with proper Personal Protective Equipment (PPE) will then clean up the spill residue. Do not re-enter the area until the responder in
charge gives the all clear. Be prepared to assist these persons from outside the spill area.

6.3.6.3.6 Reports must be filed with proper authorities. It is the responsibility of the spiller to inform both the supervisor and the Emergency Responders as to what caused the spill. The response for large spills is similar to the procedures for medium spills, except that the exposure is greater.

6.3.6.4 **Large Spills**: Any spill involving flammable liquid where the major dimension exceeds 6 feet in diameter, and any “running” spill where the source of the spill has not been contained or flow has not been stopped.

6.3.6.4.1 Leave the area and notify Emergency Responders (911). Give the operator the spill location, chemical spilled and approximate amount.

6.3.6.4.2 From a safe area, attempt to get SDS information for the spilled chemical for the emergency responders to use. Also, be prepared to advise responders as to any ignition sources, engines, electrical power, or air conditioning/ventilation systems that may need to be shut off. Advise responders of any absorbents, containers, or spill control equipment that may be available. Use radio or phone to assist from a distance, if necessary.

6.3.6.4.3 Only emergency response personnel, in accordance with their own established procedures, should handle spills greater than 6 feet in any dimension or that are continuous. Remember, once the emergency responders or HAZMAT team is on the job cleaning up spills or putting out fires, the area is under their control and no one may re-enter the area until the responder in charge gives the “all clear”.

6.3.6.4.4 Provide information for reports to supervisors and responders, just as in medium spills.

6.3.7 Reporting Spills:

6.3.7.1 All chemical spills, regardless of size, should be reported as soon as possible to the Jobsite Superintendent. The Superintendent will determine whether the spill has the potential to affect the environment outside of the facility and must be reported to 911 or the National Response Center at 1.800.424.8802.

6.3.7.2 Examples of spills that could affect the outside environment include spills that are accompanied by fire or explosion and spills that could reach nearby water bodies.
6.3.8 Spill Kit Locations:

6.3.8.1 Spill response kit(s), will be available nearby the job trailer. The location of these kit(s) will be clearly identified on the official site map throughout the entirety of the project.

6.3.8.2 Spill Kit Inventory.

<table>
<thead>
<tr>
<th>ABSORBENTS</th>
<th>PPE</th>
<th>OTHER SUPPLIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-Absorbent “pillows”</td>
<td>impervious gloves</td>
<td>1-Roll of DANGER tape</td>
</tr>
<tr>
<td>50-8”x12” absorbent mats</td>
<td>goggles</td>
<td>Emergency Response guide book</td>
</tr>
<tr>
<td>6-12’x2” absorbent rolls</td>
<td>dust masks</td>
<td></td>
</tr>
</tbody>
</table>

7.0 Attachments:

N/A
1.0 Purpose

1.1 This document describes the policy for Steel Erection on all Haselden Construction projects, as it relates to Haselden Construction, steel fabricators and steel erectors and all associated subcontractors, consultants and vendors.

2.0 Scope

2.1 This policy applies to steel erection activities involved in the construction, alteration, or repair of single and multi-story buildings, bridges, and other structures where steel erection occurs including decking and grating associated with steel erection. This subpart does not cover electrical transmission towers, communication and broadcast towers, or tanks.

2.2 Steel erection activities include hoisting, laying out, placing, connecting, welding, burning, guying, bracing, bolting, plumbing and rigging structural steel, steel joists and metal buildings; installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron and similar materials; and moving point-to-point while performing these activities.

2.3 Any deviation from this program must be approved by Haselden Director of Safety and Health or his Designee.

3.0 Definitions

3.1 **Column**: A load-carrying vertical member that is part of the primary skeletal framing system of the structure.

3.2 **Competent Person**: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them. Subcontractor must designate competent person(s) in writing. See Haselden Competent Person policy.

3.3 **Controlling Contractor**: A prime contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project -- its planning, quality and completion.

3.4 **Connector**: An employee who, working with hoisting equipment, is placing and connecting structural members and/or components.
3.5 **Critical Lift:** Any lift that:

3.5.1 Exceeds 75% of the rated capacity of the crane,

3.5.2 Requires the use of more than one crane,

3.5.3 If damaged would be irreplaceable (ex. People, items of historical significance) or would have a long lead time.

3.5.4 See Haselden’s Crane program for more information.

3.6 **Floor Hole:** A gap or void more than 2 inches in its least dimension and less than 12 inches in its greatest dimension in a floor, roof, or other walking/working surface.

3.7 **Floor Opening:** A gap or void more than 12 inches in its least dimension in a floor, roof, or other walking/working surface.

3.8 **Leading Edge:** The unprotected side and edge of a floor, roof, or deck for a walking/working surface which changes location as additional floor or decking sections are placed or constructed.

3.9 **Multiple Lift Rigging:** A rigging assembly manufactured by wire rope rigging suppliers that facilitates the attachment of up to five independent loads to the hoist rigging of a crane.

3.10 **Permanent Floor:** A structurally complete floor at any level or elevation, including slabs on grade.

3.11 **Post:** A structural member with a longitudinal axis that is essentially vertical that weighs 300 lbs. or less and is axially loaded or is not axially loaded, but is laterally restrained by the above member. Posts typically support stair landings, wall framing and other substructure.

3.12 **Qualified Person:** A person who by possession of a recognized degree, certificate, professional standing or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to Steel Erection.

4.0 **Reference Documents**

4.1 OSHA 29 CFR 1926.750 subpart R

4.2 OSHA 29 CFR 1926.500 subpart M

4.3 ANSI A10.13-2011

4.4 29 CFR 1926 Subpart R and Appendix A thru H

4.5 29 CFR 1926.501 – Duty To Have Fall Protection

4.6 Standard Interpretations – Permissibility of Guardrail Systems Other Than Safety Cables in Steel Erection
4.7 OSHA Compliance Directive - Inspection Policy/Procedures for Steel Erection Standards for Construction

4.8 OSHA Standard Interpretations - Clarification of "Controlling Subcontractor" Duties

4.9 OSHA Standard Interpretations - Wire Rope Clips; Safety Latches on Large Crane Hooks; Assembly for Hanging Scaffolds; and Horizontal Lifeline Design

4.10 Haselden Rigging Policy

4.11 Haselden Fall Protection Policy

5.0 Responsibilities

5.1 Director of Health and Safety:
   5.1.1 Stay current with changes in the industry which may cause change to this program.
   5.1.2 Guide and manage the program to assist superintendents in implementing this program.
   5.1.3 Ensuring compliance with this program.

5.2 Site Superintendent(s):
   5.2.1 Review this program and plan for its implementation before steel erection activities commence.
   5.2.2 Review the entire steel erection plan submitted by the subcontractor.
   5.2.3 Enforce disciplinary action for violations of this program.

6.0 Implementation

6.1 Work Planning

6.1.1 In addition to the project-specific steel erection requirements, subcontractors will develop a written steel erection plan that meets/exceeds OSHA and Haselden Steel Erection requirements. The written plan will be:

   6.1.1.1 Submitted to the Haselden management team for review and approval.

   6.1.1.2 Prepared by a Qualified Person.

   6.1.1.3 The steel erection plan will be site-specific and will address as a minimum, the:

       6.1.1.3.1 Identification and integrity of material and equipment,
6.1.1.3.2 Strength of concrete in footings, piers and walls,

6.1.1.3.3 Repairs, replacements or modification to anchor bolts,

6.1.1.3.4 Selection, inspection and use of rigging hardware, e.g., slings and shackles,

6.1.1.3.5 Selection, inspection and placement of tower and/or mobile cranes, and other mobile equipment, such as aerial lift, scissor lift, etc.

6.1.1.3.6 Tools and equipment appropriate to the task,

6.1.1.3.7 Equipment and material delivery and staging,

6.1.1.3.8 Access routes for delivery, movement, staging and storage,

6.1.1.3.9 Site preparation and employee’s access and egress to staging/storage areas,

6.1.1.3.10 Accountability/responsibilities for planning and scheduling,

6.1.1.3.11 Detailed timing and sequence of each task or phase of steel erection,

6.1.1.3.12 Processes/procedures that will be used in installation of braces, guys, connectors, decking, roofing, grating and siding,

6.1.1.3.13 Sequencing methods that will be used to minimize or eliminate potential hazards, such as the construction of permanent stairs or placement of temporary stair towers that progress with the turnover of each floor or floor area to the General Contractor for use by other trades.

6.1.1.3.14 Critical lift identification, planning and scheduling

6.1.1.3.15 Employee protection from potential safety and health hazards,

6.1.1.3.16 Ladder, stair and scaffold access and egress,

6.1.1.3.17 Barricades, warning signs, rebar caps, and other protection for personnel and equipment,

6.1.1.3.18 Emergency response plan and availability and location of emergency equipment,

6.1.1.3.19 Identification and location of potential overhead hazards,
6.1.1.3.20 Personal protective equipment,

6.1.1.3.21 Fall protection and prevention (fall arrest system, safety nets, guardrails at unprotected edges or openings, temporary work platforms, etc.),

6.1.1.3.22 Fall distance calculations for use of fall protection equipment,

6.1.1.3.23 Fall rescue plan and fall rescue equipment,

6.1.1.3.24 Detailed, job-specific safety instructions for each position involved in rescue,

6.1.1.3.25 Protection from potential overhead hazards and falling materials and tools,

6.1.1.3.26 Evaluation and assessment of weather conditions, such as winds, rain, ice, snow, lightning etc., during steel erection,

6.1.1.3.27 Employee training, qualifications and methods used to verify qualification of personnel involved in steel erection,

6.1.1.3.28 Hazard identification, training and safety precautions associated with “non-routine” tasks,

6.1.1.3.29 A hazard assessment or a detailed Job Hazard Analysis (JHA).

6.2 Prior to authorizing the commencement of steel erection, Haselden will provide the subcontractor with the following written notifications:

6.2.1 The concrete in footings, piers, and walls and the mortar in masonry, piers has attained either 75% of the intended minimum comprehensive design strength or sufficient strength to support the loads imposed during steel erection.

6.2.2 Any repairs, replacement, and modifications to the anchor bolts that were made. **Important Note** Anchor rods shall not be repaired, replaced, or field modified without the approval of the project structural engineer of record.

6.3 Haselden will ensure that that the following is provided and maintained:

6.3.1 Adequate access roads into and through the site for the safe delivery and movement of cranes, trucks, other necessary equipment, and the materials to be erected and means and methods for pedestrian and vehicle control.
6.3.2 A firm, properly graded, drained area, readily accessible to the work with adequate space for the safe storage of materials, and the safe operation of the erector’s equipment.

6.4 Subcontractor supervisors must complete and review JHAs, conduct detailed task-specific safety and tailgate/toolbox meetings with all personnel:

6.4.1 Before the beginning of steel erection.

6.4.2 Daily for each specific task.

6.5 Safe Work Practices

6.5.1 Fall Protection and Prevention:

6.5.1.1 Ensure all personnel, regardless of task being performed, are being protected from potential fall hazards whenever working at heights of 6 feet or greater.

6.5.1.2 When flame cutting while using a positioning system, a steel lanyard will be used.

6.5.1.3 When spreading or welding deck, a synthetic rope grab system shall not be used.

6.5.1.4 Pre-assemble on the ground to the greatest extent practicable to reduce the need for work at heights.

6.5.1.5 Regardless of training in safe work practices given to employees by an employer or employee representative, and notwithstanding industry practice, maintaining employee distance from an unprotected edge shall not be recognized as a means for eliminating the requirement for fall protection through use of Personal Fall Arrest Systems, guardrails, or warning lines.

6.5.2 Employees shall not:

6.5.2.1 Climb up or down columns (shimmy), unless no other means of access is feasible, 100% fall protection is used when employees are exposed to a fall greater than 6 feet, and climbing does not impair the stability of the member.

6.5.2.2 Carry any tools or material in their hands when climbing ladders.

6.5.3 Temporary and permanent walking/working surfaces:

6.5.3.1 Shear connectors, rebar, studs, etc., shall not be attached to the top flange of beams, joists, or beam attachments such that they project vertically from or horizontally across the top flange of the member until after the decking or other walking/working surface is installed.

6.5.3.2 Controlled decking zones are not permitted.
6.5.3.3 Permanent stairs should be installed as each elevation of steel is erected.

6.5.3.4 Access to elevated floors will be limited to personnel directly involved in the steel work until decking or grating is installed and guardrails are in place around all unprotected edges and openings.

6.5.3.5 Barricades with signage will be installed at stairways to warn of incomplete floors.

6.5.4 Perimeter guardrail systems:

6.5.4.1 Perimeter guardrail system will be installed on all elevated levels as soon as the work has progressed far enough to allow installation to begin.

6.5.4.2 Refer to HC Fall Protection Policy

6.5.5 Floor/roof holes and openings:

6.5.5.1 Metal deck at roof and floor openings shall be installed in the following manner:

6.5.5.1.1 Where structural design and constructability allows, framed deck openings shall have structural members turned down to allow continuous deck installation.

6.5.5.1.2 Where structural design allows, roof and floor openings shall be covered during the decking process.

6.5.5.1.3 Decking holes and openings shall not be cut until essential to the construction process and openings shall be immediately protected.

6.5.5.1.4 All floor and roof holes and openings will be covered, secured, with temporary hole covers identified as such, or barricaded with standard guardrails or equivalent.

6.5.6 Hand Protection:

6.5.6.1 Employees will wear heavy-duty work gloves that fit properly.

6.5.6.2 Hands will be kept clear of pinch points.

6.5.7 Preventing or Minimizing Slips, Trips, Falls and potential overhead hazards:

5.2.7.1 Tools, bolts, washers, drift pins, etc., will:

6.5.7.1.1 **NOT** be left laying on beams, scaffold platforms or other elevated work places.

6.5.7.1.2 Be placed in bolt bags or approved containers
6.5.7.1.3 Raised/lowered using a hand line, they will **NOT** be thrown and containers will **NOT** be over loaded.

6.5.7.1.4 Metal and/or plastic buckets will **NOT** be used for hoisting items to employees.

6.5.7.2 All bolt bags, tools, drift pins, water kegs, and similar tools, material and equipment used at heights will be positively secured at all times to prevent them from falling.

6.5.7.3 Barricades with warning signs (Limited Access Zones) will be installed in areas where there is potential for employees to be exposed to falling object hazards.

6.5.7.4 Magnetic drills used at elevated areas shall:

6.5.7.4.1 Be secured from falling by a rope or cable.

6.5.7.4.2 Have the electrical cord tagged at the electrical power outlet; the tag should read, “Danger – Do Not Disconnect” and will include the name of the user and the subcontract supervisor responsible for the work.

6.6 **Connecting Steel and Connectors**

6.6.1 Connectors must be protected from falls at 6’ or greater.

6.6.2 When connectors are working together:

6.6.2.1 Only one connector will be designated to give signals. This individual will be a qualified signal person.

6.6.2.2 The connector assigned as the qualified signal person will be identified on the daily JHA and will wear an identifier to signify their role as signal person.

6.6.2.3 Each Connector will select a position where he cannot be struck by a swinging load.

6.6.2.4 When connectors are working at the same connection point:

6.6.2.4.1 One end of the structural steel will be connected and drawn snug with a spud wrench before going out to connect the other end.

6.6.2.4.2 Only one connector will go out to connect the other end.

6.6.3 During the placing of structural steel members:

6.6.3.1 The load shall not be released from the hoisting line until the members are secured with at least two bolts per connection of the same size and strength as shown in the erection drawings,
drawn up wrench tight or equivalent as specified by the structural engineer.

6.6.3.2 Members shall be bolted so that they will not roll before the beam is disconnected from the crane.

6.6.3.3 Solid web structural members used as diagonal bracing shall be secured by at least one bolt per connection drawn up wrench tight or equivalent as specified by the structural engineer.

6.7 Double connections:

6.7.1 When two beams on opposite sides of a column web share common connection holes, a minimum of one bolt with a wrench tight nut must not be loosened or removed from the connection unless a shop attached or field bolted seat or similar connection device is present to secure the first member from accidental displacement.

6.7.1.1 When seats are provided, the beam to seat bolt must be made up before removing the bolts from the double connection.

6.7.1.2 Field modified details for double connections shall be approved by the engineer of record prior to installation.

6.7.2 Trusses will be securely tied or crossed braced until permanent braces are installed.

6.7.3 Spud wrenches/drift pins:

6.7.3.1 Placed in holes will NOT be used as reliable connecting devices.

6.7.3.2 Standing on a “spud wrench” is prohibited.

6.7.4 Column Anchor Bolts and Base Plates

6.7.4.1 Column anchor bolts and column to base plate welds must be designed so that the column will withstand a 300-pound eccentric load 18 inches away from the face of the column in each direction at the top of the column. Column splices must be designed within the same specifications.

6.7.4.2 Columns must be set on level finished floors, pre-grouted leveling plates, leveling nuts, or shim packs which are adequate to transfer construction loads.

6.7.4.3 Unstable columns must be guyed or braced where deemed necessary by a competent person.

6.7.4.4 Anchor bolts may not be repaired, replaced or field modified without the approval of the project structural engineer of record. This approval must indicate any requirements for special column guying or bracing as a result of the repair, replacement or modification.
6.8 **Columns:**

6.8.1 All columns will have a minimum of four anchor bolts.

6.8.2 Where columns cannot be tied in to the structural frame by the end of the shift, they shall be braced and or guyed off to maintain stability until they can be tied in.

6.8.3 Personnel assigned to bolting will ensure that they have firm footing when using hand or power tools.

6.9 **Flooring:**

6.9.1 Permanent floors must be installed as the erection of the structural members progresses.

6.9.2 At no time will there be more than four floors (48 feet) of unfinished flooring, temporarily bolted or welded structure above the foundation or uppermost permanently secured floor.

6.9.3 Structures will be plumbed and permanently bolted as the steel is erected.

6.10 **Air compressors, hoses, flow valves:**

6.10.1 An excess flow valve will be installed at the air compressor’s branch connection to reduce the air flow in the event a hose becomes disconnected.

6.10.2 The excess flow valve will be tested by a competent person to ensure it works properly.

6.10.3 Air hose connections must be secured by whip checks are required at each hose connection.

6.10.4 Before disconnecting air hoses, the compressor will be shut off and pressure bled down.

6.11 **Steel Joists:**

6.11.1 Steel framing, where steel joists or girders are used and columns are not framed in at least two directions with solid web structural steel members (beams), the joist or girder must be bolted at or near columns to provide lateral stability during erection.

6.11.2 Where joists at or near columns span 60 feet or less, the joist must be designed to support the weight of one erector on a bolted joist to release the hoisting cable without the need for bridging.

6.11.3 Where joists span more than 60 feet, the joists must be set in tandem with all bridging installed unless an alternative method which provides equivalent stability is designed by a qualified person and is included in a site-specific erection plan.
6.11.4 Stabilizer plates must be provided on columns where strut joists and girders intersect the column. The plate must extend down 3 inches below the bottom chord of the joist or girder with a 13/16" hole to provide an attachment point for guying or plumb cables.

6.11.5 Joists may not be placed on structures that have not been stabilized with guy cables or permanent angle braces. When joists are landed on structures they must be secured to prevent unintentional displacement prior to installation.

6.11.6 Except for joists that have been pre-assembled into panels, individual joists in bays of 40 feet or more must be fabricated to allow for field bolting to provide stability during erection.

6.11.7 A bridging terminus point must be established before bridging is installed.

6.11.8 Modifications cannot be made to joists that affect the strength of the joist without the approval of the project structural engineer of record.

6.11.9 Joists and girders shall not be used as an anchorage point for fall arrest systems unless written permission is obtained from a qualified person.

6.11.10 Attachment of Joists and Girders

6.11.10.1 All "K" series joists must be attached to the structure with a minimum of two 1/8" fillet welds one inch long or with two 1/2" bolts, or the equivalent.

6.11.10.2 All "LH" and "DLH" series joists must be attached with two 1/4" welds two inches long or with two 3/4" bolts or the equivalent.

6.11.10.3 Each joist must be attached on at least one end immediately upon placement in its final erection position and before additional joists are set.

6.11.10.4 Panelized joist systems must be attached at each corner before the hoisting cable can be released.

6.11.11 Erection of Steel Joists

6.11.11.1 One end of all joists must be attached to the structure before allowing the weight of an ironworker on the joist.

6.11.11.2 On joists that span 40 feet or less that do not require bridging, only one erector shall be allowed on the joist until all bridging is installed and anchored.

6.11.11.3 On joists that span 40 feet or more, erection bridging located closest to the center of the span must be diagonal bridging and must be fastened into place before releasing the hoist line. A maximum of one erector is allowed on these spans until all other bridging is installed and anchored.
6.11.11.4 Where the span of the joist is 60-100 feet, the two rows of bridging nearest the third points of the joist must be diagonal bridging and bolted into place before the hoist line is released. A maximum of two erectors is allowed on the span until all other bridging is installed and anchored.

6.11.11.5 Joists 100 feet through 144 feet in length must have all rows of bridging installed prior to releasing the hoist line. Only two erectors are allowed on the span until all bridging is installed.

6.11.11.6 For steel members spanning more than 144 feet, the erection methods shall be in accordance with 29 CFR 1926.756. The structural engineer of record must provide direction for setting girders this long or longer. Normally, the girder manufacturer or engineer will make notations on erection drawings regarding bridging requirements for girders of this length. If clear direction is not given on the plans, consult the engineer, or install all bridging unless noted otherwise on the plans.

6.11.11.7 On all joists that are bottom bearing, diagonal bridging closest to the bearing point of the joist must be installed prior to releasing the hoisting cables.

6.11.11.8 Attachment locations of bolted diagonal bridging must be indicated on the erection drawing. The erection drawing shall be the exclusive indicator of the proper placement of this bridging.

6.11.11.9 Erection clips or functional equivalents must be provided where the bridging bolts to the joists.

6.11.11.10 When two pieces of bridging are attached to the joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second.

6.11.11.11 Bridging attachments shall not protrude above the top chord of the joist.

6.11.12 Placing Loads on Steel Joists:

6.11.12.1 During construction, any contractor placing loads on steel joists shall provide means for adequate distribution of loads so that the carrying capacity of any steel joist is not exceeded.

6.11.12.2 No construction loads are allowed on steel joists until all bridging is installed and anchored, and all joist bearing ends are attached with the following exceptions:

6.11.12.2.1 A bundle of bridging that shall not exceed 1000 pounds. A bundle of bridging shall be placed on a minimum of three joists which must be secured on one end. The edge of the bundle must be placed within one foot of the secured end of the joist.
6.11.12.2.2 A bundle of decking may not be placed on less than three steel joists unless:

6.11.12.2.2.1 A qualified person has determined, as documented in a site-specific erection plan, that the structure or portion of the structure is capable of supporting the load.

6.11.12.2.2.2 At least one row of bridging is installed and anchored.

6.11.12.2.2.3 The joist is attached at both ends.

6.11.12.2.2.4 The total weight of the decking does not exceed 4000 pounds.

6.11.12.2.2.5 The edge of the bundle of decking must be placed within one foot of the bearing surface of the joist end.

6.12 Plumbing Up

6.12.1 Lashing and lashing lines:

6.12.1.1 Will be used to plumb the structure with softeners and hooks.

6.12.1.2 Will be installed so as to have a least one “dead” turn.

6.12.1.3 Will be securely attached before stressing the turnbuckles.

6.12.1.4 When a turnbuckle is under stress, a device will be used to keep it from unwinding while under load.

6.12.1.5 Turnbuckles will be safety wired when final adjustment is made under tension.

6.12.2 Plumbing guys:

6.12.2.1 Will be placed so that the bolt-out crew can get at the connection points safely.

6.12.2.2 A properly placed “dead man” of size adequate to resist the load will be used if there is not a suitable anchor to attach the guys.

6.12.2.3 Will be removed only under the supervision of a competent person

6.12.2.4 Will **NOT** be removed until all steel is bolted.

6.12.3 All wire rope and wire rope clips will:
6.12.3.1 Wire rope will be constructed of ½ inch wire rope (minimum in size) secured with at least 3-dropped forged domestic wire rope clips spaced 3 inches apart.

6.12.3.2 The number and spacing of wire rope clips vary with wire rope size and will be installed per wire rope clip manufacturer’s requirements.

6.12.3.3 Be installed so that the “U” is against the dead-end of the wire rope.

6.12.3.4 Be inspected for tightness at least one hour after installation to verify the rope’s integrity (the wire rope diameter may decrease under tension).

6.12.3.5 Be inspected weekly and retightened as necessary.

6.12.3.6 **NOT** be malleable.

6.13 Decking, Grating and Flooring

6.13.1 Decking, grating, flooring, and other bundles of material will be:

6.13.1.1 Hoisted to the elevated level by a forklift or crane; not by hand.

6.13.1.2 Placed so it is stable and secure.

6.13.1.3 Bundle packaging and strapping shall not be used for hoisting unless specifically designed for that purpose.

6.13.1.4 If synthetic slings are used hoisting bundle of deck, softeners shall be used to avoid damage from sharp edges of decking.

6.13.1.5 If loose items such as dunnage, flashing, or other materials are placed on the top of deck bundles they must be secured.

6.13.1.6 Shake out hooks will not be used to pick or place grating. Grating hooks will be used to move grating.

6.13.2 Installing decking, grating and flooring:

6.13.2.1 Shall be sequenced to minimize material handling.

6.13.2.2 Shall begin at the completed stairways, installing one piece at a time.

6.13.2.3 Placement will be followed immediately by the fastening operation.

6.13.3 Fall-arresting equipment will be worn by employees standing on any unsecured decking, grating or flooring.

6.14 Unprotected Sides and Edges
6.14.1 Fall Protection

6.14.1.1 Reference Haselden Fall Protection Policy

6.14.1.2 Until permanent guardrails are installed, temporary guardrails will be installed on all open sides and ends of floors, roofs or platforms.

6.14.1.3 Wire ropes may be used as top and mid-rails for perimeter protection provided it meets the following:

6.14.1.3.1 Is at least 3/8 inches in diameter.

6.14.1.3.2 Cable guardrails must be secured using at least 3 dropped forged domestic wire rope clips spaced 3 inches apart.

6.14.1.4 Cable guardrails must not be spliced, but must be terminated at a column or other suitable anchor point.

6.14.1.5 Cable guardrails shall be maintained taut at all times with the maximum deflection of the top rail, when a 200-pound load is applied in any direction, of less than 3 inches.

6.14.1.6 Cable guardrails shall not be used for fall protection.

6.14.1.7 Guardrails shall not be installed so that they are on the fall side of the unprotected edge.

6.14.1.8 Toe boards will be installed as soon as practicable.

6.14.1.9 Falling object protection and Limited Access Zones shall be established until toe boards are installed.

6.14.1.10 Guardrails, when intended for use as fall protection on floors or roofs after steel erection has been completed and the structure turned over to the General Contractor for use by other trades, shall be installed at a height that takes into consideration the thickness of slabs or roofing materials so that it is not necessary to raise the guardrail as construction progresses.

6.14.2 Guardrail system inspections:

6.14.2.1 Near completion, a representative of the subcontractor that installed the system will:

6.14.2.1.1 Walk the entire perimeter guardrail system and inspect it for compliance with guardrail requirements.

6.14.2.1.2 Correct any deficiencies identified during the inspection.

6.14.2.1.3 Provide the Haselden management team with written documentation stating that the guardrail system is
6.14.2.1.4 The Haselden management representative will provide any subsequent subcontractor performing work in the area a copy of the documentation upon request.

6.15 Rigging, Material Handling and Material Staging

6.15.1 Refer to the Haselden Rigging policy

6.15.2 Hoisting/lifting material with cranes:

6.15.2.1 Material will **NOT** be hoisted over personnel nor will personnel be allowed to walk, stand, or work under suspended loads.

6.15.2.2 Crane operators must sound their horns or an equivalent audible signal before raising a load.

6.15.2.3 Employees shall remove themselves from the area of the hoisting path by a distance of 10 feet for members hoisted horizontally.

6.15.2.4 Employees shall remove themselves from the area of the hoisting path of members hoisted vertically by a distance of 10 feet plus the length of the member.

6.15.2.5 Routes for suspended loads shall be planned to ensure that no employee is required to work directly below a suspended load, with the following exceptions:

6.15.2.5.1 Employees engaged in the initial connection of the steel

6.15.2.5.2 Employees necessary for the hooking and unhooking of the load

6.15.2.6 Personnel will:

6.15.2.6.1 **NOT** stand, sit or ride on any load being hoisted.

6.15.2.6.2 Stand clear when slings/chokers are loosened on a load of steel.

6.15.2.6.3 **NOT** grab or take hold of the crane hoist rope near the sheave block.

6.15.2.7 Tag lines shall be:

5.8.3.4.1 Used for controlling all hoisted loads.

5.8.3.4.2 Securely attached to the load.
5.8.3.4.3 Made up of sufficient length to avoid entanglement with adjacent structures.

6.15.2.7.1 Not have knots or loops tied in the free end of the rope.

6.15.2.8 Rigging, hoisting, and staging structural steel:

6.15.2.8.1 Materials being hoisted shall be secured to prevent unintentional displacement.

6.15.2.8.2 During hoisting, the qualified signal person and crane operator will observe the load at all times to ensure that nothing impedes the lift or entangles the line.

6.15.2.8.3 Structural steel will be stored and staged on wood dunnage or equivalent in a stable position.

6.15.2.8.4 Staging area for structural steel will be level, dry and accessible to those involved in the steel construction process.

6.15.3 Multiple Lift Rigging

6.15.3.1 A multiple lift shall only be performed if the following criteria are met:

6.15.3.1.1 A multiple lift rigging assembly is used.

6.15.3.1.2 Maximum of 5 members are to be hoisted per lift.

6.15.3.1.3 Once a member is released from the crane, a trailing hook may become snagged on materials or objects. Therefore, the hook shall not be allowed to trail but shall be latched to the top of the sling, or eye hooks with a positive locking feature shall be used.

6.15.3.1.4 Only individual structural steel members may be hoisted by the multiple lift technique.

6.15.3.1.5 Lifting of bundles is prohibited.

6.15.3.1.6 Tag lines are required on each member being lifted.

6.16 Training Requirements

6.16.1 Subcontractor will ensure personnel performing steel erection are qualified through training and job experience and that the training, as a minimum, includes:

6.16.2 Fall hazards:

6.16.2.1 Recognition and identification of fall hazards in the work area.
6.16.2.2 Fall protection, falling object protection, positioning systems, fall restraint, and guardrail systems.

6.16.2.3 Training for proper installation, inspection, use and maintenance of fall protection systems.

6.16.2.4 Fall protection rescue.

6.16.2.5 Calculating fall distance.

6.16.2.6 Horizontal lifeline installation and use.

6.16.3 Special/task specific training:

6.16.3.1 Qualified signal person.

6.16.3.2 Qualified rigger

6.16.3.3 Connecting

6.16.4 Maintain training records for all personnel performing steel erection on site.

6.16.5 Provide Haselden management team access to these records upon request.

7.0 Attachments

7.1 Deck Release Form
7.1 Release of Fall Protection and Access

_____________ will install and maintain all safety protective devices as necessary to protect its employee’s from hazards associated with steel erection. The AISC code of standard practice guidelines (7.2) will be followed as well as OSHA Standards including Subpart “R” and Subpart “M” as they relate to steel erection.

_____________ will provide a means of safe access for its employees. These devices shall be used by _____________ employees only, and their use by any other contractor, sub-contractor or their employees is prohibited unless agreed upon by signing this document.

Safety devices including guardrails, covers, and horizontal lifelines that are installed for the protection of those involved in steel erection may or may not meet the standards required for use by employees of other subcontractors, _______________ will not assume responsibility for any claims arising from the use of those devices by other contractors or their employees. _____________ has inspected and accepted control and responsibility of the safety system prior to authorizing persons other than steel erectors to work in the area or use the safety protection. Execution of this agreement constitutes such a directive and an agreement by _____________ to inspect and accept full responsibility for the safety system in the noted Area(s) below and agrees to hold _______________ from liability for any and all injuries or incidents incurred through the use of these devices.

No employee shall use fall protection installed by _______________ in any area including stairways that has not been temporarily released by _______________. _____________ must inspect all safety devices in the area and agree to accept responsibility for the condition, maintenance and proper use of such devices by their employees and employees of other subcontractors, by signing this form.

_____________ may install additional safety devices (including, but not limited to, guardrails, lifelines, temporary covers, ladders, scaffolds, temporary work platforms, or any anchorage designed as permissible for use as part of an overall personal fall arrest system), and _____________ agrees to indemnify _____________ from liability for any and all injuries or accidents incurred through the use of these devices.

The Area, (floor, roof, or stairway or other part of job), described below has been released by _______________ for use by _____________. By signature below, this Area and any fall protection therein, has been accepted according to the terms and conditions described above.

| Describe Area (such as “all of floor 3”, or “NE stairwell”, or partial floor description such as “floor 3 column line 1 to 5 and beam line A to K”, etc:) |
|------------------|------------------|
| Date:            | Job Name:        |
| Level:           | Bounded by Gridlines: |
| Description of Area: |

Fall Protection/Access User/Contractor: _____________

By (Authorized Representative): ____________________________ Title: __________________________

Steel Erector: ____________________________

By (Authorized Representative): ____________________________ Title: __________________________
1.0 Purpose

1.1 Stretch and Flex is applicable to all Haselden Construction projects. This program has been recognized to reduce and eliminate strains and sprains in our industry.

2.0 Scope

2.1 This document applies to all Haselden employees in the field.

2.2 Haselden management employees shall participate in stretch and flex when they are in an area where the exercises are being performed by other Haselden employees.

3.0 Definitions

3.1 Stretch and Flex – to extend one’s body or limbs

4.0 Reference Documents

5.0 Responsibilities

5.1 Superintendents – to manage and enforce the procedures and policies of this program as it pertains to all Haselden employees.

5.2 Employees – to participate in this stretch and flex program.

6.0 Implementation

6.1 Stretch and Flex

6.1.1 Haselden Construction has established Stretch and Flex for its employees who are performing work on a Haselden Construction job site. This program is mandatory for all field workers. It is recommended that all subcontractors participate with Haselden Construction or in their Company’s stretch and flex program.

6.1.2 Benefits of the program are that workers will increase their energy levels, increase flexibility, alertness, reduce range of motion injuries and injury rate, improve body mechanics, posture, and circulation, increase
strength and reduce stress levels while preparing the body for physical work activity.

6.1.3 Stretch and Flex shall be performed twice per day – this is a mandatory program and each session should not exceed 10 minutes:

6.1.3.1 In the morning (or beginning of the shift) while reviewing the Plan of the Day (POD) or Pre-Task Analysis

6.1.3.2 After lunch while reviewing the POD or Pre-Task Analysis and any updates for the day

6.1.3.3 The crew leader will initiate the daily stretch and flex.

6.1.4 Employees will be trained by their supervisor to perform the designated stretches. Handouts and posters will be made available with a picture and description of the stretches.

6.1.5 Stretching a cold muscle may cause injury and may decrease the benefits of stretching. A simple warm up before stretching begins will improve flexibility, reduce stretching-induce injuries and will improve stretching sessions. This warm up is not to be a strenuous aerobic workout, but it prepare the body for stretching.

7.0 Attachments

7.1 HC Stretch and Flex Training

7.2 HC Stretch and Flex Poster
Introduction

- Workplace injuries as a result of sprains, strains and muscular fatigue are a significant problem across all industries.
- Statically over 45% of all lost time injuries are attributed to Strains, Sprains, and Hernia.
- The stretches identified on the subsequent slides can prepare the body for everyday work stresses.
Introduction

• This is done through stretching and strengthening the specific muscles commonly associated with strains and sprains.
• If performed correctly and regularly, these exercises may reduce the incidences of muscle strain and sprains.
• The first item to do is a warm up exercise which could be:
  – Fast pace walk from you car to the job
  – A lap around your work area
  – Generally something that is not strenuous and will raise your heart beat
• Stretch, do not bounce, until mild tension is felt
• Do not load the body member to the stretched.
  – Your group leader will explain no loading on the body
• Hold the stretch position for 15 to 30 seconds, then relax.
Introduction

• Never take a stretch past the point of tension which can cause a strain or pain
• All movements are gently but progressively increased
• Be as relaxed as possible
• It is easier to stretch and strengthen a relaxed muscle versus a tight one.
Benefits of the Program

• An increase in worker energy levels
  – Increased flexibility
  – Increased alertness
  – Reduced range of motion injuries
  – Reduced illness rate
  – Improved body mechanics, posture, and circulation
  – Increased strength
  – Increased circulation
  – Reduced stress levels

• Prepares the body for physical work activities
• It is not a competition, but should be a team building activity
Implementation

- During Employee Orientation
  - Distribute the stretch documents
  - Handouts
  - Posters
- Train employees
- Monitor the program
  - Designate Stretch and Flex leader on all projects
Implementation

- This program is mandatory for field workers
- Management must be a leader and show their support for the program.
- Haselden management employees shall participate in stretch and flex when they are in an area where the exercises are being performed by other Haselden employees.
Stretch & Flex

- Will be performed twice per day – this is a mandatory program and each session should not exceed 10 minutes
  - Morning (beginning of the shift) while reviewing the Plan of the Day (POD) or Pre-Task Analysis
  - After lunch while reviewing the POD or Pre-Task Analysis and any updates for the day
  - The leader of the crew will initiate the daily stretch and flex
The Calf Stretch

**MUSCLE:** Calf muscle

**LOCATION:** Rear lower leg

**STANCE:** Stand with feet hip width apart, back straight and stomach tight. Keep the knees slightly bent

**MOVEMENT:** Keeping in a straight line from head to the right heel, lean forward but keeping the right heel on the floor. Place both hands on left thigh.

**HOLD:** Slowly count to 20 (repeat twice) Repeat other side. the front leg should be kept over the ankle. Do not hold your breath, breathe gently

**SAFETY POINTS:** Keep the back straight and the tummy tight. The knee of the front leg should be kept over the ankle. Do not hold your breath, breathe gently
The Single Leg Stretch

**Caution:** avoid this exercise if pain is felt in the lower back

**MUSCLE:** Hamstring, lower back muscles and stability

**LOCATION:** Lower back, back of thigh

**STANCE:** Cross legs, keeping both knees slightly flexed

**MOVEMENT:** Bend forward slowly from the waist and place both hands on the forward knee. Continue bending forward as far as possible

**HOLD:** Hold position for one breath cycle. Repeat other side.

**SAFETY POINTS:** Do breath continually. Don’t continue if painful and don’t lock knees.
The Quad Stretch

MUSCLE: Quad/Quadriceps Femurs
LOCATION: Front of thigh
STANCE: Two feet together, bend your left knee and with your left hand take the left foot towards your buttock.
MOVEMENT: Slight bend on the supporting leg. Keep the knees close together. Tilt the pelvis forward and keep the back straight.
HOLD: Count slowly to 20 (repeat twice) Repeat other leg.
SAFETY POINTS: Always keep the support leg bent. Use a wall or other object for balance. Keep your back straight and stomach tight.
The Chest Stretch

**MUSCLE:** Chest muscles/Pectoralis and Deltoid

**LOCATION:** Chest and Shoulders

**STANCE:** Stand with feet shoulder width apart and knees slightly bent

**MOVEMENT:** Place both hands on the buttocks and gently ease the shoulders backwards. This should give a feeling of the chest 'opening'.

**HOLD:** Count slowly to 20 (repeat stretch twice)

**SAFETY POINTS:** Keep the back straight and chin up. Keep knees slightly bent
The Hip Circle Stretch

**MUSCLE:** Stretch lower back  
**LOCATION:** Lower back  
**STANCE:** With your hands on your hips and feet spread wider than your shoulders  
**MOVEMENT:** *SLOWLY* make circles with your hips in a clockwise direction for 9 repetitions  
**HOLD:** Repeat in a counter-clockwise direction  
**SAFETY POINTS:** Do continue to breathe and don’t continue if it is painful
The Upper Back Stretch

**MUSCLE:** Trapezius and Latissimus Dorsi  
**LOCATION:** Upper back  
**STANCE:** Stand with feet shoulder width apart and knees slightly bent.  
**MOVEMENT:** Clasp the hands in front at shoulder height with the palms away from the body. Gently push the palms away without locking the elbows.  
**HOLD:** Count slowly to 20. Repeat stretch twice  
**SAFETY POINTS:** Keep the back straight and the tummy tight. Knees slightly bent
The Deltoid Stretch

**MUSCLE:** Deltoid

**LOCATION:** Shoulder

**STANCE:** Stand with feet shoulder width apart and knees slightly bent.

**MOVEMENT:** Take the right arm across the body at shoulder height, keeping the shoulder relaxed. Place the left hand on the right arm slightly above the elbow and gently bring the right arm towards the chest.

**HOLD:** Count slowly to 20. Repeat stretch twice. Repeat with left arm.

**SAFETY POINTS:** Keep the back straight and stomach tight. Make sure the knees are slightly bent at all times. Keep head facing forward.
The Hand Stretch

**MUSCLE:** Wrist, Forearms, and Hands  
**LOCATION:** Hands and Arms  
**STANCE:** Stand with feet shoulder width apart  
**MOVEMENT:** Place hands palm-to-palm in front of you. Move hands upward, keep your palms together until you feel a mild stretch.  
**HOLD:** Count slowly to 20.  
**SAFETY POINTS:** Keep the back straight and stomach tight. Make sure the knees are slightly bent at all times. Keep head facing forward.
The Hand Stretch

**MUSCLE:** Wrist, Forearms, and Hands  
**LOCATION:** Hands and Arms  
**STANCE:** Stand with feet shoulder width apart  
**MOVEMENT:** Place hands palm-to-palm in front of you. Move hands upward, keep your palms together until you feel a mild stretch.  
**HOLD:** Count slowly to 20. Repeat in an inverted position.  
**SAFETY POINTS:** Keep the back straight and stomach tight. Make sure the knees are slightly bent at all times. Keep head facing forward.
The Forearm Stretch

**MUSCLE:** Forearms, and Hands, stretches the wrist extensor

**LOCATION:** Hands and Arms

**STANCE:** Stand with feet shoulder width apart

**MOVEMENT:** Straighten the right arm. Place the palm of the left hand on top of the right hand. Slowly move right palm in the direction of the floor until a stretch is felt

**HOLD:** Count slowly to 20. Repeat with the other hand

**SAFETY POINTS:** Keep the back straight and stomach tight. Make sure the knees are slightly bent at all times. Keep head facing forward.
Stretch and Flex Program

**Directions:** Hold each stretch for 20 seconds. Do not push the stretch so it hurts. Breathe. Stand with feet shoulder width apart. Hold onto some material, gang box, or something else to keep your balance. Each stretch is to be performed on both the right and left side of the body and each stretch should be performed twice.
1.0 Purpose

1.1 DRUG FREE WORKPLACE

1.2 To establish and promote a safe, efficient and productive work environment for all Haselden Construction employees by providing a workplace and workforce free from drugs, alcohol and controlled substances.

2.0 Scope

2.1 This policy applies to all Haselden employees.

3.0 Definitions

3.1 Controlled Substances - Marijuana, cocaine, Methamphetamines, Amphetamines, LSD (acid), PCP (angels dust, crystal), MDMA (ecstasy), Opium (morphine) and any other unauthorized drugs and abnormal or dangerous substances which may affect a person’s mood, motor function or responses; or alter or affect a person’s perception, performance, judgment, reaction or senses while working.

3.2 Designer and Synthetic Drugs - Any drugs that are made in clandestine laboratories where chemists alter the molecular structure of either legal or illegal drugs to create a drug that is not explicitly banned by federal law.

3.3 Unauthorized Drugs - Drugs such as, but not limited to: non-prescription inhalants, stimulants and amphetamines or any other tablets, capsules, or powders containing controlled over-the-counter ingredients whose physical appearance mimics various prescription drugs or products which contain popular substances of abuse and are regulated under the provisions of the controlled substance act of 1970. The term includes prescription drugs not being used for prescription purposes.

3.4 Unauthorized Alcoholic or Intoxicating Beverages - Including beer, wine, and liquor. An employee found to be consuming an alcoholic beverage during the workday or whose alcohol blood level is at or over 0.02% during working hours, is in violation of this policy. DOT Certified and regulated drivers may be disqualified for operation of a commercial motor vehicle and subject to disciplinary action if blood alcohol level is at or above 0.02%.
3.4.1 The only exception for the use of alcoholic beverages may be made by company management personnel, for company sponsored social events, when proper safeguards are utilized.

3.5 **Prescription Drug Abuse** - The use of a legally controlled substance by an individual other than the individual for whom it was prescribed is prohibited.

3.5.1 Employees and others covered by this policy may possess prescription drugs on the jobsite provided:

- **3.5.1.1** The prescription drugs are prescribed by an authorized medical practitioner for current use (within the past 12 months) the person in possession and the medicine is in its original container and is in the employee/person's name;
- **3.5.1.2** Employees must not consume prescribed drugs more often than prescribed by the employee’s physician, and they must not allow any other person to consume the prescribed drug;
- **3.5.1.3** Any employee who has been informed that the medication could cause adverse side effects while working or where the medication indicates such warning must inform his or her supervisor of the possible adverse side effects prior to using such substances on the job;
- **3.5.1.4** The use of drugs/medicine prescribed by a licensed physician for the individual employee is permitted provided that it will not affect work performance. However, Haselden Construction reserves the right to have a licensed physician determine if use of a prescription drug or medication by an employee may produce effects which create the risk of injury to the employee or others while working. If such a finding is made, the company may limit or suspend the work activity of the employee during the period that the physician advises. The employee’s ability to perform his/her job safely may be adversely affected by the consumption of such medication. Any employee who has been suspended or limited may seek substitute medication from his/her physician and may request that the company appointed physician make an additional determination concerning the affect the substitute medication may have. Suspension or limitations will be lifted upon physician determination that the substitute medication will not adversely affect the employee’s performance, or otherwise create a safety risk.

3.6 **Drug Related Paraphernalia** - is any unauthorized material, equipment or item used or designed for use in testing, packaging, storing injecting, ingesting, inhaling, or otherwise producing into the human body an unauthorized substance. The possession of drug related paraphernalia is prohibited on company property, in company vehicles, and on the jobsite.

4.0 **Reference Documents**

5.0 **Responsibilities**
5.1 Project Managers and Project Superintendents

5.1.1 It is the joint responsibility of the Project Managers and Project Superintendents to ensure that all personnel under their supervision adhere to, follow and report for all scheduled and/or unannounced testing. The Director of Health and Safety along with the Project Managers and Project Superintendents are responsible for the implementation and maintenance of the Substance Abuse Prevention Policy on their respective projects.

5.2 The Director of Health and Safety

5.2.1 Shall be responsible for coordination, testing, monitoring, receiving results, establishing and administering disciplinary procedures.

5.3 All Managers and Superintendents

5.3.1 Shall be responsible for maintaining confidentiality of all test results and violations of the Substance Abuse Prevention Policy.

6.0 Implementation

6.1 Substance Abuse:

6.1.1 Consistent with Haselden Construction health and safety requirements, Haselden Construction takes a zero tolerance stance regarding any employee who comes to work under the influence of drugs, alcohol, or controlled substances, or any employee who ingests or is under the influence of drugs, alcohol, or controlled substance while at work. Any violation of this policy will be cause for immediate discipline, including termination.

6.2 Prohibitions:

6.2.1 Unlawful manufacture, distribution, dispensation, possession, or use of a drug, or controlled substance and on-the-job use of alcohol by the employee is strictly prohibited. Any employee that tests “positive” is considered under the influence for purposes of this policy. All employees are subject to random testing, (where applicable state law permits) at the company’s discretion, for drug or controlled substances and/or the use of alcohol. Consequences of violation of this policy include, but are not limited to, immediate termination of employment.

6.3 Employee Privacy

6.3.1 Haselden Construction employees do not have a right of privacy on company property or in company vehicles, including, but not limited to desks, lockers and the like. Haselden Construction may search any container an employee brings to work or employee-owned vehicle located on company property or job site at any time, including when the
employee leaves work at the end of the day. Refusal to submit to such inspection may result in discipline up to and including termination of employment.

6.4 Substance Abuse Testing

6.4.1 As a condition of employment, all applicants and employees shall be required to undergo urine drug tests, breathalyzer tests, or other examinations to determine the use of any illegal or unauthorized drugs, alcohol, or substances as outlined in these procedures as follows:

6.4.1.1 Pre-employment:

6.4.1.1.1 Applicants are offered conditional employment with the company and must consent to and undergo a drug and/or alcohol test.
6.4.1.1.2 Applicants who test positive will be denied employment.
6.4.1.1.3 Refusal to submit to a test, switching, tampering with, or in any way adulterating any test sample, will be deemed a voluntary withdrawal of application for employment.
6.4.1.1.4 Drug and/or alcohol testing shall be required for any applicant who has been employed by the company in the past and successfully completed substance abuse testing during that prior period of employment.

6.4.1.2 Post Incident:

6.4.1.2.1 All employees who are involved in an occupational on the job incident or “near miss” including, but not limited to, incidents in which equipment, vehicles or property are damaged or which involved personal injuries shall submit to drug/alcohol testing.

6.4.1.3 Reasonable Suspicion/For Cause:

6.4.1.3.1 Employees shall submit to testing whenever a supervisor has reasonable suspicion, based on specific objective facts that the employee may be in violation of this policy.

6.4.1.4 Periodic/Intermittent/Access Testing:

6.4.1.4.1 Periodic/Intermittent testing shall be unannounced and testing shall be performed at least once every two calendar years. Access testing may be performed at the start of a project.

6.4.1.5 Random testing may be required.

6.4.1.6 The results of a substance abuse screening/drug test will be considered confidential and on a need to know basis only.
6.5 DISCIPLINARY PROCEDURES:

6.5.1 TERMINATION OF EMPLOYMENT- Employees may, at the company's discretion be immediately terminated for:

6.5.1.1 Reporting to work or working while under the influence of any substance prohibited by this policy.
6.5.1.2 Refusing to submit to screening, testing, or inspections, or tampering with, switching or in any way adulterating any test sample.
6.5.1.3 Failure to notify the company within 5 days of a conviction of any criminal drug statute conviction for violations occurring in the workplace.
6.5.1.4 Possessing any prohibited substances, firearms, weapons, stolen property or other prohibited items on company property or jobsites.
6.5.1.5 Failing to comply with the Employee Assistance Program (6.8) treatment or procedures.

6.6 SUSPENSION OF EMPLOYMENT:

6.6.1 An employee who has not committed any of the violations listed above (6.5.1) or who is not terminated may, at the company's discretion, be suspended without pay, pending reinstatement, under the following conditions:

6.6.1.1 Any employee who has notified the company of a criminal drug status conviction for a violation that occurred outside or inside of the workplace. Employee will be suspended until he/she meets the qualifications for reinstatement.
6.6.1.2 Any employee believed to pose a risk to the health and safety of the employee, or other employees or others by the company. Factors that will be considered in making this determination include, but are not limited to: The employee's motor vehicle record (MVR) regarding drug or alcohol related offenses, and repeat or unreasonable incidents, or near miss incidents on the job.

6.7 VOLUNTARY REHABILITATION

6.7.1 If an employee who has less than five years of service and has not committed any of the violations listed above, and voluntarily admits to being addicted to or a habitual user of alcohol and/or any unlawful drugs or prohibited substances, may enter into a rehabilitation program at their time and expense and must meet the qualification for the reinstatement listed below.

6.8 EMPLOYEE ASSISTANCE PROGRAM (EAP):
6.8.1 Haselden Construction recognizes that substance abuse problems can adversely affect job performance. Haselden Construction will provide for “self-admitted substance abuse employees” with five or more continuous years of service, are in good standing with the company (this to be determined by the CEO), who come forward prior to being found positive for any substance prohibited by this policy will be provided with a one (1) time $1,000 maximum benefit.

6.8.2 Qualified employees are encouraged to use this program voluntarily. All records and personal discussion will be kept confidential and will not become part of an employee’s personal record. Participation in substance abuse programs will not jeopardize an employee’s job security, promotional opportunities and reputation.

6.9 MODIFICATION:

6.9.1 This policy and related testing procedures may be revised, modified, or updated from time to time as circumstances warrant. Employees will be notified of any such changes. If any local ordinances or state statutes should nullify any portion of this policy and related procedures, the remaining provisions will continue to be valid and enforceable to the extent consistent with applicable law.

6.10 DRIVING:

6.10.1 Any driver subject to DOT requirements will be tested and must comply with such requirements. Any driver of any vehicle must maintain a driving record satisfactory to Haselden Construction and to Haselden Construction designated insurance carrier.

7.0 Attachments:

7.1 HC Consent To Substance Abuse Screening Test And Release – Authorization for Release of Drug Test Information and Acknowledgment of Substance Abuse Policy
I acknowledge that I have received a copy of the Haselden Constructions Substance Abuse Prevention Policy and that I have read and understand the prohibitions, procedures, obligations and responsibilities contained in this policy. I agree to comply with the Haselden Construction’s Substance Abuse Prevention Policy. I understand that compliance with this policy is a condition of employment.

I consent to substance abuse screening test(s) required by Haselden Construction, herein referred to as the “company”. When the company requests that I have such a test in accordance with the company’s Substance Abuse Prevention Policy and Procedures, I agree to present myself at the time and place designated by the company, to submit samples as requested and to otherwise cooperate fully with the company.

I consent to the submission of such samples to a third party laboratory and/or its contractors for screening, confirmatory testing and analysis.

I also consent to my Physician’s providing to the laboratory, requested information regarding my use of prescribed drugs and medicines that may impact my ability to do my job safely.

I hereby authorize the appointed laboratory, which will perform the testing, to release to the company the results of such testing.

I understand that the samples and information obtained pursuant to this release will be used solely for the following purpose: Test result will be used to determine eligibility for employment and suitability for continued employment with the company for a particular position, or for any position; information regarding the use of drugs and medications will be used by the laboratory to interpret test results.

I also understand that when the company has reasonable cause to believe that I have drugs or alcohol in my possession or that I have violated the Substance Abuse Prevention Policy, the company may search my personal vehicle on Haselden’s property, my baggage, clothing, lunch box, locker, desk, office and/or company provided vehicles. I understand that my refusal to submit or consent to such a search may result in disciplinary action, up to and including termination.

I understand the drug and alcohol testing and substance abuse policy in no way modified the at-will status of my employment at Haselden Construction and in no way implies or guarantees continued employment for any definite term.

This authorization shall remain valid until revoked by me in writing; I have read and understand this consent to Substance Abuse Prevention Screening Tests and release.

I understand that I have the right to receive a true copy of this authorization.

____________________________________  __________________________________
Name (Please Print)  Signature:  Date:

1/15/2018

HC Substance Abuse Prevention Policy
1.0 Purpose

1.1 This procedure is the guidelines necessary to ensure that hand and portable power-tools are free of defects, inspected properly, used according to manufacturer’s instructions, and are safe for use. It also addresses air hoses that are typically used in conjunction with power tools.

1.1.1 Tools must used in accordance with the manufacturer’s instructions, and for the purpose which they were designed.

1.1.2 WARNING: DO NOT allow comfort or familiarity with the tool from repeated use prevent strict adherence to safety rules for the tool.

2.0 Scope

2.1 The program applies to all Haselden projects.

2.2 Personal protective equipment (PPE) required to be worn while operating hand and portable power tools is located in the Haselden PPE Task Specific Matrix.

3.0 Definitions

3.1 Excessive Abrasion: An abrasion that exposes any internal reinforcing fabric of a hose.

3.2 Indirect-Acting Tool: A powder-actuated fastening tool that uses the expanding gas of a powder Load to trigger a captive piston that drives the fastener into material. The fastener is driven by piston inertia. Once free of the piston, the fastener alone has insufficient inertia to produce free flight.

3.3 Live-Rock: Rock or stone in its natural state, unwrought and unaltered.

3.4 Low-Velocity Tool: A powder-actuated fastening tool in which the velocity of the fastener is less than 328 feet per second at 6.5 feet from the muzzle.

3.5 Powder-Actuated Fastening Tool (PAFT): Tool that uses an explosive powder charge (Load) to drive fasteners into various materials.

4.0 Reference Documents

4.1 OSHA Publication 3080 – Hand and Power Tools
4.2 OSHA Publication 3157 - A Guide for Protecting Workers from Woodworking Hazards
4.3 29 CFR 1910.243 – Guarding of Portable Powered Tools
4.4 29 CFR 1910.213 – Woodworking Machinery Requirement
4.5 29 CFR 1926.416 – General Requirement/Electrical
4.6 OSHA eTool – Woodworking
4.7 OSHA eTool - Machine Guarding
4.8 OSHA eTool - Ground-Fault Circuit Interrupters (GFCI)
4.9 OSHA Publication - Pneumatic Nail Gun Safety Tips
4.10 OSHA Construction Outreach Program- Hand and Power Tools
4.11 HASELDEN – Defective Equipment, Tools and Devices “Do Not Use” Warning Tags
4.12 HASELDEN – Air Compressors and The Use of Compressed Air
4.13 HASELDEN – Fire Prevention, Protection and Extinguishers
4.14 HASELDEN – Personal Protective Equipment (PPE) Procedures and Attached PPE Matrix
4.15 HASELDEN – Respirable Silica Hazard Control Policy
4.16 HASELDEN – Respiratory Protection Program

5.0 Responsibilities

5.1 Site Superintendent(s):

5.1.1 Manage and enforce this program as it pertains to Haselden and subcontracted work.

5.2 Tool User:

5.2.1 Inspect before each use the working condition of each tool.

5.2.2 Operate tools in a manner that is consistent with operating requirements, manufacturer’s instructions and this program.

5.2.3 Tag out and remove from service any hand or power tool that is defective.

6.0 Implementation

6.1 Inspection
6.1.1 All hand and portable power tools, extension cords, air hoses and couplings must be inspected before use.

6.1.1.1 Power tools, extension cords and air hoses will be inspected and tested quarterly by a competent person.

6.1.1.1.1 Electrical inspections will include a continuity test of the grounding conductor.

**NOTE:** Inspection indicated by an attached color-coded tape or equivalent method is prohibited.

6.1.1.2 User must perform a “before-use” visual inspection to make sure there are no defects and the inspection marking used is in place and legible.

6.1.1.3 All guards must be in place and properly adjusted.

6.1.1.4 If defects or missing inspection marking are found, the tool, cord, etc. will be taken out of service, tagged “Defective/Do Not Use” and returned to the tool room for repairs and/or inspection by qualified person.

6.1.1.5 Employees are NOT allowed to make modifications to portable power tools, cords, air hoses, coupling, etc.

6.1.1.2 Non-powered hand tools including but not limited to wrenches, hammers, chisels, etc. will be:

6.1.1.2.1 Inspected before each use by the person qualified to use the tool.

6.1.1.2.2 Free of any defects or damage.

6.1.1.2.3 Taken out of service, disposed of or tagged “Defective/Do Not Use” and returned to tool room for repair if damaged and,

6.1.1.2.4 NOT be modified by employees.

6.2 Electrical Power Tools

6.2.1 All portable electric tools must be 3-wire grounded type or double insulated. Double insulated tools will be:

6.2.1.1 Factory labeled as double insulated and,

6.2.1.2 Free of cracks or damage to the outer surface.

6.2.2 Electrical tools will be unplugged when:

6.2.2.1 Not in use,
6.2.2.2 When making any adjustments to them or,
6.2.2.3 Changing any die, bit, blade, etc.

6.2.3 Power tools

6.2.3.1 Cords will be free of any splices.
6.2.3.2 Will never be raised or lowered by their cord; hand lines will be used to raise and lower tools as needed.
6.2.3.3 Guards and handles will be in place and used at all times; guards will NOT be altered or removed.

6.2.4 Only qualified persons will make repairs to electrical tools, cords or electrical components of portable powered tools.

6.2.5 Grinders

6.2.5.1 Must use grinding wheels that are designed and compatible for that type and size of grinder. The speed (RPM) of the grinder must not exceed the RPM of the wheel.
6.2.5.2 All abrasive wheels shall be closely inspected and ring tested before installation.
6.2.5.3 Material shall be secured, so both hands may be used to hold the grinder.

6.2.6 Saws

6.2.6.1 Must have all applicable and manufacture required guards in place.
6.2.6.2 Must use blades that are designed and compatible for that type and size of saw.
6.2.6.3 Keep hands away from cutting area and the blade.
6.2.6.4 Keep your second hand on auxiliary handle, or motor housing. If both hands are holding the saw, they cannot be cut by the blade.
6.2.6.5 Never hold piece being cut in your hands or across your leg.
6.2.6.6 Maintain a firm grip with both hands on the saw and position your arms to resist kickback forces.
6.2.6.7 Use clamps or another method to secure and support the workpiece to a stable platform.
6.2.6.8 Support large panels to minimize the risk of blade pinching and kickback.
6.2.6.9 Always hold the tool firmly with both hands. Never place your hand or fingers behind the saw.

6.3 Pneumatic Tools

6.3.1 Secure the hose or whip by some positive means such as, dual lock or double locking connectors, to prevent the tool from accidentally disconnecting.

6.3.2 The tool will not be hoisted or lowered by the air hose; hand line will be used to raise or lower tool.

6.3.3 Be equipped with excess flow valves, properly sized, rated and installed between the hose and manifold/air compressor outlet for each pneumatic tool.

6.3.3.1 Be equipped with safety clips or retainer to prevent accidental expulsion of the bit or socket.

6.3.3.2 Be disconnected from the air hose when not in use.

6.3.4 Before changing bits, blades, etc., on pneumatic tools that are not connected/attached to a quick disconnect push on fitting that automatically stops flow when the equipment is disconnected, the:

6.3.4.1 Air supply will be shut off,

6.3.4.2 Air pressure will be bled down then,

6.3.4.3 The tool will be disconnected from the air hose.

6.3.5 Guards and handles will be in place and used at all times; guards will NOT be altered or removed.

6.4 Extension Cords and Air Hoses

6.4.1 Extension cords.

6.4.1.1 Refer to HC Electrical Safety policy

6.4.2 Air hoses and couplings

6.4.2.1 During inspection, the full length of air hoses and the couplings will be checked to ensure that the:

6.4.2.1.1 Hose is free of bulges, tears, punctures, cuts, soft spots, and excessive abrasion and,

6.4.2.1.2 The couplings are not corroded, damaged, and are free of other defects.

6.4.2.1.3 Defective air hoses will be tagged "Defective/Do Not Use" and returned to tool room for repair or disposal.
6.4.2.2 Always connect the air hose according to the manufacturer’s recommendations.

6.4.2.2.1 Only connect air hoses using the proper fitting,

6.4.2.2.2 **NEVER** adapt fittings or change fittings to accommodate air hose service.

6.4.2.2.3 **NEVER** connect an air hose directly to a pipe or pipe nipple.

6.4.2.3 When installing a coupling on an air hose, always use the proper fitting and manufacturer’s recommended “banding”/attaching method.

6.4.2.3.1 Chicago couplings may be used on air hoses as long as they have the couplings pinned or wired.

6.4.2.3.2 **NEVER** use a radiator hose style hose clamp.

6.4.2.4 Vertical runs of air hoses greater than 50 feet must have tie-off supports and “whip-checks” at each coupling regardless of air-hose size.

6.4.2.4.1 “Whip-checks” are required at each coupling of air hoses

6.4.2.5

6.4.2.5.1 Always pull the whip-check tight to secure it to the hose.

6.4.2.6 All air hose connections must be positively secured.

6.4.2.7 Compressed air shall not be used for cleaning purposes unless reduced to 30 psi or less and equipped with an effective chip guard and used with proper PPE. This does not apply to use of compressed air to clean concrete forms or for abrasive blasting. Compressed air shall not be used to clean clothing or people.

6.4.2.8 To minimize or eliminate potential tripping hazards and damage to equipment, hoses will be run overhead whenever possible.

6.4.2.8.1 The overhead clearance height shall be a minimum of 7-feet and,

6.4.2.8.2 Shall be positioned such that they cannot be struck by moving equipment.

6.4.2.9 If hose are placed on the ground, roadways, walkways, or hallways they will be:
6.4.2.9.1 Protected from damage by a “bridge” to protect them from equipment or vehicle damage.

6.4.2.9.2 Run in such a manner that they do NOT create a tripping hazard.

6.4.2.9.3 Run along the same side of hallways when possible.

6.4.2.9.4 Kept off stairs, ramps and ladders.

6.4.2.10 Do not allow an air hose to be damaged by a sharp surface.

6.5 Pneumatically Driven Fastening Tools

6.5.1 Pneumatically-driven nailers, staplers, and other similar tools equipped with automatic fastener feed, operating at greater than 100 psi pressure at the tool must have a safety device at the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.

Refer to Haselden; 6.6 Powder-Actuated Tools below for additional requirements.

6.6 Powder Actuated Tools

6.6.1 Employee Training and Qualification

6.6.1.1 Employees assigned to use powder-actuated fastening tools will:

6.6.1.1.1 Be thoroughly trained in the operation, selection, use, and maintenance of the tool, fasteners and Loads specific to the make and model they will be using.

6.6.1.1.2 Carry authorization showing they have successfully completed a training course which is specific to the model of tool they are operating.

6.6.2 Safe Usage of Powder Actuated Fastening Tool, Loads and Fasteners

6.6.2.1 Due to the potential hazard associated with the use of powder-actuated fastening tools, general work permits will be required to ensure safe guards are in place. In addition to the acceptable and unacceptable practices listed in this section, powder-actuated fastening tool and Loads will never be left unattended.

6.6.2.1.1 Powder-actuated fastening tools will be:

6.6.2.1.1.1 Inspected for proper working order each day,

6.6.2.1.1.2 Equipped with the correct shield, guard, or attachments recommended by the manufacturer. Defective/damaged tools will
be removed from service, tagged with a “Defective – Do Not Use” tag and returned to the tool room,

6.6.2.1.3 Checked to ensure that they are not loaded as soon as they are removed from the carrying case,

6.6.2.1.4 Loaded at the work site where they are being used,

6.6.2.1.5 Held at a right angle to the surface when firing.

6.6.2.2 Powder-actuated fastening tools will NEVER be:

6.6.2.2.1 Pointed at anyone, whether loaded or unloaded,

6.6.2.2.2 Used to drive fasteners into surface-hardened steel, cast iron, glazed brick, hollow tile, cinder block, marble, granite, live rock, or similar extra-hard, brittle, or fragile materials,

6.6.2.2.3 Loaded until just prior to the intended firing; when loading a powder-actuated fastening tool, it will be pointed away from the operator and other persons.

6.6.2.2.4 Loaded when not in use and while it is being carried to and from the work area,

6.6.2.2.5 Operated without the muzzle hard against the fixing surface,

6.6.2.2.6 Used to drive into material easily penetrated unless such materials are backed by a substance that will prevent the fastener from passing completely through.

NOTE: The area on the other side of such material must be barricaded and posted with warning signs.

6.6.2.3 Fastener and Loads:

6.6.2.3.1 Only fasteners and load specifically manufactured for the powder-actuated fastening tools will be used.

6.6.2.3.2 The correct load will be used for the fastener and material involved.

NOTE: The wrong size Load can cause a misfire, over penetration, spall/chipping, fracture of the surface or a ricochet.
6.6.2.3.3 A “test fire” using the weakest Load must be used for the first shot.

6.6.2.3.4 Fasteners will be installed:

6.6.2.3.4.1 At least 4 inches from the edge of masonry (concrete/brickwork),

6.6.2.3.4.2 0.5 inch from the edge of steel,

6.6.2.3.4.3 2 inches or more from weld joints.

6.6.2.3.5 Fasteners will NOT be:

6.6.2.3.5.1 Fired into corner bricks or mortar joints,

6.6.2.3.5.2 Driven into a spalled or chipped area or into any existing hole in the surface. Additional shots must be at least two inches away from any previous hole.

6.6.2.4 The area around where a powder-actuated fastening tool is being used must be posted with warning signs “Powder-Actuated Fastening Tool in Use” alerting others of the hazard.

6.6.2.5 The employee using the equipment and any persons in the immediate area will wear safety glasses with side shields, full-face shield, and hearing protection.

6.6.2.6 In the event of a misfire, the powder-actuated fastening too will be re-triggered without moving it from the surface.

6.6.2.6.1 If it fails again, the tool must be held firmly in the firing position for at least 30 seconds.

6.6.2.6.2 The manufacturer’s instructions must be followed to remove an unfired or misfired Load.

6.6.2.7 Unused, fired, and misfired Loads will not be left loose at the work site, in the tool carrying case, or in the operator’s pocket; they must be stored in a locked container and disposed of in accordance with the manufacturer’s instructions.

6.6.3 Storage, Maintenance and Repairs

6.6.3.1 Equipment Storage:

6.6.3.1.1 Powder-actuated fastening tool and Loads will be stored in a safe and secured area:

6.6.3.1.1.1 Storage location will be fire proof, cool, dry, and capable of being locked.
6.6.3.1.1.2 Only authorized personnel will be allowed access to the storage of Powder-actuated fastening tools and loads.

6.6.3.1.1.3 Powder-actuated fastening tool will be stored in their carrying cases.

6.6.3.1.1.4 Loads of different power levels will be kept in separate containers.

6.6.3.1.1.5 Containers will be a color-coded box that identifies the power level.

6.6.3.1.1.6 Loads and powder-actuated fastening tool will be stored separately.

6.6.3.1.1.7 Loads will not be stored in the powder actuated fastening tool carrying case.

6.6.4 Equipment Maintenance and Repair:

6.6.4.1 Only trained and authorized personnel will maintain and repair powder-actuated fastening tools.

6.6.4.1.1 Powder-actuated fastening tools will be dismantled according to the manufacturer’s instruction at least once every week to check for defects and excessive wear before cleaning and oiling.

6.6.4.1.2 Only the manufacturer’s authorized spare parts will be used for repairs or replacement.

6.6.4.1.3 Loads will not be allowed in the repair and maintenance area.

6.6.4.1.4 Test firing of repaired powder-actuated fastening tools will be performed in a safe location away from work and storage areas.

6.7 Fuel Powered Tools

6.7.1 During refueling of fuel-powered tools, the following is required:

6.7.1.1 The equipment will be shut down and allowed to cool before fueling.

6.7.1.2 The equipment will remain shut down while refueling.

6.7.1.3 Contact shall be maintained between the fuel container spout and the fuel tank while fueling to prevent buildup of static charge.

6.7.1.4 Smoking is prohibited within 50 feet of the refueling.
6.7.1.5 Hot work activities (grinding, torch burning, welding, etc.) within 50 feet will be stopped and,

6.7.1.6 A minimum of a 20 lb. “ABC” class fire extinguisher is required.

6.8 Hand Tools

6.8.1 Hand tools will:

6.8.1.1 Be used only for the purpose for which they were intended; do not use wrenches as hammers, screwdrivers as chisels, files as pry bars, etc.

6.8.1.2 Be carried in tool pouches, tool boxes or other type containers designed for carrying tools; employees will NOT carry tools in their pockets.

6.8.2 Impact tools such as;

6.8.2.1 Chisels, drift pins, and hammer wrenches, with mushroomed striking surfaces will be removed from service until the mushroomed surfaces can be dressed.

6.8.2.2 Chisels, punches, etc., will be used with a tool holder or hand guard to prevent striking a hand with a hammer.

6.8.3 Files and rasps require handles.

6.8.4 Wooden handles of tools such as hammers, picks, rakes and shovels will NOT be taped or covered in such a way as to hide damage or defects. Cracked or damaged wooden handles will be replaced immediately.

6.9 Operating Safety

6.9.1 Work pieces being cut, drilled, or shaped with tools will:

6.9.1.1 Be held with appropriate clamps, vices, etc.

6.9.1.2 NOT be held by hand while grinding, drilling, cutting, etc.

7.0 Attachment

7.1 Waiver and Indemnity
WAIVER AND INDEMNITY

Our company, ___________________________ is being allowed to operate or use the undersigned, Haselden, equipment such as tools, scaffold, ladders, cranes, forklifts, etc., the undersigned, through its authorized representative, hereby agrees to the following:

1. Assume complete responsibility for the equipment/components inspections, operations or use of, per the manufacturer’s specifications. Abide by all applicable Federal OSHA regulatory standards, Haselden safety policies and comply with all State / Federal laws while utilizing/operating or being in charge of Haselden Tools ___________________________.

2. Our company shall report any unsafe acts or conditions, equipment defects or damage to the equipment or property during the use of, or resulting from the utilization of said listed equipment.

3. Our company by using this equipment shall guarantee that our operators/employees possess the required and necessary skills, licenses, certifications, competent or qualified operator status for said operator and that they are drug and alcohol free.

4. To indemnify and hold harmless Haselden Construction, LLC. against all claims, damages and losses (including without limitation legal fees and disbursements) for injury to persons or damage to property arising out of or resulting from the undersigned’s use of Haselden Construction, LLC., equipment.

Date: ___________________________________________________________

Company Representatives Name: (Please Print):_________________________

Address: _________________________________________________________

Signature: _________________________________________________________

Authorized Representative
1.0 Purpose

1.1 To address the types of signs, signals, and barricades that must be used to protect Haselden Construction employees from traffic hazards when the scope of work creates a situation where employees will be blocking off streets or performing flagging duties.

2.0 Scope

2.1 This program applies to all Haselden Construction employees and subcontractors who will be working around public roadways.

2.2 The primary function of temporary traffic control is to provide for the safe and efficient movement of vehicles, bicyclists, and pedestrians through or around temporary traffic control zones while reasonably protecting workers and equipment.

3.0 Definitions

3.1 Traffic Control Planning - Suspended normal function of a roadway, where temporary traffic control planning is necessary to provide for public movement of vehicles, bicycles, and pedestrian traffic as well as transit operations, access to property and utilities while protecting workers and equipment.

4.0 Reference Documents

4.1 OSHA 29 CFR 1926, Safety Standards for Signs, Signals, and Barricades

4.2 MUTCD 2009, Manual on Uniform Traffic Control Devices

4.3 Flaggers Training Manual, Colorado Department of Transportation, August 1994

5.0 Responsibilities

5.1 Health and Safety Department

5.1.1 Train employees on the hazards related to traffic control as required.
5.1.2 Provide Flagger training certifications for sites requiring a job site traffic control plan

5.1.3 Review all traffic control plans as required.

5.2 Employee Responsibility

5.2.1 All site employees are expected to follow the traffic safety program, and comply with any site specific traffic control plans on a job site.

5.3 Flaggers

5.3.1 All flaggers will be properly trained and have a current certification card with them during flagging operations.

5.3.2 Flaggers will wear appropriate personal protective equipment, including, but not limited to: hard hat, safety glasses, work boots and a minimum of an ANSI type II reflective vest.

5.4 Superintendent

5.4.1 Review and ensure the proper implementation of this program on their projects or in those areas they are supervising

5.4.2 Enforce disciplinary action for employees who violate this program.

6.0 Implementation

6.1 Hand-signaling devices:

6.1.1 The STOP/SLOW paddles should be the primary hand-signaling device. Flags should be used in emergency situation only.

6.1.2 The STOP/SLOW paddle must have an octagonal shape on a rigid handle.

6.1.3 The STOP/SLOW paddle must be at least 18 inches wide with letters at least six (6) inches high.

6.1.4 The background of the STOP must be red with white letters and border.

6.1.5 The background of the SLOW face must be orange with black letters and border.

6.1.6 If used at night, the STOP/SLOW paddles must be reflectorized or lighted.

6.1.7 Flags, used only for emergencies, must be a minimum of twenty-four (24) inches square, red and securely fastened to a staff that is thirty-six (36) inches in length.
6.2 **Flagger Stations:**

6.2.1 Flagger stations must be located far enough ahead of the work area so that approaching traffic will have sufficient distance to stop before entering a work area.

6.2.2 Flagger stations need to be highly visible to traffic and should be illuminated at night, avoid curves, hills, high vegetation, shaded areas etc.

6.2.3 Flaggers should stand in a safe spot, usually on the shoulder of the road. Never stand in the path of on-coming traffic.

6.2.4 Have an emergency escape path available.

6.2.5 Advanced warning signs as outlined in the MUTCD should precede Flagger stations. The Flagger symbol or word signs shall be used in advanced flagging operations.

6.2.6 Flagger Ahead signs must be removed, covered or turned away from traffic when flagging operations are complete or are no longer occurring.

6.3 **Training:**

6.3.1 All employees on a job site where a specific traffic control plan is required will review the plan.

6.3.2 All employees responsible for flagging operations shall be trained and have a current Flagger certification card on them at all times while flagging.

6.4 **Incident Reporting:**

6.4.1 All incidents related to work zone traffic will be reported immediately to Haselden Project Manager and the Safety Department. Work zone incidents are most frequent where disruption is the greatest. Most occur while in or approaching lane closures, and nearly half are rear-end collisions. Nearly 40% of injured workers are on foot, and half of them were struck by their own equipment and vehicles.

6.5 **Site Specific Traffic Control Plan:**

6.5.1 When developing a job specific traffic control plan, all Local, City, and State regulations will be followed.

6.5.2 Three specific objectives will be followed when developing a plan:

6.5.2.1 Provide a high level of safety for the traveling public and workers
6.5.2.2 Minimize inconvenience and adverse impacts on the traveling public and the community where work is being done.

6.5.2.3 Allow for the timely completion of a quality project.

6.5.3 Basic principles to follow:

6.5.3.1 Work zone traffic control must be based on the legal authority of the agency having jurisdiction over the roadway where the work takes place.

6.5.3.2 Remove all traffic control devices no longer needed at the end of the day or when they are no longer needed.

6.5.3.3 Perform routine inspections of work zones, as they may change abruptly and unexpectedly.

6.5.3.4 Make sure all signs, markings and route guidance are clear, visible and as simple as possible.

6.5.3.5 The safest project is one that can be traveled with minimum delay and inconvenience.

6.5.3.6 Proper and timely planning must be done.

7.0 Attachments:

7.1 N/A
1.0 Purpose

1.1 This procedure provides guidelines that explain how to recognize and prevent occupational injuries/illnesses that may occur from working in extreme hot or cold environments.

2.0 Scope

2.1 This procedure applies to all Haselden projects and its subcontracted work.

2.2 Although this procedure provides guidelines to protect employees from exposures to extreme temperatures, Haselden onsite management will assess all work being performed during extreme weather to determine whether work stoppage is necessary. Factors that will be taken into consideration include:

   2.2.1 Task being performed.

   2.2.2 Location of the task being performed (inside or outside).

   2.2.3 Ambient temperatures and projected weather forecast.

   2.2.4 Heat indexes or wind chill factors.

   2.2.5 Availability and effectiveness of the engineering controls, administrative controls, safe work practices and personnel protective equipment.

2.3 Employees shall be trained in recognizing symptoms of heat related illnesses and cold stress, their prevention and treatment.

3.0 Definitions

3.1 **Acclimatization**: Physiological adjustment to environmental change.

3.2 **Cold Stress**: Physiological reaction that occurs when body loses heat faster than it can produce it. Cold stress situations include pain in the extremities, shivering, and hypothermia.

3.3 **Convective Heat**: Heat transfer through circulation of air. Convective heat also represents the amount of heat energy transferred between the skin and air.

3.4 **Dehydration**: The process of depletion of bodily fluids.
3.5 **Heat Stress:** A physiological reaction that occurs when the body is accumulating heat faster than it can be dissipated. Heat stress situations include heat rash, heat cramps, heat exhaustion, and heat stroke.

3.6 **Hypothermia:** When the body can no longer maintain core temperature by constricting blood vessels, it shivers to increase heat production. Maximum severe shivering develops when the body temperature has fallen to 35°C (95°F).

3.7 **Metabolic Heat:** Heat produced by the body from the oxidation of food.

3.8 **Wind Chill:** The combined effect of air temperature and air movement.

4.0 **Reference Documents**

4.1 OSHA Emergency Preparedness – Safety and Health Guide (Heat and Cold Stress)

4.2 OSHA Publication – The Cold Stress Equation

4.3 CDC – Extreme Cold

4.4 CDC – Winter Weather Stay Safe and Healthy

4.5 OSHA Fact Sheet – Protecting Workers in Cold Environments

4.6 OSHA Fact Sheet – Protection Workers from the Effects of Heat

4.7 OSHA Technical Manual – Heat Stress

4.8 OSHA Publication # 3154 - Protect Yourself Heat Stress

4.9 OSHA Fact Sheet – Protecting Workers in Hot Environments

4.10 NIOSH Safety and Health Topic - Cold Stress

4.11 eLCOSH – Cold Stress

4.12 HASELDEN – Emergency Preparedness and Response Plan

5.0 **Responsibilities**

5.1 **Site Superintendent(s):**

5.1.1 To manage and enforce the procedures and policies of this program as it pertains to Haselden and subcontracted work.

5.1.2 Ensure employees are trained in recognizing symptoms of heat related illnesses and cold stress, their prevention and treatment.

6.0 **Implementation**

6.1 **Heat Stress**
6.1.1 Heat stress is due primarily to sustained exertion in a warm or hot environment. The following factors may contribute to an individual's susceptibility to heat stress:

6.1.1.1 Personal physical fitness,
6.1.1.2 Degree of acclimatization,
6.1.1.3 Rate at which water and salt that are lost through perspiration are replenished,
6.1.1.4 Recent alcohol intake,
6.1.1.5 Caffeine and sugar consumption,
6.1.1.6 Dehydration,
6.1.1.7 Obesity,
6.1.1.8 Medications such as diuretics, sedatives, tranquilizers, and some heart and blood medicines.

6.1.2 The potential for heat stress is greatest when working for long periods near heat sources, or when personnel are required to wear protective clothing for extended periods. During hot weather, the potential for heat stress is present in any un-airconditioned work location where temperatures exceed 85º F.

6.1.3 Personnel should wear clothing with adequate air and vapor permeability.

6.1.3.1 When workers are required to wear clothing that does not have adequate air and vapor permeability, such as acid suits, heat stress increases and additional precautions are required.

6.1.3.2 Vest that can be cooled with ice or circulation water may be used for personnel cooling purposes when excessive heat conditions are present.

6.1.4 Convective heat gain, which occurs when air temperature exceeds skin temperature, can be controlled by the type and amount of clothing worn. Clothing affects the exchange of heat between the body and the environment.

6.1.5 Radiant heat gain, which occurs when the temperature of surrounding solid objects exceeds skin temperature, can be reduced by the following means:

6.1.5.1 Placing shields or barriers that are radiant-reflective or heat-absorbent between the source of radiant heat and personnel.

6.1.5.2 Isolating the source of radiant heat.

6.1.5.3 Modifying an operation or task.
6.1.6 Evaporative heat loss, which occurs when the body cools by losing excess heat through evaporation, can be improved by the following:

6.1.6.1 Increasing air movement around personnel by fan or some other means of ventilation.

6.1.6.2 Reducing the water-vapor content (humidity) of the air by air conditioning.

6.1.6.3 Selecting permeable clothing, such as cotton, linen or untreated canvas.

6.1.7 When engineering controls are inadequate or not feasible, work modifications and hygienic practices must be introduced to control exposures to both environmental and metabolic heat. The following examples of prevention and work practices have proven effective for reducing heat stress:

6.1.7.1 Limiting the time personnel spend in a hot environment through implementation of a work/rest cycle program.

6.1.7.2 Reducing metabolic demands of the job through procedures such as mechanization, use of special tools, or increasing the number of personnel per task.

6.1.7.3 Raising heat tolerance through either a heat acclimatization program or an improvement in physical fitness.

6.1.7.3.1 Implement acclimatization activities is essential for new workers, workers who have been out sick or on vacation, and all workers during a heat wave.

6.1.7.3.2 Work at a steady moderate rate that can be sustained in the heat.

6.1.7.3.3 Much of this adjustment to heat, under normal circumstances, takes about 5 to 7 days, during which time the body will undergo a series of changes that will make continued exposure to heat more endurable.

6.1.7.3.4 Observe workers and recognize immediately the symptoms of possible heat-related illness.

6.1.7.4 Training supervisors and personnel to prevent heat stress conditions, to recognize the early symptoms of heat illnesses, and administer first-aid procedures.

6.1.7.5 Providing adequate amounts of cool (50 to 59 degrees F), potable water near work areas and encouraging all personnel to drink one cup of water every 15 to 20 minutes.

6.1.7.6 Providing shade and frequent rest breaks.
6.1.8 Employers will ensure that all un-acclimatized personnel who work in areas where there is a likelihood of heat injury or illness participate in a continuing safety and health education program that keeps them informed on the following topics:

6.1.8.1 Heat stress hazards.

6.1.8.2 Signs and symptoms of heat injury and illness.

6.1.8.3 Heat-stress prevention and first-aid procedures.

6.1.8.4 Work practices and control procedures that protect the health and safety of workers, including reporting the development of heat-stress symptoms.

6.1.8.5 The effects of therapeutic drugs, over-the-counter medications, and alcohol, which may reduce heat tolerance and increase the risk of heat injury or illness.

6.1.8.6 Proper use of protective clothing and equipment.

6.1.8.7 Heat Index

<table>
<thead>
<tr>
<th>Heat Index</th>
<th>Risk Level</th>
<th>Protective Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 91°F</td>
<td>Lower</td>
<td>Basic heat safety and planning</td>
</tr>
<tr>
<td>91°F to 103°F</td>
<td>Moderate</td>
<td>Implement precautions and heighten awareness</td>
</tr>
<tr>
<td>103°F to 115°F</td>
<td>High</td>
<td>Additional precautions to protect workers</td>
</tr>
<tr>
<td>Greater than 115°F</td>
<td>Very High to Extreme</td>
<td>Triggers even more aggressive protective measures</td>
</tr>
</tbody>
</table>

6.2 Recognizing and Preventing Heat Related Illnesses

6.2.1 Employees shall be trained in recognizing and preventing heat related illnesses.

6.2.2 The following table shows heat related illnesses, their symptoms, and response.
6.2.3 Heat related illness can progress from the less serious to heat stroke, which can result in death. With heat stroke, the body stops sweating and is unable to cool itself. The victim becomes unresponsive, and attempts at first aid will be ineffective.

6.2.4 Employees showing signs of heat stress should be moved to an air-conditioned vehicle or building if possible and encouraged to rest and drink water and electrolytes.

6.2.5 Caffeine, sugar, and Gatorade™ cause increased urination and make increased water consumption necessary to replace liquids.

6.2.6 Treat less serious heat related illnesses to prevent their progression to Heat Stroke. If Heat Stroke symptoms are identified, **IMMEDIATELY CALL 911.**

<table>
<thead>
<tr>
<th>Illness</th>
<th>Signs</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat rash</td>
<td>- Red blisters-like eruptions/bumps</td>
<td>✓ Rest in a cool place</td>
</tr>
<tr>
<td></td>
<td>- Itching (prickly sensation)</td>
<td>✓ Allow the skin to dry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Monitor for infection</td>
</tr>
<tr>
<td>Heat cramps</td>
<td>- Painful spasms usually in legs or abdomen</td>
<td>✓ Apply firm pressure and massage cramped area</td>
</tr>
<tr>
<td></td>
<td>- Grasping the affected area</td>
<td>✓ Rest in a cool place</td>
</tr>
<tr>
<td></td>
<td>- Possibly heavy sweating</td>
<td>✓ Drink water or an electrolyte drink</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Seek medical attention if cramping is severe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ and does not go away</td>
</tr>
<tr>
<td>Heat exhaustion</td>
<td>- Headaches, lightheadedness</td>
<td>✓ Move the person to a cool, shaded area</td>
</tr>
<tr>
<td></td>
<td>- Weakness</td>
<td>✓ Loosen and remove heavy clothing</td>
</tr>
<tr>
<td></td>
<td>- Mood changes, irritability or confusion</td>
<td>✓ Have the person drink some cool water</td>
</tr>
<tr>
<td></td>
<td>- Feeling sick to your stomach and/or vomiting</td>
<td>✓ Get something cool on them</td>
</tr>
<tr>
<td></td>
<td>- Extreme sweating</td>
<td>✓ If the person does not feel better in a few minutes call for emergency help</td>
</tr>
<tr>
<td></td>
<td>- Decreased and dark-colored urine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Pale clammy skin</td>
<td></td>
</tr>
<tr>
<td>Heat stroke</td>
<td>- Dry, pale skin</td>
<td>Call for emergency help (ambulance or 911)</td>
</tr>
<tr>
<td></td>
<td>- Sweating may be present</td>
<td>✓ Move the person to a cool, shaded area. Don’t leave the person alone.</td>
</tr>
<tr>
<td></td>
<td>- Nausea and vomiting</td>
<td>✓ Remove heavy and outer clothing</td>
</tr>
<tr>
<td></td>
<td>- Hot, red skin (looks like sunburn)</td>
<td>✓ Have the person drink small amounts of cool water</td>
</tr>
<tr>
<td></td>
<td>- Mood changes, irritability, confusion, and not making any sense</td>
<td>✓ Get something cool on them</td>
</tr>
<tr>
<td></td>
<td>- Collapse (will not respond)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fever (104°F or higher)</td>
<td></td>
</tr>
</tbody>
</table>

6.3 **Hypothermia/Cold Stress/Frostbite**

6.3.1 The best protection against cold-related health risks is to be aware of and be prepared; therefore, employers will ensure their employees recognize the signs and symptoms of cold stress/hypothermia.
6.3.2 Employees will be trained in how to prevent hypothermia, cold stress, and frostbite, which includes the following:

6.3.2.1 Proper clothing and equipment,
6.3.2.2 Safe work practices,
6.3.2.3 Guidelines for eating and drinking,
6.3.2.4 Risk factors that increase the health effects of cold exposure,
6.3.2.5 How to recognize signs and symptoms of frostbite,
6.3.2.6 How to recognize signs and symptoms of hypothermia,
6.3.2.7 Appropriate first aid treatment, including re-warming procedures.

6.3.3 Understanding the wind-chill factor, especially for employees exposed to uncontrolled environments such as:

6.3.3.1 Working on roofs,
6.3.3.2 Operating open cab equipment or equipment with unheated cabs,
6.3.3.3 Hanging or working on structural steel,
6.3.3.4 Working in open, elevated areas, and
6.3.3.5 Working in refrigerated spaces.

6.3.4 Ensuring employees:

6.3.4.1 Are medically fit and are acclimated to the cold.
6.3.4.2 Understand the importance of high-caloric foods when working in cold environments, including the importance of proper dietary needs based on work conditions.
6.3.4.3 Select and wear the appropriate protective clothing suited for the cold, the job, and the level of physical activity, such as:

6.3.4.3.1 Wearing several layers of clothing rather than one thick layer (air captured between layers acts as an insulator).
6.3.4.3.2 Wearing synthetic fabrics such as polypropylene next to the skin because these fabrics wick away sweat; clothing should not restrict flexibility.

6.3.5 Wearing waterproof, water repellent and wind-resistant clothing if conditions are wet.
NOTE: If employees’ clothing gets wet at air temperatures of 35.6°F or less, provide time for a change of clothing and monitor for hypothermia.

6.3.5.1 Encouraging or requiring employees to wear head wear to prevent heat loss from the head and to protect ears; balaclavas or other face covers may also be necessary under certain conditions. Sweatshirt hoods and other garments that interfere with peripheral vision and proper hardhat fit are not permitted.

6.3.5.2 Footwear should be large enough to allow wearing either one thick or two thin pairs of socks; wearing too many socks can tighten fit and harm rather than help.

6.3.5.3 Workers who get hot while working should open their jackets but keep hats and gloves on.

6.3.6 Employers may provide climate controlled shelters near the locations where employees are working and that they encourage employees to use these shelters at regular intervals depending on wind-chill factor. It is recommended that employees:

6.3.6.1 Performing work continuously in the cold allow rest and warm-up breaks.

6.3.6.2 Showing signs of shivering, frostbite, fatigue, drowsiness, irritability, or euphoria return to the shelter immediately.

6.3.6.3 Entering heated shelter remove their outer layer of clothing and loosen other clothing to let sweat evaporate, in some cases, a change of clothing may be necessary.

6.3.6.4 Practice the buddy system whenever employees are working in isolated areas.

6.3.7 Haselden Construction Manager will use Attachment 8.1, Wind-Chill Dangers chart to determine and modify work schedules/conditions based on the information provided in the chart.

6.4 Recognizing and Treating Cold Stress

6.4.1 Employees shall be trained in recognizing and preventing cold stress.

6.4.2 The following page shows Frostbite and Hypothermia, major cold related illnesses, their symptoms, and treatment.

6.4.3 Hypothermia can result in death. If hypothermia is identified, IMMEDIATELY CALL 911.
COLD STRESS
LOW TEMPERATURE + WIND SPEED + WETNESS = INJURIES & ILLNESS

Working in a cold environment – like cold weather, cold water or an indoor freezer – can lead to serious injuries, illnesses and death.

FROSTBITE
DESCRIPTION: Freezing in the deep layers of the skin, usually on fingers, hands, feet, toes, ears and nose.

SYMPTOMS: Skin turns pale, hard and numb

WHAT TO DO:
• Move to a warm, dry area.
• Remove wet or tight clothing that may restrict flow of blood.
• Don’t rub affected area – or you may cause damage.
• Gently put affected area in a warm 41°C (105°F) water bath and keep it there for 23 to 40 minutes.
• Don’t pour water directly on skin.
• When normal feeling, movement and skin color return, dry and wrap affected area.
• Get medical help as soon as possible.

HYPOTHERMIA
DESCRIPTION: When you become so cold that your body loses heat faster than it can produce it. Hypothermia is a killer. And it’s sneaky, it often sets in so slowly that the victim dies without ever recognizing the danger.

SYMPTOMS:
• Mild Hypothermia
  • Shivering
  • Grogginess, muddled thinking and abnormal behavior
  • Breathing normal

• Moderate Hypothermia
  • Violent shivering or shivering has stopped
  • Inability to think and pay attention
  • Slurred speech
  • Poor body co-ordination
  • Slow, weak pulse
  • Slow, shallow breathing

• Severe Hypothermia
  • Shivering stopped
  • Unconsciousness
  • Dilated pupils
  • Weak, irregular or non-existent pulse
  • Little or no breathing

IF TREATING VICTIM:
• Handle gently. Rough handling can cause heart beat irregularities and death.
• Don’t give victim hot fluids unless he’s fully alert and shows no sign of confusion.
• Remove wet clothing and cover with warm, dry clothes/blankets.
• Let victim shiver even if he’s shivering violently.
• Don’t massage victim’s hands, arms, legs, feet or body.
• Don’t put victim in warm bath or shower.
• Check victim’s airway, breathing and circulation; give CPR if necessary.
• If victim’s breathing is slow and shallow, give him oxygen.
• Keep treating victim even if he appears lifeless. Victim may still be alive and you may still be able to save his life.

FIRST AID

If victim shows signs or reports symptoms of frostbite or hypothermia, get him out of the cold immediately – seek medical help from a doctor or trained first aid attendant.

WHAT TO DO:
• Wear warm head covering.
• Wear layered clothing.
  • First layer: Underwear, socks, glove liners and other clothing that lets skin breathe by allowing sweat to escape.
  • Second layer: Insulating clothing that absorbs sweat but doesn’t let heat out. Wool is ideal.
  • Protect your hands and feet.
  • Carry emergency supplies.
  • Drink lots of non-alcoholic fluids.
  • Pace yourself during vigorous activity.
  • Try to heat the work area.

7.0 Attachments: