

Ringland-Johnson

CONSTRUCTION MANAGER

Safety, Environmental & Accident Prevention Program



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CORPORATE SAFETY STATEMENT

Ringland-Johnson, Inc. believes that safety in all of our company operations is not just a corporate goal, it is a requirement. Each year Ringland-Johnson strives to achieve zero workplace injuries and zero safety citations. To this end, we have formulated this written safety program to govern all of the operations of Ringland-Johnson, Inc.

A safety program is beneficial for all employees; therefore, we believe that commitment must come from employees at all levels. At RJC all workers are encouraged and have the authority to stop work at any time if a safety concern arises. It is a condition of employment with Ringland-Johnson, Inc., that all employees adhere faithfully to the requirements of this program, as well as the safety rules, instructions and procedures issued in conjunction with it. Failure to do so will result in the appropriate disciplinary action. Ringland-Johnson, Inc. is concerned for the health and safety of all its employees and has established this safety program that assigns duties to employees of all levels within our company. Employees have a right to a safe workplace, but in return they have a duty to keep it that way.

It is a condition of all subcontracts and purchase orders issued by Ringland-Johnson, Inc. that this program, the safety rules, instructions and procedures issued in conjunction with it, as well as, all applicable state, federal and local codes and regulations are adhered to. Failure to comply is a breach of contract terms.

All visitors to any construction site, including but not limited to suppliers, owner's representatives, agents of the architect or engineer, regulatory authorities and insurance company representatives shall be required to follow all safety rules and regulations in effect during their visit.

The Safety Director, Safety Manager, General Superintendent, Job Superintendents and Foremen have the full support of management in enforcing the provisions of this program as it relates to all aspects of safety.

Sincerely,

RINGLAND-JOHNSON, INC.

Brent B. Johnson
President/CEO



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SAFETY & ENVIRONMENTAL PROGRAM

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CORPORATE SAFETY POLICIES AND PROCEDURES

In order to establish and organize good safety policies and procedures, this General Safety Policies and Procedures Written Plan summarizes information regarding safety policies and procedures at this Company.

General Company Safety Philosophy Statement

This general company safety philosophy has been developed to reflect and communicate the proactive safety attitude maintained at this Company.

This Company will comply with appropriate safety and security laws and regulations such as those established by:

1. The Occupational Safety and Health Act (OSHA),
2. The Environmental Protection Agency (EPA),
3. The Department Of Transportation (DOT), and
4. All other applicable federal, state and local safety and health regulations.

Written Safety Plans

Because we care about our employees and strive to provide a safe work place, we have put into place a number of written safety plans. These written plans provide guidance and direction for the safety issues they cover.

Disciplinary Policy

All safety rules, procedures and plans in effect at this Company are intended to be followed. Upon violation of any company safety rule, the violating employee will be penalized. The list of disciplinary actions includes: (Rules are subject to the restrictions imposed by any Union contractual obligations).

1. **FIRST OFFENSE** – Any individual who violates the safety rules of this Company will receive a **verbal warning**.
2. **SECOND OFFENSE** – Any individual who violates the safety rules of this Company, for a second time, will receive a **written warning**. This warning will be placed in the corporate disciplinary file.
3. **THIRD OFFENSE** – Any individual who violates the safety rules of this Company for a third time **may be subject to termination**.



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CORPORATE SAFETY POLICIES AND PROCEDURES

The severity of the penalty will be in direct correlation to the severity of the safety violation. Injury or damage is not a necessary constituent to warrant disciplinary action. It is the violation of the rule itself and not necessarily its end result that is the subject of the discipline.

It is this Company's position that based upon the severity of the safety violation, an employee may be dismissed immediately, and we will forego the above stated procedure. This procedure will be adhered to when the employee acts carelessly, or is recklessly disregarding the safety rules of this Company. This will also apply if the employee endangers anyone else's safety on the jobsite.

SAFETY AND HEALTH PROGRAM

Purpose

We are committed to the safety and health of our employees, and know that our strength as a company is only as good as the strength of each individual. We will strive to place safety and health above all else, and will involve all workers at every level in establishing, implementing, and evaluating our efforts. This written Safety and Health Program is intended to reduce the severity of job-related illnesses and injuries at this Company. It is our intent to comply with the requirements of 29 CFR 1926.20 and 29 CFR 1926.21, which require employers to maintain programs as necessary to keep employees from working in hazardous or dangerous conditions.

Employee Participation and Information

All employees are trained and expected to understand our safety and health reporting system, so that reports are received in a timely and systematic manner. See the Safety and Health Reporting section of this program.

Safety and Health Reporting

Our safety and health reporting system ensures that our Company receives and promptly responds to the report, evaluates the report to determine whether an injury or illness has occurred, and takes corrective action as OSHA standards require and where appropriate. When determining whether an employee who has experienced signs or symptoms of an injury or illness actually has an injury or illness, we have the employee evaluated, at no cost to the employee.



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CORPORATE SAFETY POLICIES AND PROCEDURES

All employee reports are taken seriously by the Company. If an injury, illness, fatality, incident, or hazard has occurred, we will identify, assess, and control the hazard(s).

Hazard Prevention and Control

Job hazard controls are engineering, administrative, and/or work practice controls used to eliminate or materially reduce hazards. While engineering controls, where feasible, are the preferred method, administrative and work practice controls also may be important in addressing hazards. Personal protective equipment (PPE) may also be used to supplement engineering, work practice, and administrative controls, but may only be used alone where other controls are not feasible. Where PPE is used, our Company provides it at no cost to employees.

Ultimately, we implement job hazard controls to bring our jobsite(s) into compliance with the General Duty Clause and OSHA standards. Generally this means coming to one of three ends: (1) the hazards are materially reduced using the incremental abatement process; (2) the hazards are reduced to the extent feasible, and then periodically reviewed to see whether additional controls are feasible and, if so, we implement them promptly; or (3) the hazards are eliminated.

Our Company follows these steps for each hazard control:

1. We ask employees in the problem job for recommendations about eliminating or materially reducing the hazards.
2. We identify, assess, set deadlines, and implement feasible controls (interim and/or permanent) to eliminate or materially reduce the hazards identified. This includes prioritizing which hazards are controlled first.

The assessment of controls is our effort, with input from employees, to select controls that are reasonably anticipated to eliminate or materially reduce the hazards. Often there are several controls that would be reasonably likely to reduce a hazard. We assess which of the possible controls should be tried.

Because it is not always clear whether a selected control will achieve the intended reduction in exposure to the hazard(s), we often need to test and modify controls before implementing them throughout the job.



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CORPORATE SAFETY POLICIES AND PROCEDURES

Preventative Maintenance

Timely maintenance of facilities and equipment is an effective preventive measure.

Training

Under no circumstances may an employee work until he/she has successfully completed proper training. This includes all existing and new employees. However, if an employee has received training in certain required topics within the last three years; initial training in those specific topics is not required. Before we can meet the prior training exception, we must be able to demonstrate that the employee has retained sufficient knowledge to meet the requirements for initial training.

Multi-employer Work Situations

As a host employer, we are obligated to share certain hazard information with our contract employers. We are responsible for: (1) providing information about hazards, controls, safety and health rules, and emergency procedures to all employers at the workplace, and (2) ensuring that safety and health responsibilities are assigned as appropriate to contract employers.

Contract employers in turn must ensure that their employees are aware of the hazards associated with the contract employer's work and what the contract employer is doing to address them. Our contracts require the contractor to follow our jobsite safety and health rules.

Note: "Host employer" means an employer who controls conditions at a multi-employer worksite. "Contract employers" are those who perform work for our Company at our jobsite(s). A contract employer does not include an employer who provides incidental services that do not influence the workplace safety and health program, whose employees are only incidentally exposed to hazards at our jobsite(s) (e.g., food and drink services, delivery services, or other supply services).



GENERAL SAFETY RULES FOR ALL EMPLOYEES

The following General Safety Rules must be obeyed while working for this organization:

1. Every employee must learn the safe work practices as outlined by his or her supervisor and as included herein.
2. Report every injury including those of a minor nature to Foreman or Job Superintendent.
(See "Accident Reporting")
3. Promptly report all unsafe conditions to your immediate supervisor.
4. Where needed, a safety harness must be worn and secured.
(See "Fall Protection")
5. Practical jokes, horseplay, intoxication or drug use are prohibited and will result in immediate dismissal.
(See "Drug and Alcohol Policy")
6. OSHA approved hardhats, as furnished and issued by the Company, must be worn on the jobsite at all times.
(See "Personal Protective Equipment")
7. Cover goggles or shields must be worn when electric welding, burning with an oxygen/gas torch, chipping or grinding are being done.
 - A. When chipping or grinding, the Silica Exposure Prevention Program must be followed.
8. Sturdy, heavy duty work boots are required. Safety shoes are encouraged. Proper clothing and protection must also be worn. No loose clothes or dangling jewelry is allowed.
9. Defective hand tools, ladders, portable electrical tools or other equipment must not be used. Report all defective items to your supervisor immediately.
(See "Tools – Hand and Power")
10. All engines shall be shut off when refueling, cleaning, lubricating, repairing, etc.



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GENERAL SAFETY RULES FOR ALL EMPLOYEES

11. Only authorized and properly instructed employees shall operate machinery, equipment, tools or vehicles.
12. Only authorized personnel shall ride on any equipment and then only inside the cab.
13. No employee is to walk under a raised load, bucket, or boom at anytime.
14. When making manual lifts, use your leg muscles, not your back. Get someone to help you when heavy or awkward loads are to be handled.
15. Only approved type containers are to be used for handling flammable liquids. KNOW THE LOCATION OF FIRE EXTINGUISHERS.
16. Acetylene, oxygen and other gas cylinders must be stored and used in the upright position, secured by tying.
17. Electric power tools must be grounded with guards "in place".
(See "Electrical")
18. Only approved electrical extension cords may be used.
19. Unsafe tools, defective or frayed electrical cords, and unguarded machinery are strictly prohibited.
20. Do not use equipment beyond its rated capabilities.
21. Cranes, backhoes or other equipment with booms, must be operated with caution around power lines, and the proper distance maintained from these lines. (Minimum of 10 feet).
22. Watch your footing, particularly when carrying material.
23. Where an oiler is required, the operator must know his whereabouts at all times.
24. Scaffolds must comply with OSHA standards.



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GENERAL SAFETY RULES FOR ALL EMPLOYEES

25. Tools and other objects must not be left on scaffolds, ladders or any overhead working surface.
26. Straight (extension) ladders must be secured, and must extend a minimum of three feet above the landing. Safety feet are required on hard surfaces. Stepladders may never be used as a straight ladder.
27. Maintain good housekeeping, and keep areas as clean of construction debris and other related materials as possible.
28. Know and follow all jobsite safety rules. Participate in Company safety training.
29. Pre-planning of all tasks is to take place with SAFETY being given a top priority.

Every employee shall be held accountable for his or her safety and loss control performance. This accountability will be reflected in evaluating employees overall work performance.

These rules are for your safety and well-being on the job. These rules are not all-inclusive, but rather are an overview of some of the items found in our safety program. An understanding of our safety program is a requirement of employment. Your safety suggestions are encouraged and will be given full consideration.

I have read these rules, and agree to abide by them, along with any other safety rules, or procedures, that may be established. I also understand that the violation, and or disregard of our Company safety rules may subject me to dismissal.

Employee

Date



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ACCIDENT REPORTING AND INVESTIGATION PLAN

Purpose

This Accident Reporting & Investigation Plan prescribes methods and practices for reporting and investigating accidents at all work sites of this Company. This Accident Reporting & Investigation Plan provides a means to deal with job site accidents in a standardized way. In addition, it is the policy of the Company to comply with all workers' compensation laws and regulations.

Accident Reporting Procedures

1. A. **Employees** of this Company, and any **subcontractor's employees** that are injured on the job, are to report the injury to the Superintendent or Foreman as soon as possible after the incident/accident. **ALL ACCIDENTS AND INJURIES MUST BE REPORTED TO THE SUPERINTENDENT/FOREMAN BEFORE THE EMPLOYEE LEAVES THE JOBSITE AT THE END OF THE WORK SHIFT.** "Near Miss" accidents or incidents should be reported as well i.e., when an employee nearly has an accident but is able to avoid it. (This is used to assist in avoidance of the same accident scenario).

B. The morning after all accidents, a jobsite meeting **shall** be conducted with the Superintendent, and if applicable the subcontractor's Foreman, to discuss the accident. (What happened, why did it happen, how can this be prevented.)
2. The Superintendent/Foreman is to complete the Company Accident Report with the employee, any witnesses, and or other relevant people **at the time of injury.**
3. The Superintendent/Foreman is to immediately notify the Safety Director, and to deliver a copy of the written Accident Report to the Safety Director at **the end of the day, and no later then the following morning**, after the accident.
4. Any employee witnessing an accident at a job site is to call for emergency help or whatever assistance appears to be necessary. In addition, the employee is to immediately report the accident to his or her Superintendent/Foreman and take part in answering questions related to the Accident Report and Accident Investigation.



ACCIDENT REPORTING AND INVESTIGATION PLAN

Accident Investigation Procedures

Use the following list as guidelines for all of your accident investigations.

1. Conduct the accident investigation at the exact site of the injury as soon after the injury as safely possible. **(TAKE PICTURES OF ACCIDENT SCENE).**
2. Ask the employee involved in the accident and any witnesses, in separate interviews, to tell you in their own words exactly what happened. Do not interrupt or ask for more details at this time, just let the employee describe it in his or her own style. Have the employee write down what happened. If the employee does not speak English, let him/her write down the description in his/her native language.
3. Repeat the employee's version of the event back to him/her and allow him to make any corrections or additions.
4. After the employee has given his/her description of the event, ask appropriate questions that focus on causes.
5. When finished, remind the employee the investigation was to determine the cause and possible corrective action that can eliminate the cause(s) of the accident and provide a safer work site for all workers.
6. The Accident Investigation Report is to be used for:
 - Tracking and reporting injuries on a monthly basis.
 - Grouping injuries by type, cause, body part affected, time of day, and process involved.
 - Determining if any trends in injury occurrence exist and graph those trends if possible.
 - Identifying any equipment, materials, or environmental factors that seem to be commonly involved in injury incidents.
 - Discussing with the safety team and superiors the possible solutions to the problems identified.
 - Proceeding with improvements to reduce the likelihood of future injuries.



ACCIDENT REPORTING AND INVESTIGATION PLAN

Thorough accident investigations will help the Company determine why accidents occur, where they happen, and any trends that might be developing. Such identification is critical to preventing and controlling hazards and potential accidents at work sites.

Injury/Medical Issues

1. **If any accident, at the work site, or in a vehicle in the course of work, results in injury or illness requiring hospitalization of three or more employees or a FATALITY of one or more employee, this Company will report the incident within eight hours by phone or in person to the nearest OSHA office.**
2. If an injured person is taken to a doctor, a statement from the doctor should be attached to the Accident Report form.
3. Employees with work site injuries resulting in time off work are put in the Company's Return-to-Work Program (see that program's requirements) to facilitate their full recovery and resumption of original work.
4. Weekly compensation for work site injuries or illnesses requiring time off work, as indicated by law, applies after the third day of wage loss. (Sundays are not included in the waiting period, unless Sunday is a normal workday.)
5. If the disability continues for more than seven calendar days, workers' compensation goes back to day one.
6. On the day of injury, the Company will cover the time loss due to doctor and/or emergency room visits or inability to work, in accordance with Union standards.



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AERIAL WORK PLATFORMS

Purpose

An aerial lift is any vehicle-mounted device used to elevate personnel, including:

1. Extendable boom platforms,
2. Aerial ladders,
3. Articulating (jointed) boom platforms,
4. Vertical towers, and
5. Any combination of the above.

This program has been established to:

1. Reduce risk by ensuring the safe operation of aerial lifts
2. Ensure operators understand and comply with safety standards related to aerial lifts.

Training

It is the policy of this Company to permit only trained and authorized personnel to operate aerial lifts.

Training will be conducted by a competent trainer and will include classroom instruction and hands on training. Training records will be documented and maintained by the safety department.

Retraining is required if any of the following conditions occur:

1. An accident occurs during aerial lift use,
2. Improper use is observed,
3. Workplace hazards involving an aerial lift are discovered, or
4. A different type of lift is used.



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AERIAL WORK PLATFORMS

Pre-start Inspection

Prior to each work shift, operators will conduct a pre-start inspection to ensure safe operation of the aerial work platform. The pre-start inspection shall include a check of:

Vehicle components:

1. Fluid levels
2. Leaks of fluids
3. Wheels and tires
4. Battery and charger
5. Lower-level controls
6. Horn, gauges, lights and backup alarms
7. Steering and brakes

Lift components:

1. Operating and emergency controls
2. Personal protective devices
3. Hydraulic, air, pneumatic, fuel and electrical systems
4. Fiberglass and other insulating components
5. Missing or unreadable placards, warnings, or operational, instructional and control markings
6. Mechanical fasteners and locking pins
7. Cable and wiring harnesses
8. Outriggers, stabilizers and other structures



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AERIAL WORK PLATFORMS

9. Lose or missing parts
10. Guardrail systems

Work Zone Inspections

Operators will inspect the workplace to remove hazards before and during aerial lift use. The worksite will be inspected for hazards such as:

1. Overhead obstructions and high voltage hazards (Lifts must maintain a minimum of 10 feet from any overhead electrical hazards).
2. Slope(s), ditches, bumps, debris, drop-offs and floor obstructions.
3. Wind and weather conditions.
4. Other hazardous locations and atmospheres.
5. Inadequate support (The working surface that the lift is sitting on cannot support the weight of the machine, men, etc. for the operation).
6. Presence of unauthorized persons or other hazardous conditions.

Operation

Safe operation can be achieved by following proper operating procedures. When operating a lift, never exceed the capacity of the lift, which must include the worker(s), tools, and any materials.

Modifications

Modifications and additions that may affect the capacity or safe operation of an aerial/scissor lift are strictly prohibited without the manufacturer's written approval.

Fall Protection

Operators must ensure that the access gate(s) are closed while operating the lift. While operating the lift, always stand firmly on the floor and do not use the guardrail system as a means to gain additional working height.



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AERIAL WORK PLATFORMS

Personal fall arrest systems:

1. A full body harness is required while working out of a boom lift. It is recommended to use a self-retracting lifeline in the place of a lanyard.
2. Operators must tie off to the anchor point provided in the lift, not to an adjacent structure.
3. Personal fall arrest systems will be made available for use in scissor lifts if requested by a client/contractor.



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ASBESTOS AWARENESS PROGRAM

NOTE: All regulation references are to 29 CFR 1926.1101 unless otherwise stated.

Purpose

The purpose of this program is to inform employees and interested persons that this Company is complying with OSHA's asbestos standard, Title 29 Code of Federal Regulations 1926.1101 by ensuring that:

1. No employee is to be exposed to an airborne concentration of asbestos in excess of 0.1 f/cc (fibers per cubic centimeter of air) as an eight-hour time-weighted average (TWA).
2. No employee is to be exposed to an airborne concentration of asbestos in excess of 1.0 f/cc (excursion limit) as averaged over a sampling period of 30 minutes.

We conduct an initial exposure assessment of all demolition and remodel work performed by this Company, in regard to any "Presumed Asbestos Containing Materials" (PACM), that may be located on our jobsites. This assessment is performed during the pre-bid process, and during any pre-construction meetings, prior to any actual work being performed. We rely heavily upon statements and documentation given to us by owners, or other controlling parties, for whom work is being performed. If asbestos is present at any job site, we require the Owner to supply us with the proper owner notification records. These records shall include documentation regarding areas that contain asbestos, and shall include results of the most current testing that has been performed. The testing results shall include a summary of all areas that contain asbestos, including the percentage of asbestos containing materials present and a map of all areas, designating affected areas.

We do not self-perform any monitoring for asbestos containing materials. All testing and monitoring shall be performed by outside qualified contractors, to be hired by the owner or any other party we perform work for. We will not contract out any asbestos abatement activities. If asbestos abatement activities are to take place, the qualified asbestos abatement contractor shall, through the owner, report to us the work performed, method used, results of all tests, and shall comply with all governmental regulations regarding the abatement of asbestos containing materials. All asbestos removal operations must be conducted within regulated areas. These regulated areas shall comply with 29 1926.1101(e)(2) - (5).

We understand that the communication of asbestos hazards is vital to prevent overexposure and that we have specific duties under the asbestos rule to communicate



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ASBESTOS AWARENESS PROGRAM

those hazards through written notifications, signs, labels and employee information and training. On multi-employer worksites, we will: (1) inform other employers on the site of the nature of our work, (2) relay information of the existence of regulated areas (if any), and take correct measures, within our control, to ensure employees of other employers are not exposed to asbestos.

This program applies to all construction work where any of our employees or sub-contractors, may be occupationally exposed to asbestos. All work related to construction, alteration, or repair, including painting and decorating, is included.

Copies of this written program are available at our main office.

Initial Exposure Assessment

Whenever asbestos containing materials have been found to exist on a job site, notification to all employees will be made. We will notify employees in writing, personally, or by posting at a central location, the areas that are affected, (including a graphic representation of affected areas) and what percentage of asbestos is contained in these materials. We will also notify all employees of any monitoring results as soon as possible, following receipt of those results. Monitoring will always be performed by other qualified parties.

The initial exposure assessment will indicate if this job is likely to exceed the “Permissible Exposure Limit” (PEL). If this is the case, then the owner shall be directly responsible to properly abate the affected areas, and provide all testing and monitoring results to our Company before we can perform any work in those affected areas. It is the responsibility of the owner to properly post (with warning signs) any affected areas clearly and conspicuously.

Asbestos Exposure

All employees receive training that whenever they encounter any material that may contain asbestos related material; they are to immediately stop work. The expected material is not to be disturbed in any manner, and all associated trades are to be advised of the location of the possibly containing asbestos material. The area is to be clearly marked and labeled. The material will then be tested by a recognized and certified company to ascertain if there are any asbestos containing material. No work in that area is to continue until we receive written notification of the contents of the questionable material. If the material contains asbestos, a qualified and certified asbestos abatement contractor is to be contracted by the owner for removal of the asbestos containing material.



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ASBESTOS AWARENESS PROGRAM

Objective Data

Where we rely on objective data that demonstrates that products made from or containing asbestos or the activity involving such products or material are not capable of releasing fibers of asbestos in concentrations at or above the permissible exposure limit and/or excursion limit under the expected conditions of processing, use, or handling to satisfy the requirements of 29 CFR 1926.1101(f), we establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption. The record includes at least the following information:

1. The product qualifying for exemption.
2. The source of the objective data.
3. The testing protocol, results of testing, and/or analysis of the material for the release of asbestos.
4. A description of the operation exempted and how the data support the exemption.
5. Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

We maintain this record for the duration of this Company's reliance upon such objective data.

Training Records

All employee training records are maintained at our office, and may be reviewed upon request. In regards to this section of our safety program, training for asbestos awareness is only performed. We do not train employees or sub-contractors on abatement procedures. Our Company policy is to perform initial assessments of our jobsites to determine if asbestos is present. If asbestos is present we will not disturb existing asbestos. Our policy is to advise the owner or other controlling party, and to have them contract directly with a qualified testing contractor, and abate the hazard if so needed. If asbestos is present, and has not been disturbed, we will inform employees and other contractors on site (that are under our control) of the presence of asbestos. Such notification will be based upon assessments and testing performed by the owner and given to us. These records will be made available, and given to all affected parties.



ASBESTOS AWARENESS PROGRAM

Data to Rebut PACM (Presumed Asbestos Containing Material)

Where the owner and our Company have relied on data to demonstrate that PACM is not asbestos-containing, we maintain such data for as long as they are relied upon to rebut the presumption.

Records of Required Notifications

Where the owner has communicated and received information concerning the identification, location and quantity of "Asbestos Containing Material" (ACM) and PACM (Presumed Asbestos Containing Material), we ensure that written records of such notifications and their content are maintained by the owner, and a copy is given to us.

Demarcation

Any regulated area, where asbestos abatement procedures are to be conducted shall be demarcated in a manner that prohibits any of our employees, or sub-contractors (under our control) from entering the area, and protects persons outside the area from exposure to airborne asbestos. When critical barriers or negative pressure enclosures are used, they may demarcate the regulated area. Warning signs shall be posted, by the owner (or their qualified representative) in accordance with the requirements of 29 CFR 1926.1101(k)(7).

Access

Access to regulated areas is restricted to authorized persons only.

Prohibited Activities

We prohibit our employees and all sub-contractors (under our control) from entering a regulated area.

Communication of Hazards

The existence of any PACM (Presumed Asbestos Containing Materials) or ACM (Asbestos Containing Materials) shall be communicated to all employees and sub-contractors, as soon as possible, after they have been discovered.



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ASBESTOS ACKNOLEGEMENT FORM

DATE: _____

JOB NUMBER: _____

JOB SITE NAME: _____ LOCATION _____

EMPLOYEE INFORMATION:

PRINT	SIGNATURE	COMPANY NAME	DATE
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____



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BACK SAFETY PLAN

Purpose

This Company requires the procedures in this plan to be followed to provide a safe working environment at all times. This Company has implemented these procedures on safe lifting practices to ensure that employees are trained to protect themselves from the hazards of improper lifting practices.

It is the responsibility of management at this Company to ensure that these policies are implemented. It is the responsibility of management to ensure that these policies and the information necessary to carry out these policies are communicated to employees. It is the responsibility of all employees to follow safe work practices and comply with these rules regarding work practices.

The effectiveness of the back safety plan depends upon the active support and involvement of all affected employees.

Safe Lifting Techniques

The following points outline good lifting practices and procedures, and safe lifting techniques that may be taught to employees to minimize their risk of back injury and pain. These practices are written with the lifter in mind. Lifting remains an important function despite the level of mechanization found on job sites today, so attention must be directed toward safe lifting practices.

The basics of good lifting are:

1. Size up the load before you lift. Test by lifting one of the corners or pushing. If it's heavy or feels too clumsy, get a mechanical aid or help from another worker. Generally, workers should not lift more than 50 pounds without assistance. **When in doubt, don't lift alone!**
2. **BEND AT THE KNEES.** You will note this is capitalized. There's a reason for that, it is the single most important aspect of lifting.
3. When performing the lift:
 - Place your feet close to the object and center yourself over the load.
 - Get a good hand hold.
 - Lift straight up, smoothly and let your legs do the work, not your back!
 - Avoid overreaching or stretching to pick up or set down a load.
4. Do not twist or turn your body once you have made the lift.



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5. Make sure beforehand, you have a clear path to carry the load.
6. Set the load down properly.
7. Always push, not pull, the object when possible.
8. Change the lifting situation if possible to minimize a lifting hazard:
 - If it's a long load, get some help.
 - Split the load into several smaller ones, when you can, to achieve manageable lifting weight.
 - Avoiding lifts from below the knees or above the shoulders by using mechanical aids, positioning yourself so that the object to move is within an acceptable lifting range (between the knees and shoulders), and/or getting help from your co-workers.

Alternative Materials-Handling Techniques

Alternative materials-handling techniques for carrying or moving loads are to be used whenever possible to minimize lifting and bending requirements. These alternative materials-handling techniques include use of:

- **Hoists,**
- **Forklifts,**
- **Dollies,**
- **Carts, and**
- **Other mechanical devices or construction equipment available and appropriate for the lift in question.**

Other Safe Work Techniques

Work issues other than lifting are related to back pain or injury. You can avoid them or improve work techniques related to them.

1. **Catching Objects & Working Low** - When catching falling or tossed objects, your feet should be firmly planted, with your back straight and your knees slightly bent. Your legs should absorb the impact, not your back. If you're working on something low, bend your knees. Keep your back as straight as possible. Bending from the waist can lead to back pain. If you have to use your back, keep your knees bent and your back flat. In both of these situations, frequent rest breaks are necessary to keep from getting back fatigue.



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2. **Extended Sitting/Standing** - Certain jobs require long hours of standing or sitting. These conditions can create back troubles. Get up and stretch frequently if you are required to sit for long periods. If standing, ease the strain on your lower back by changing foot positions often, placing one foot on a rail or ledge. However, keep your weight evenly balanced when standing. Don't lean to one side.
3. **Other Materials Handling Tasks** - Tasks such as lowering, pushing, pulling and carrying can create hazards to the back as well. If the task feels uncomfortable or unnatural, utilize the alternative materials-handling techniques listed in this Back Safety Plan.
4. **Housekeeping** - Poor housekeeping: slippery floors or ground, crowded work conditions, tools or other hazards on the work surface can create slip, trip or fall hazards that can result in back injury.
5. **Poor Posture at Work** - Be aware of proper posture when sitting, standing, or reclining. When sitting, your knees should be slightly higher than your hips and your shoulders and upper back should be straight. When lying down or sleeping, keep your knees slightly bent. Sleeping on your stomach can lead to morning backache.
6. **Poor Lighting** - Poor lighting in the work area can lead to poor work practices that result in injuries of many types. Make sure lighting is adequate for the task at hand, replace burnt out bulbs and point out hazardous areas to your immediate supervisor.

Other Back Safety Issues

Factors unrelated to work that can affect back safety include such things as physical condition and posture, athletic or home-improvement activity, and tension and stress.

1. **Posture** - Whether you are standing, sitting or reclining, posture affects the amount of strain put on your back. The wrong posture increases strain on the back muscles and may bend the spine into positions that will cause trouble. When standing correctly, the spine has a natural "S" curve. The shoulders are back and the "S" curve is directly over the pelvis. Good sitting posture should put your knees slightly higher than your hips. Your hips should be to the rear of the chair with your lower back not overly arched. Also, your shoulders and upper back are not rounded. Reclining posture is important, too. Sleep on your side



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with knees bent or sleep on your back. Sleeping on your stomach, especially on a sagging mattress with your head on a thick pillow, puts too much strain on the spine. Result: morning backache.

2. **Poor Physical Condition** - Your physical condition can lead to back pain. If you are overweight, extra strain on your spine can result. An estimate is that every extra pound up front puts 10 pounds of strain on your back. When you are out of shape, the chances for chronic back pain are greater. Infrequent exercise is a major factor, too. A sudden strain on generally unused back muscles leads to trouble, particularly when there is a sudden twisting or turning of the back. Proper diet and exercise is the sensible way to help avoid back problems.
3. **Stress** - Stress is another factor that may lead to back pain. Tied in with your general physical condition, stress created from work or play can cause muscle spasms that affect the spinal nerve network. Although stress is part of everyone's life, and a certain amount of stress is normal, excessive stress can cause backaches. The solution is a balanced life style with time to relax.
4. **Repetitive Trauma** – People often think back injuries result from lifting heavy or awkward objects. Many back injuries, however, do not come from a single lift, but occur from relatively minor strains over time. Back injuries, as with other “Cumulative Trauma Disorders” (CTD), may arise from repeated injuries. (However, repetitive, low-grade strains usually do not cause CTDs.) As the worker repeats a particular irritating movement, the minor injuries begin to accumulate and weaken affected muscles or ligaments. Eventually, a more serious injury may occur. Thus, a specific weight lifted may actually have little to do with any single injury. Remember to use mechanical aids when appropriate along with good lifting techniques, whenever you do any lifting. You can lift safely when performed with caution.



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BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN (ECP)

Purpose

The purpose of this ECP is to:

1. Eliminate or minimize employee occupational exposure to blood or certain other body fluids
2. Comply with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030.

This plan is available to all employees on the jobsite and can be readily accessed in the Superintendent's safety manual.

Exposure Determination

OSHA requires employers to perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment (i.e. employees are considered to be exposed even if they wear personal protective equipment). This exposure determination is required to list all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency. At this Company, the following job classifications are in this category:

No one in this Company is expected to incur a bloodborne pathogen exposure, since we do not handle nor anticipate the handling of any infectious material, sharps, etc. The only exposure to bloodborne pathogens may occur from a serious on-site injury where an employee responds to an accident to provide first aid. Our Company does not designate any individuals as first aid responders. Our employees have available to them adequate first aid kits, which include bloodborne pathogen kits. (All employees are instructed in the use of such kits.) All serious injuries require the response of emergency personnel, such as paramedics. Any clean-up resulting from a serious accident will be contracted to a qualified party.

In addition, OSHA requires a listing of job classifications in which some employees may have occupational exposure. Since not all the employees in these categories would be expected to incur exposure to blood or other potentially infectious materials, tasks or procedures that would cause these employees to have occupational exposure are also required to be listed in order to clearly understand which employees in these categories are considered to have occupational exposure. The job classifications and associated tasks for these categories are as follows:



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BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN (ECP)

Job Classification

Task/Procedure

No Company employees have an occupational exposure

Implementation Schedule and Methodology

OSHA also requires that this plan include a schedule and method of implementation for the various requirements of the standard. The following complies with this requirement:

Compliance Methods

Universal precautions will be observed at this Company in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual.

Engineering and work practice controls will be utilized to eliminate or minimize exposure to employees at this Company. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be utilized. At this Company the following engineering controls will be utilized:

Employees will use the provided bloodborne pathogen kits if they choose to respond to any serious injuries.

Hand washing facilities are also available to the employees who incur exposure to blood or other potentially infectious materials. OSHA requires that these facilities be readily accessible after incurring exposure.

Hand washing facilities are not normally available to employees, since our employees work on construction sites. Since these facilities are not normally available, we provide antiseptic cleaner for the washing of hands, along with clean paper towels and antiseptic towelettes. Employees are also instructed to wash hands with soap and running water as soon as feasible.

Supervisors shall ensure that after the removal of personal protective gloves, employees shall wash hands and any other potentially contaminated skin area immediately or as soon as feasible with soap and water.

Supervisors shall ensure that if employees incur exposure to their skin or mucous membranes then those areas shall be washed or flushed with water as soon as feasible following contact.



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BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN (ECP)

Needles

We do not anticipate any exposure to needles or sharps, such as encountered in medical facilities.

Containers for REUSABLE Sharps

We do not handle or use any biohazard cabinets or disposal devices.

Work Area Restrictions

In work areas where there is a reasonable likelihood of exposure to blood or other potentially infectious materials, employees are not to eat, drink, apply cosmetics or lip balm, smoke, or handle contact lenses. Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, or on counter tops or bench tops where blood or other potentially infectious materials are present.

Contaminated Equipment

Our Safety Director is responsible for ensuring that equipment which has become contaminated with blood or other potentially infectious materials shall be decontaminated as necessary unless the decontamination of the equipment is not feasible.

“Personal Protective Equipment” (PPE) Provision

All personal protective equipment used at this Company will be provided without cost to employees. (Bloodborne Pathogen Kits). Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach.

PPE Use

Our Safety Director shall ensure that appropriate PPE in the appropriate sizes is readily accessible at the work site or is issued **without cost** to employees. Hypoallergenic gloves, glove liners, powerless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

PPE Cleaning, Laundering and Disposal

All personal protective equipment will be disposed of by the employer at no cost to the employees. All repairs and replacements will be made by the employer at no cost to employees.



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BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN (ECP)

All garments which are penetrated by blood shall be removed immediately or as soon as feasible. All PPE will be removed prior to leaving the work area.

When PPE is removed, it shall be placed in an appropriately designated area or container for disposal.

Gloves

Gloves shall be worn where it is reasonably anticipated that employees will have hand contact with blood, other potentially infectious materials, nonintact skin and mucous membranes.

Disposable gloves used at this Company are not to be washed or decontaminated for re-use and are to be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured or when their ability to function as a barrier is compromised.

Eye and Face Protection

Masks in combination with eye protection devices, such as goggles or glasses with solid side shield or chin length face shields, are not required to be worn.

All contaminated work surfaces will be decontaminated after an injury, and immediately or as soon as feasible after any spill of blood or other potentially infectious materials, as well as, the end of the work shift if the surface may have become contaminated since the last cleaning. An outside service will be utilized for all decontamination processes.

Hepatitis B Vaccine and Post Exposure Evaluation and Follow-up

Our Company not designate any employees as first aid responders. If a first aid trained employee has an exposure while rendering aid, the Hepatitis B Vaccine will be made available at no cost to the employee. Medical records will be stored in personnel files for the duration of employment plus 30 years.

Training

Training on bloodborne pathogens and exposure prevention will be provided to all employees on an annual basis. This training will be documented and stored in the safety files for a minimum of 3 years.



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COMPANY VEHICLE POLICY

Operation of a Company vehicle is both a privilege and a responsibility, not a right. Drivers are responsible for operating all Company vehicles according to state, federal and Ringland-Johnson Construction rules and policies. Violation of these rules will result in the removal of driving privileges.

Motor Vehicle Record (MVR) Policy

It is a Ringland-Johnson Construction policy and requirement for employment, that every employee position with driving duties requires a motor vehicle record (MVR) meeting the grading requirement stated below. This MVR policy applies both to drivers of Company owned vehicles, as well as employees using personal vehicles in the course of Company business.

MVR's will be examined prior to the start of employment, and at least annually thereafter. Any job offer made to an employee-candidate for a position with driving duties, shall be contingent upon a MVR meeting the required standards; continued employment in a position with driving duties also requires an MVR meeting the standards outline below.

The standards for MVR's are as follows:

1. All operators must have a valid driver's license for at least the last three years.
2. No new driver will be hired with a "borderline" or "poor" MVR. MVRs will be graded based on the table below, as minimum requirements.
3. Driving records must remain "acceptable" or "clear", as graded on the table below, for continued employment in positions with driving duties.

Any exceptions to these guidelines must be referred to management for approval, in writing.



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COMPANY VEHICLE POLICY

Motor Vehicle Record Grading Criteria (last 3 years):

Number of Violations	Number of At-Fault Accidents			
	0	1	2	3
0	Clear	Acceptable	Borderline	Poor
1	Acceptable	Acceptable	Borderline	Poor
2	Acceptable	Borderline	Poor	Poor
3	Borderline	Poor	Poor	Poor
4	Poor	Poor	Poor	Poor
Any Major Violation	Poor	Poor	Poor	Poor

Minor Violations	Major Violations
Any moving violation other than a major except:	
<ul style="list-style-type: none"> • Motor vehicle equipment, load or size requirement • Improper/failure to display license plates (if they exist) • Failure to sign or display registration • Failure to have driver's license in possession (If valid license exists). 	<ul style="list-style-type: none"> • Driving under the influence of alcohol/drugs • Failure to stop/report an accident • Reckless driving/speeding contest • Driving while impaired • Making a false accident report • Homicide, manslaughter or assault arising out of the use of a vehicle • Driving while license is suspended/revoked • Careless driving • Attempting to elude a police officer

All newly hired employees, who will be or may be, driving Company owned vehicles, will have their MVRs checked. The following form will be completed on all new employees that fall under this category.



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COMPANY VEHICLE POLICY

Driver Evaluation Form

Name: _____

Date: _____

Instructions

1. Review the employee's MVR, and assign appropriate points for each violation in the score box.
2. If prospective driver has a driver evaluation score of 6 or greater, serious consideration should be given to his/her qualifications prior to hiring.

A. Number of Accidents (within the last 3 years)	Points	Score
• None	0	_____
• 1	1	_____
• 2	2	_____
• 3	5	_____
B. Moving Violations (within the last 3 years)		
• Hit and run, leaving the scene of an accident	6 each	_____
• Driving under the influence of alcohol or drugs	6 each	_____
• Any felony, homicide or manslaughter involving use of a motor vehicle	6 each	_____
• License suspension or revocation	6 each	_____
• Implied consent refusal (refusal to take blood alcohol test)	6 each	_____
• Racing or excessive speeds (20 mph over limits)	4 each	_____
• Reckless, negligent or careless driving	4 each	_____
• Speeding	2 each	_____
C. Moving Violations (within the last 3 years)		
• None	0	_____
• 1 or 2	1 each	_____
• 3 and over	1 each	_____

Grading

Best	0-1
Average	2-3
Questionable	4-5
Poor	Over 5

Completed by: _____



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COMPANY VEHICLE POLICY

SCOPE OF USE

- **Assigned Driver**

No person other than the employee assigned to a specific vehicle shall operate that vehicle, unless that person is an employee of Ringland-Johnson Construction, is listed on the approved driver's list, and has the permission from the person assigned that vehicle, or from a supervisor.

- **Personal Use of Company Vehicles**

Company owned trucks are to be used for Company business only. Personal use of a Company truck is prohibited. Company trucks may be driven home, and used for transportation to and from work only if approved by management. Personal use of Company owned private passenger type vehicles will be permitted as deemed necessary by the company, and only with management approval.

- **Use of Personal Vehicles for Company Business**

Any one that uses a personal vehicle for Company business must be on the approved driver list. A certificate of insurance, from the individual owner, should be on file with the Company, prior to using that vehicle. The certificate of insurance will be reviewed by management to determine if it is acceptable.

DRIVER QUALIFICATION

- Must be at least 21 years old.
- Must have a valid driver's license for the vehicle to be operated.
- Must be on the Company approved drivers list.
- To drive a Commercial Motor Vehicle, per DOT definition, must be at least 21 years old, and have valid CDL.

MAINTENANCE AND UPKEEP

Drivers are responsible for keeping their vehicles well maintained. Any faulty equipment or damage must be reported to management. (See section on vehicle inspections). All drivers are responsible to make sure that the equipment is safe to operate on the road. All unsafe conditions must be reported immediately, and the vehicle removed from service, until repairs have been made.



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COMPANY VEHICLE POLICY

VEHICLE INSPECTIONS

The driver of each vehicle is responsible for completing a written vehicle inspection checklist at the end of every week. Any faulty equipment must be noted on the inspection report. (Inspection form attached).

VEHICLE SAFETY RULES

All drivers are expected to comply with the following rules, in regards to vehicle safety.

1. **Drivers are required to inspect their vehicles at the beginning of each day. Any defects in the Company vehicle must be reported, and corrected before that vehicle can be placed in service.**
2. **A written vehicle inspection is required at the beginning of every shift for vehicles with 1 ton capacity or greater, all other vehicles shall be visually inspected minimally weekly.**
3. **The driver is responsible for the safety of all passengers, and the stability of all materials being hauled.**
4. **Seat belts are required to be used at all times while the vehicle is in motion.**
5. **Employees are required to obey all state, federal and Company laws, rules, and policies. The employee is responsible for any traffic violations.**
6. **Shut off the motor when refueling.**
7. **All portable gas containers must be ANSI approved. All portable gas containers must be removed from the vehicle before refueling, with an adequate ground established.**
8. **Do not backup, unless you can clearly see all obstacles to the rear of the vehicle. Do not rely solely on mirrors. Dismount the vehicle and check the area yourself; use a spotter if necessary.**
9. **Mount or dismount only when the vehicle is completely stopped.**
10. **Passengers, not employed by the Company, are not permitted.**
11. **All accidents must be reported as soon as possible and at least within 24 hours.**



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COMPANY VEHICLE POLICY

VEHICLE MAINTENANCE CHECKLIST

Date: _____

Vehicle #: _____

Driver's Name: _____

	<u>OK</u>	<u>NEEDS MAINTENANCE</u>
Headlights	_____	_____
Tail Lights	_____	_____
Brake Lights	_____	_____
Turn Signals	_____	_____
Emergency Flashers	_____	_____
Horn	_____	_____
Fluid Levels	_____	_____
Mirrors	_____	_____
Insurance Documents	_____	_____
Body Damage	_____	_____
Steering	_____	_____
Brake System	_____	_____
Fire Extinguisher	_____	_____
Emergency Reflector Kit	_____	_____
License Plates Current	_____	_____

TIRES

Pressure	_____	_____
Condition	_____	_____
Wheel Lugs Secure	_____	_____
Spare Tire	_____	_____

WINDSHIELD

Glass	_____	_____
Wipers	_____	_____

Driver Signature: _____



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CONFINED SPACE ENTRY PROGRAM

Purpose

The purpose of this written program is to ensure safe entry methods are utilized prior to and during all work activities in confined spaces. This program is designed to prevent personal injuries and illnesses that may be prevalent in confined spaces and for compliance with OSHA Standards on worker safety and health. This program covers all employees and contractors with whom this Company works. **The elements contained in this program must be followed in all situations where entry into a hazardous confined space is necessary.**

Workplace Analysis and Hazard Evaluation of Permit Spaces

This Company performs a work site analysis to determine if any spaces fit the criteria of a hazardous confined space, and thus need a permit. Based on a walk through analysis of each work site at the initiation of work there, all confined spaces are identified and their hazards evaluated and identified.

Pre-Entry Evaluation

To ensure the safety and health of our employees, before allowing authorized workers to enter a permit space, we evaluate conditions in that space to determine if the conditions are safe for entry. **Any employee, who enters the space, or that employee's authorized representative, has the opportunity to observe the pre-entry and any subsequent testing.** The authorized entrant or that employee's representative also has the option of requesting a reevaluation of the space if they feel that the evaluation was not adequate.

Our Company follows the procedures to evaluate each permit space before entry according to 1910.146(c)(5)(ii)(C). This includes testing the internal atmosphere with a calibrated direct-reading instrument for oxygen content, flammable gases and vapors and potential toxic air contaminants. We also periodically test the atmosphere of the space to ensure that the continuous ventilation is preventing the accumulation of a hazardous atmosphere.

Certification

According to 1910.146(c)(5)(ii)(H), our Company verifies that the space is safe for entry and that the pre-entry measures required by 1910.146(c)(5)(ii) have been taken, through a written certification that contains the date, location of the space, and signature of the person providing the certification. At our Company, our Safety Director is responsible for verifying these procedures. The certification is made before entry and is available to each employee entering the space. According to 1910.146(c)(5)(iii), our Company documents the basis for determining that all hazards in a permit space have



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CONFINED SPACE ENTRY PROGRAM

been eliminated, through a certification that contains the date, location of the space, and signature of the person making the determination.

Reclassification of Non-Permit Confined Spaces

It is the responsibility of the Foreman and Superintendents, to notify the Safety Director when there are changes in the use, or configuration, of any identified non-permit confined spaces that might increase the hazards to entrants, or when new equipment or construction takes place that creates new confined spaces. The Safety Director shall re-evaluate the existing space or evaluate the new space and, if necessary, classify it as a permit required confined space.

Measures to Prevent Unauthorized Entry

This Company, or the affected sub-contractor will post danger signs warning of the existence, location, and danger posed by the permit spaces identified to prevent unauthorized entry into those spaces. The signs are posted at the entrances to the spaces and read:

DANGER
Permit Required Confined Space
DO NOT ENTER

Safe Confined Space Entry Operations - Means, Procedures, and Practices

Acceptable entry conditions are specified as those in which:

1. All hazards in a permit-required confined space that can be eliminated have been eliminated via engineering controls, ventilation, or some other means.
2. Authorized entrants are protected by use of PPE against any remaining or potential hazards.
3. All procedures of this program are being followed.

The permit space shall be appropriately isolated from other work activity by means of signs and barriers as necessary.

The permit space shall be purged, made inert, flushed, or ventilated with appropriate equipment as necessary to eliminate or control atmospheric hazards.



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CONFINED SPACE ENTRY PROGRAM

Pedestrian, vehicle, or other barriers shall be provided as necessary to protect entrants from external hazards and

Conditions in the permit space are acceptable for entry throughout the duration of an authorized entry as long as all monitoring, entry procedures, and attending as specified in this program are being followed.

Equipment Provision

This Company will provide at no cost to its employees all appropriate, adequate, and necessary "Personal Protective Equipment" (PPE), testing and monitoring equipment, ventilation equipment, communications equipment, lighting equipment, barriers and shields, ladders or other entrance/exit equipment, rescue and emergency equipment and any other equipment necessary for safe entry into and rescue from a permit required confined space. Supervisors of the permit required confined space entry procedures will be responsible for ensuring use of the appropriate equipment by all entrants to the confined space.

Permit Space Condition Evaluation

Conditions in the permit space shall be tested to determine if acceptable entry conditions exist before entry is authorized to begin. If isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions shall be continuously monitored in the areas where authorized entrants are working.

The permit space shall be tested or monitored as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.

When testing for atmospheric hazards, the Company shall test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.

Permit Space Attendant Procedures

This Company or the sub-contractor will provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations. Any attendant will only be allowed to monitor one confined space at a time. No attendant will be allowed to monitor multiple permit spaces. This person shall have no other responsibilities.



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CONFINED SPACE ENTRY PROGRAM

Active Role Designations, Duties and Training

This Company or the sub-contractor will provide training so that all designated employees acquire the understanding, knowledge and skills necessary for the safe performance of the duties assigned to them in permit-required confined space entry procedures. Training will be documented and placed in the company safety files. This training is provided as needed, and at the following times:

- Before assignment to duties.
- When changes in permit-required space hazards occur on which the employee has not been trained.
- Before changing the employee's duty assignment.
- When this employer has reason to believe that the employee has deviated from a trained-upon procedure or that their knowledge is inadequate.

The following categories of employees are designated employees, whose duties are listed below:

- **Authorized Entrants.**
- **Attendants.**
- **Entry Supervisors.**
- **Rescue and Emergency Service Employees.**

Authorized Entrants

Authorized entrants of a permit-required confined space are trained to the extent that they know the hazards they may face, are able to recognize signs or symptoms of exposure and understand the consequences of exposure to hazards. Entrants know how to use any needed equipment, communicate with attendants as necessary, alert attendants to the warning signs or the existence of a hazardous condition and exit as quickly as possible whenever ordered or alerted (by alarm, warning sign, or prohibited condition) to do so.

Attendants

Attendants to a confined space know the hazards of confined spaces, are aware of behavioral effects of potential exposures, maintain continuous count and identification of authorized entrants, remain outside the space until relieved and communicate with entrants as necessary to monitor entrant status. Attendants also monitor activities inside and outside the permit space and order exit if required, summon rescuers if necessary, prevent unauthorized entry into the confined space, and perform non-entry rescues if required. They do not perform other duties that interfere with their primary duty to monitor and protect the safety of authorized entrants at the time of the permit-required confined space entry.



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CONFINED SPACE ENTRY PROGRAM

Entry Supervisors

Entry supervisors with responsibility for issuing confined space permits know the hazards of confined spaces, verify that all tests have been conducted and all procedures and equipment are in place before endorsing a permit, terminate entry if necessary, cancel permits, verify that rescue services are available and the means for summoning them are operable. Supervisors are to remove unauthorized individuals who enter the confined space. They also determine, at least when shifts and entry supervisors change, that acceptable conditions, as specified in the permit, continue.

Rescue and Emergency Service Employees

Rescue services are provided by on-site employees or an off-site service, if on-site assistance is unavailable. Rescue services are available for spaces with IDLH conditions. The on-site teams are properly equipped and receive the same training as authorized entrants, plus training in the use of personal protective and rescue equipment and in first aid, including CPR. They practice simulated rescues at least once every 12 months. Outside rescue services are made aware of the hazards of the confined spaces, have access to comparable permit spaces to develop rescue plans, and practice rescues. Hospitals or treatment facilities are provided with any "Safety Data Sheets" (SDS) or other information in a permit space hazard exposure situation that may aid in treatment of rescued employees.

Rescue and Emergency Services Procedures

Rescue and emergency services shall be contacted by phone or walkie-talkie and shall be within three minutes response time for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees and for preventing unauthorized personnel from attempting a rescue.

Entry Permit System

Before entry is authorized, the Employer shall document the completion of required pre-entry measures by preparing an entry permit.

Before entry begins, the Entry Supervisor identified on the permit shall sign the entry permit to authorize entry.

The completed permit is made available at the time of entry to all authorized entrants, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.

The duration of the permit does not exceed the time required to complete the assigned task or job identified on the permit.



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CONFINED SPACE ENTRY PROGRAM

The entry supervisor shall terminate entry and cancel the entry permit when:

1. The entry operations covered by the entry permit have been completed; or
2. A condition that is not allowed under the entry permit arises in or near the permit space.

This Employer shall retain each canceled entry permit for at least 1 year to facilitate the required annual review of the Permit-required Confined Space Program. Any problems encountered during an entry operation shall be noted on the pertinent permit so that appropriate revisions to the Permit Space Program can be made.

An entry permit that authorizes entry to a permit space must include:

1. Identification of the space.
2. Purpose of the entry.
3. Date and duration of the permit.
4. A list of authorized entrants, by name.
5. Names of current attendants and the Entry Supervisor.
6. A list of hazards in the permit space.
7. A list of measures to isolate the permit space and eliminate or control the hazards.
8. The acceptable entry conditions.
9. The results of tests initiated by the person(s) performing the tests.
10. The rescue and emergency services available and the means to summon them.
11. Communication procedures for attendants and entrants.
12. Any required equipment (such as respirators, communication, alarms, etc.).
13. Any other necessary information.
14. Any additional permits (such as for hot work).



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CONFINED SPACE ENTRY PROGRAM

Multiple Employer Entry Procedures

If more than one employer's employees will be entering a permit-required confined space at the same time, then a pre-entrance meeting will be held with the Entry Supervisors of all involved employers as well as with this Company. In this meeting, all entry procedures and issues will be agreed upon and written into the permit.

Post-operations Procedures

The Company will close off a permit space and cancel the permit after entry operations have been completed.

Review Procedures

This Company will review entry operations when we have reason to believe that the measures taken under the permit space program may not protect employees and we will revise the program to correct deficiencies found to exist before subsequent entries are authorized.

Examples of circumstances requiring Company review of the permit space program are: any unauthorized entry of a permit space, the detection of a permit space hazard not covered by the permit, the detection of a condition prohibited by the permit, the occurrence of an injury or near-miss during entry, a change in the use or configuration of a permit space, and employee complaints about the effectiveness of the program.

This Company will review the permit space program, using the retained canceled permits from the past 12 months within 1 year after each entry and revise the program as necessary, to ensure that employees participating in entry operations are protected from permit space hazards. This Company will perform a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review will be performed.



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CONTRACTOR & SUBCONTRACTOR SAFETY POLICY

Purpose

This document is provided to ensure all safety plans, policies and procedures are communicated to all participating contractors on projects for which we serve as the Head Contractor. It also provides an avenue for subcontractors to communicate their safety plans, policies and procedures to us as the Head Contractor. This program aims to prevent personal injuries and illnesses.

Explanation of Responsibilities

General Contractor Responsibilities

This Company has specific safety responsibilities when hiring subcontractors. Company responsibilities when hiring subcontractors include the following listed steps. This Company will endeavor to:

1. Take steps to ascertain that subcontractors provide protection for their employees who perform work on or near a potentially hazardous process.
2. Obtain and evaluate information regarding the sub-contract employer's safety performance and programs.
3. Inform the subcontractor of known potential fire, explosion or toxic release hazards related to the subcontractor's work and the process.
4. Explain the applicable provisions of the emergency action plan to the subcontractor and require that the subcontractor disperse that information to all workers who will work at this site.
5. Develop and implement safe work practice procedures to control subcontractor employee entry into hazardous work areas in which they are not performing work.
6. Periodically evaluate the subcontractor's fulfillment of his or her responsibilities under this policy.
7. To our best ability, hire and use only subcontractors who meet Contractor Selection Criteria as listed in the next section of this policy.



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CONTRACTOR & SUBCONTRACTOR SAFETY POLICY

Subcontractor Responsibilities

Considering that subcontractors often perform very specialized and potentially hazardous tasks, their work must be controlled. Subcontractor responsibilities when accepting contracts with this Company include the following listed steps. The subcontract employer will: **(This applies to the subcontractor's employees and any other tier contractor that is utilized by the subcontractor).**

1. **Assure** that all subcontractor employees are trained in the work practices necessary to safely perform their respective job;
2. Instruct their employees, any other tier of contractor, under their supervision, in the potential fire, explosion, or toxic release hazards related to his or her job and the process;
3. Assure that all subcontractor employees know the applicable provisions of the emergency action plan;
4. Document all subcontractor employees training;
5. Inform all subcontractor employees of, and then enforce safety rules of the work site.
6. **Require that all subcontractors abide by the same rules to which the contractor is bound by this section.**
7. Abide by the work site smoking rules. Smoking is prohibited in certain areas of some work sites. Therefore, permission must be requested before subcontractor's employees are allowed to smoke in any area.

Guidelines for Subcontractor Selection

The following listed steps are the standard procedures for evaluating and choosing subcontractors who will work on any work site for which this Company is head contractor. These guidelines will be adhered to by the best of our abilities.

1. Obtain and evaluate information regarding a subcontractor employer's safety performance and programs when selecting a subcontractor to perform any type of work that might bring them into contact with any hazardous chemical or process on the premises of the work site.



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CONTRACTOR & SUBCONTRACTOR SAFETY POLICY

To determine the past safety performance, this Company will, to the best of their ability, consider the subcontractor's:

- Employee injury records such as “Experience Modification Rate” (EMR or MOD) for workers' compensation for the past three years and the contractors past safety record in performing jobs of a similar nature.
- OSHA log, which includes the injury and illness rates (number of lost-time accident cases, number of recordable cases, number of restricted workday cases, number of fatalities) for the past three years.
- Incidence rates for lost-time accidents and recordables for the past three years.
- Written safety program and training system.

For subcontractors whose safety performance on the job is not known, obtain information on injury and illness rates, experience and obtain subcontractor references.

2. Subcontractor work methods and experience should be evaluated. Ensure that for the job in question the subcontractor and its employees have the appropriate:
 - Job skills,
 - Equipment,
 - Knowledge, experience, expertise, and
 - Any permits, licenses, certifications, or skilled trades-people necessary to be capable of performing the work in question.
3. The subcontractor must be willing and able to provide a current certificate of insurance for workers' compensation, general liability, and automobile and excess liability coverage with this Company. **The liability insurance must include this Company as an additional insured on a primary and non-contributory basis.**
4. Each subcontractor must be responsible for ensuring that its employees comply with all applicable local, state, and federal safety requirements, as well as with any safety rules and regulations set forth by this Company, for which it is performing the contracted work.

Possible ways to determine past compliance with such safety regulations are:

- To request copies of any citations for violations occurring within the last three years, to determine the frequency and type of safety laws violated. (This can be checked on the internet at www.OSHA.gov)



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CONTRACTOR & SUBCONTRACTOR SAFETY POLICY

- To have all bidders on jobs describe in detail, and in writing, any safety programs in place including any, OSHA infractions, accidents, and workers' compensation claims within the last three years. This information will provide this Company with a solid background on that subcontractor's safety performance and adherence to safety rules and regulations.

Guidelines for Contracts

Contracts which are entered into by this Company, as head contractor, must contain safety provisions and information on the following topics, as applicable for the job and or work site being contracted:

- The Hazard Communication programs and hazardous chemicals being used by the subcontractor;
- Necessary and expected "Personal Protective Equipment" (PPE) for the job or work site in question;
- **The set of general safety rules to be followed at the work site;**
- Designation of at least one safety person or representative from the subcontractor;
- Designation of financial responsibility for OSHA fines to whichever subcontractor **created the hazard cited**. This applies when this Company is cited, especially under the multi-employer provision, as stated by OSHA.

Guidelines for Information Exchange

General Contractors Guidelines for Information Exchange

Before the contract work begins, the **subcontractor** must:

1. Designate a representative to coordinate all safety and health issues and communicate with this Company's designated representative.
2. Provide documentation of any necessary safety training, as described in the Training Requirements section of this policy, to this Company's designated representative. **All training is the responsibility of each separate subcontractor.**
3. Provide information to this Company of the safety and health hazards that may arise during the course of the subcontractor's work and the means necessary to avoid danger from those hazards, including Hazard Communication and all other potential hazards.



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4. Obtain from this Company any safety rules and regulations in effect at the site, or potential hazards present that may affect the subcontractor's work.
5. Be certain to be informed of any emergency signals and procedures that may be put into operation in areas where the subcontractor's employees are working. The subcontractor should be certain to have the telephone numbers of the nearest hospital, ambulance service and fire department.
6. Advise and train its employees on hazards associated with the work to be performed, including any Hazard Communication or other hazard information.
7. Keep this Company, fully informed of any work which may affect the safety of this Company's employees or property. This includes complying with the state and federal right-to-know legislation and providing appropriate "Safety Data Sheets" (SDS) or other required information about chemicals the subcontractor will bring onto the site.
8. Know who to call and what to do in emergencies, including where first-aid and medical services are located and train employees on this.

During the contract work, the subcontractor will:

1. Have a designated Site Safety Coordinator present and attentive to the work being carried out at all times that any employee is working at the site.
2. Make sure that any equipment, chemicals, or procedures used by the subcontractor to perform contracted work meets all OSHA requirements.
3. Be held responsible and accountable for any losses or damages suffered by this Company, and/or its employees as a result of subcontractor negligence.
4. Provide its employees with medical care and first aid treatment.
5. Provide supervisors and employees who are competent and adequately trained, including training in all health and safety aspects of the work involved in the contract.



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CONTRACTOR & SUBCONTRACTOR SAFETY POLICY

6. Provide all tools and equipment for the work, including “Personal Protective Equipment” (PPE), and ensure the equipment is in proper working order and employees are instructed in its proper use.
7. Maintain good housekeeping at the work site.
8. Follow specific instructions supplied by this Company should emergency alarms be activated.
9. Notify this Company immediately of any OSHA recordable injury or illness, to subcontractor’s employees occurring while on site. Provide a copy of each accident report to this Company.
10. Abide by this Company’s written safety policies and procedures.

After conclusion of the contract work, the subcontractor is responsible for cleaning all work areas and disposing of any discarded materials in a proper and legal manner.

General Contractor Guidelines for Information Exchange

Before contract work begins, **this Company** must:

1. Designate a representative to coordinate and communicate all safety and health issues and communicate with the subcontractor. The designated representative will have a copy of the work contract, be thoroughly familiar with its contents, and with the safety and health aspects of the work, or know who to call to obtain this information. The designated representative is responsible for ensuring that all Company responsibilities listed below are carried out.
2. Provide a copy of any specific work site written safety policies and procedures to the subcontractor.
3. Inform the subcontractor of any emergency signals and procedures that may be put into operation in areas where the subcontractor’s employees are working. The subcontractor should be given the telephone numbers of the nearest hospital, ambulance service and fire department.
4. Conduct an inspection of the proposed work site area before the pre-start up meeting so any known information about on-site hazards, particularly non-obvious hazards, are documented and thoroughly communicated to the subcontractor.



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5. Work directly with the subcontractor's designated representative, with whom all contacts should be made.
6. Conduct a pre-start up meeting (walk through) with the subcontractor's designated representative and a supervisor from each of the areas of the work site involved in the subcontractor's work.
7. Review all contract requirements related to safety and health with the subcontractor's designated representative, including, but not limited to, rules and procedures, "Personal Protective Equipment" (PPE), and special work permits or specialized work procedures. Advise the subcontractor that the work site safety and health policies must be followed. A copy of any specific work site safety plans must be furnished to the subcontractor.
8. Inform the subcontractor's designated representative of the required response to employee alarms and furnish the subcontractor with a demonstration or explanation of the alarms.
9. Communicate thoroughly with the subcontractor's designated representative any safety and health hazards (particularly non-obvious hazards and hazard communication issues) known to be associated with the work, including those in areas adjacent to the work site. Tell them it is the subcontractor's responsibility to convey this information to its employees.
10. Review preparation of work site before the subcontractor begins initial work.
11. Identify connect-points for all services, such as steam, gas, water, electricity, etc. Define any limitations of use of such services.
12. Ensure that all affected employees at the work site receive training on all hazards to which they will be introduced by other subcontractors.

During the contract work, this Company must:

1. Limit, as necessary, the entry of other contractors' employees into hazardous subcontractor work areas.



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CONTRACTOR & SUBCONTRACTOR SAFETY POLICY

2. Monitor the subcontractor's compliance with the contract throughout the duration of the work. When checking subcontractor work during the project, note any negligent or unlawful act or condition in violation of safety standards or requirements. Any items noted should be brought immediately to the attention of the subcontractor's designated representative **IN WRITING**, with a copy of the notice being sent to the subcontractor's home office concurrently. However, if an unsafe act or a condition is noted that creates an imminent danger of serious injury, **IMMEDIATE** steps should be taken with the subcontractor's designated representative, or in his or her absence, the subcontractor's employees to stop the unsafe act or condition. **Do not allow work that is in violation of a regulation to continue.**
3. Document all discussions, including place, time, and names of sub-contractor employees in attendance. (This can be noted in the daily log).
4. For work in which this Company has developed specific and generally applicable procedures, make sure subcontractors follow the same procedures.
5. Do not allow loaning of tools and equipment to subcontractors without the approval of the office. **If the subcontractor will be using approved Company equipment, a signed hold-harmless agreement (attached), and a certificate of insurance must be received prior to use.**
6. Contact the nearest medical facilities, when available, in emergency situations where severity of the injury dictates immediate attention.
7. Obtain a copy of each OSHA recordable injury report from the subcontractor. Maintain a subcontractor accident report file.

After conclusion of the contract work, complete a post-project assessment of the subcontractor's safety performance to be used for future reference, with a recommendation on whether or not to re-hire the subcontractor.

Training Requirements

Subcontractor Requirements - The subcontractor must:

1. Train all workers on all safety and health hazards and provisions applicable to the type of work being done, and provide documentation of such training to this Company.



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2. Train employees on where to obtain first-aid and medical services.

General Contractor Requirements – This Company must:

1. Ensure that affected employees receive training on all hazards to which they will be introduced by a subcontractor.
2. Emphasize to the subcontractor that it is the subcontractor's responsibility to convey to its employees any safety information provided by this Company to the subcontractor.

Recordkeeping Requirements Subcontractor

1. Keep records of all training done with subcontractor workers and all documentation provided to this Company regarding such training.
2. Keep copies on file of all forms or statements related to the contract that are required by this Company to be filled out before or during contract work.
3. Have on file the telephone numbers of the nearest hospital, ambulance service, and fire department.
4. Have copies on-site of all "Safety Data Sheets" (SDS) or other required information about chemicals relevant to the work on-site.
5. Keep an OSHA recordable injury and illness log for the project, as well as copies of accident reports on all accidents that occur in the course of the project.

General Contractor – This Company will:

1. Have a copy of the contract on file and be thoroughly familiar with its contents, and with the safety and health aspects of the work.
2. Keep records of all training done with this Company's employees regarding hazards to be caused by the sub-contracting company(ies).



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3. Keep copies on file of all forms or statements related to the contract that are required by this Company to be filled out before or during contract work.
4. Keep an OSHA recordable injury and illness log for the project, as well as copies of accident reports on all accidents that occur in the course of the project.
5. Keep a daily log regarding pre-work start-up inspection findings.
6. Keep records of all documentation of any sort given to you by the subcontractor, including records of training done, SDS, accident reports, etc.
7. Keep records of all documentation of any sort you give to the subcontractor, including a list of hazards to train their employees on, SDS, etc.
8. Document all discussions, letters, memos, or other communications made to the subcontractor regarding safety issues, including place, time and the names of people involved. **Notes can be taken in the daily log. Copies of written safety violations, etc., of the subcontractor must be kept.**



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SAFETY VIOLATION REPORT

DATE: _____ TIME: _____

JOB SITE NAME: _____ LOCATION: _____

SUPERINTENDENT: _____

COMPANY/EMPLOYER: _____

PERSON IN VIOLATION: _____

WORK BEING PERFORMED:

DESCRIPTION OF VIOLATION:

CORRECTIVE MEASURES "SUGGESTED":

CORRECTIVE MEASURES TAKEN:

OTHER COMMENTS:

RECEIVED BY (SIGNATURE): _____

cc: SITE FM/SUPT
cc/fax: RJC P.M., SUB P.M.

Violation of the company safety policies, if not corrected, may result in disciplinary action, including but not limited to termination of contract and/or employment.



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CONSTRUCTION

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CRANE SAFETY

Purpose

It is the policy of this company to permit only trained and authorized personnel to operate heavy construction equipment. Ringland Johnson Construction does not operate cranes as part of our operations, but on occasion may have to hire a sub-contractor to perform these operations. A crane is considered heavy construction equipment and shall only be operated by trained and qualified individuals (with appropriate certifications, licensing, etc. as required).

All equipment will comply with the manufacturer's specifications and limitations at all times. All heavy construction equipment attachments will not exceed the capacity, rating, or scope recommended by the manufacturer.

Unauthorized modifications can cause accidents and fatalities. Modifications of, or additions to any equipment, which affect capacity or safe operation, are strictly forbidden without notifying the manufacturer and obtaining written approval.

If modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals on the equipment must be changed accordingly, to reflect the new equipment performance specifications. In no case will the original equipment safety factor be reduced.

THE FOLLOWING SETS OUT A GUIDELINE OF WHAT WE REQUIRE FROM ANY COMPANIES WE MAY SUB-CONTRACT THE OPERATION OF A CRANE TO, ON ANY OF OUR JOBSITES

OSHA requirements

The sub-contractor shall designate a competent person who shall inspect all machinery and equipment prior to each use, and during use to make sure it is in safe operating condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use.

MONTHLY (PERIODIC INSPECTIONS) -All crawler, truck, or locomotive cranes in use shall meet the applicable requirements for design, inspection, construction, testing, maintenance, and operation prescribed in ANSI *B30.5-1968-Safety Code for Crawler, Locomotive and Truck Cranes*.

ANNUAL INSPECTION 1926.550(a)(6)-A thorough, annual inspection of the hoisting machinery shall be made by a competent person, or by a government or private agency.



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CRANE SAFETY

Company inspection requirements

A thorough inspection program can forecast maintenance needs or potential equipment failures or malfunctions. The lack of such a program could result in serious deterioration of equipment which might lead to excessive replacement or repair charges as well as increased potential for accidents.

This company requires operators to perform pre-operational equipment inspections on all types of equipment prior to the beginning of each shift in which those pieces of equipment will be used. Operators are to complete their daily inspections according to the manufacturer's and company's recommendations. These inspection procedures will vary by piece of equipment, but in no case is a crane to be used without this pre-operational inspection taking place.

Crane operators must be trained to the level of "competent person" for the equipment they will operate. Crane operators must be "certified crane operators" by the date so established by OSHA under subpart CC. The operator must walk around the crane looking for defects or problem areas. Components that have a direct bearing on the safety of the piece of equipment and whose status can change from day to day with use must be inspected daily, and when possible, observed during operation for any defects that could affect safe operation.

The Crane operator's pre-operational inspections include, but are not limited to, the following:

- 1. Pre-Operational Site Activity and Inspection-** a site inspection to locate site features or activities that may pose a potential hazard during operation of the piece of equipment.
- 2. Pre-Operational (Daily) Walk-Around Inspection-** a walk around the exterior of the piece of heavy equipment, to assess the safety level of attachments, ropes, and all other exterior features.
- 3. Pre-Start Up (In Cab) Inspection-** a check for necessary paperwork, labeling of all switches and controls as to proper function, working order of all lights and other electronic equipment.
- 4. Initial Equipment Operation-** a start-up inspection (each shift), to ensure the equipment is operating properly.



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CRANE SAFETY

If any defect or problem is encountered during the pre-operational inspection, the equipment will be posted appropriately as **OUT OF SERVICE** and our Safety Director is to be notified immediately. The operator will remove the key from the equipment and place a **DANGER DO NOT OPERATE** tag on its steering wheel or control lever. The defect or problem discovered must be identified thoroughly in writing, so that the Maintenance Department personnel can pinpoint the trouble and repair it promptly.

If the equipment is safe to operate, the operator will make note of that on the monthly log form (one is secured to each piece of heavy construction equipment), and then proceed about the job at hand.

Pre-operational site activity and inspection

Accidents can be avoided by careful job planning. The crane operator must have a clear understanding of the work to be performed and considers all potential dangers at the job site. The following checklist helps in planning a lifting operation.

Have a pre-lift plan for the job and have explained it to all employees involved in the lift. The plan should include:

1. A list of items to be moved, including a description of each item's weight, dimensions, center of gravity, and presence of hazardous or toxic materials.
2. Rigging sketches that serve as a guide of what will happen. The sketches may include lifting points, methods of attachment, sling angles, load vectors, boom and swing angles, crane orientations, rated capacities, and other factors affecting equipment operation.
3. Step-by-step operating procedures that include applicable rigging precautions and safety measures.
4. A pre-lift meeting to review the plan. The meeting is held before the actual lift, and is attended by the operator, signalers, competent person, and others as required.

If there are any modifications or additions that would affect the capacity or safe operation of the crane: instruction plates, tags, and decals must be changed accordingly.

The original **safety factor** of the equipment must **never** be reduced.



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CRANE SAFETY

GROUND CONDITIONS

IMPORTANCE OF GROUND CONDITIONS: Adequate ground conditions are essential for safe crane operations because the crane's capacity and stability depend on such conditions being present. If, for example, the ground is muddy or otherwise unstable, a crane could overturn even if operated with the load limits specified by the manufacturer.

BASIC RULE: You must not assemble or use a crane unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials (such as blocking, mats, cribbing, or marsh buggies (in marshes/wetlands), the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands.

The controlling entity (General Contractor/owner, etc.) must also inform the operator of the equipment 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) in the possession of the controlling entity (whether at the site or off-site) and of any other hazards known to the controlling entity.

OVERHEAD POWER LINES (ELECTRICAL)

DANGER – HIGH VOLTAGE: Electrocutions caused by a crane, load, or load line contacting a power line have caused numerous fatalities. To prevent such accidents in the future, the OSHA standard contains detailed, systematic procedures that this company must follow when operating cranes near power lines. These procedures are designed to 1) prevent equipment from making electrical contact with power lines; and 2) protect workers in the event that such contact occurs.

THE FIRST STEP – COULD THE CRANE GET CLOSER THAN 20 FEET TO A POWER LINE? Keeping a safe distance from power lines is the key to preventing power line accidents. Therefore, the first step you must take when planning to operate a crane on a site where a power line is present is to identify the crane's work zone and use that work zone to determine how close it could come to the power line. If you determine that no part of the crane, load, or load line could get closer than 20 feet to a power line, no further precautions are required. If the initial plan for the crane's use changes during the project, you must reevaluate whether the equipment could get closer than 20 feet to the power line. [Note: If the line's voltage is over 350,000 volts, a 50-foot, rather than 20-foot, minimum clearance must be maintained. This Guide assumes that the voltage is less than 350,000 volts and uses the 20-foot clearance distance.]



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CRANE SAFETY

There are two ways to identify the work zone and use it to determine whether the equipment could get closer than 20 feet to the power line. First, if the equipment (crane, load, load line, or rigging) could not get closer than 20 feet to the line even if the crane is operated at its maximum working radius, the 20-foot requirement is satisfied. Alternatively, you may establish a work zone by establishing boundaries (using flags or a device such as a range limit device or range control warning device) that are more than 20 feet from the power line and prohibiting the operator from operating the equipment past those boundaries.

ALTERNATIVE TO 20-FOOT CLEARANCE (TABLE A): If you know the line's voltage, you may use the minimum clearance distance in Table A in lieu of 20 feet. Table A provides:

Table A - Minimum Clearance Distances	
Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/ operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution)
Note: The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.	



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One way to determine the line's voltage is to ask the line's owner or operator. The utility must respond to such a voltage inquiry within two working days.

If you use Table A to determine the minimum clearance distance, you must determine whether any part of the crane, load, or load line could get closer than the Table A distance to a power line if the equipment is operated up to its maximum working radius in the work zone.

If you determine that part of the crane, load, or load line could come closer to the power line than the required minimum clearance distance (either 20 feet or the Table A clearance), you must either de-energize and ground the line or take specified steps to maintain the required minimum clearance distance.

DE-ENERGIZE AND GROUND: De-energizing and visibly grounding the line will protect against electrocution and avoid the need for additional precautions. However, this company must rely on the power line's owner or operator to take these steps, and utilities are generally unwilling to de-energize their lines because doing so will cut off service to their customers. As a result, this precaution will usually not be available.

You must assume that all power lines are energized unless the utility owner/operator confirms that the power line has been and continues to be de-energized and the line is visibly grounded at the worksite.

STEPS YOU MUST TAKE TO MAINTAIN THE REQUIRED MINIMUM CLEARANCE DISTANCE: You must take all of the following steps.

1. Conduct a planning meeting with the crane operator and the other workers who will be in the area of the equipment or load to review the location of the power line(s), and the steps that will be implemented to prevent encroachment/electrocution.
2. If tag lines are used, they must be non-conductive.
3. Erect and maintain an elevated warning line, barricade, or line of signs equipped with flags or similar high-visibility markings at the minimum clearance distance. If the operator cannot see the elevated warning line, a dedicated spotter must be used to signal the operator that the crane is passing the marked line.

In addition, you must use at least one of the following precautions:



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CRANE SAFETY

1. A dedicated spotter (a worker whose only duty is to observe the clearance between the equipment and the line) who is in continuous contact with the operator.
2. A proximity alarm set to give the operator sufficient warning to prevent encroachment.
3. A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator sufficient warning to prevent encroachment.
4. A device that automatically limits the crane's range of movement, set to prevent encroachment.
5. An insulating link/device installed between the end of the load line and the load.

If you use a dedicated spotter, the dedicated spotter must be able to judge the distance between the equipment and the line and inform the operator if the equipment is getting too close to the line.

Therefore, the spotter must:

1. Be equipped with a visual aid (such as a clearly visible line painted on the ground or a clearly visible line of stanchions) to assist in identifying the minimum clearance distance.
2. Be positioned to effectively gauge the clearance distance.
3. Where necessary, use equipment that enables the spotter to communicate directly with the operator.
4. Give timely information to the operator so that the required clearance distance can be maintained.
5. Be trained to be able to perform his/her duties effectively.

OPERATION BELOW POWER LINES GENERALLY PROHIBITED

No part of the equipment, load line, or load (including rigging and lifting accessories) is allowed below a power line unless:



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1. We have confirmed that the utility owner/operator has de-energized and visibly grounded the power line at the worksite, or
2. The highest point of the equipment's boom, even if completely extended and vertical, will be more than the required minimum distance from the power line.

PRECAUTIONS FOR MOVING EQUIPMENT

A crane traveling with a load must comply with the minimum clearance distance and associated precautions listed above. If the crane is traveling with no load, the following clearance distances must be maintained.

Table T – Minimum Clearance Distances While Traveling With No Load	
Voltage (nominal, kV, alternating current)	While Traveling – Minimum clearance distance (feet)
up to 0.75	4
over .75 to 50	6
over 50 to 345	10
over 345 to 750	16
over 750 to 1,000	20
over 1,000	(as established by the utility owner/ operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution)

In determining whether the equipment will maintain the required clearance distance, you must take into account the effects of speed and terrain on the equipment's movement (including movement of the boom/mast). In addition, **if any part of the equipment can get closer than 20 feet to the line, you must use a dedicated spotter to observe the clearance and signal the operator in order to keep the required minimum clearance.**

LIMITED EXCEPTION TO MANDATORY MINIMUM CLEARANCE (Overhead power lines)



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In some circumstances, it is impossible to perform a required lift while staying the required minimum distance from a power line. The OSHA standard provides a limited exception for such circumstances that allows operations closer than the minimum distance. However, it requires additional precautions due to the extreme danger of operating so close to a power line.

Before using this exception, you must determine that specific work required to complete the project cannot be performed while maintaining the Table A clearance. In making this determination, you must consider whether an alternative method of performing the lift, such as repositioning the crane or the load, will enable you to maintain the required minimum distance. If you have decided that it is absolutely necessary to operate closer than the required minimum distance, you must consult the utility that owns or operates the line to determine whether it is feasible to de-energize and ground or relocate the line. Only if de-energizing/grounding or relocation is not feasible may you operate closer than the Table A distance to an energized line. In such a case, you must take the following precautions to protect workers:

FIRST: DETERMINE AN ABSOLUTE MINIMUM CLEARANCE: You must have the power line owner/operator or a registered professional engineer who is a qualified person with respect to electrical power transmission and distribution determine the minimum clearance distance that must be maintained to prevent electrical contact in light of the on-site conditions. The factors that must be considered in making this determination include, but are not limited to: conditions affecting 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.

SECOND: HOLD A PLANNING MEETING: You must hold a planning meeting with the utility owner/operator (or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution) to determine the procedures that will be followed to prevent electrical contact and electrocution.

THIRD: USE PROTECTIVE PROCEDURES: The procedures required by the standard and any additional procedures developed at the planning meeting must be followed. The following procedures are required by the standard and must be followed without exception:

1. If the power line is equipped with a device that automatically re-energizes the circuit in the event of a power line contact, before the work begins, the automatic



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re-closing feature of the circuit interrupting device must be made inoperative if the design of the device permits.

2. A dedicated spotter who is in continuous contact with the operator must be used to ensure that the equipment does not breach the minimum clearance. The requirements for a dedicated spotter are discussed above.
3. 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, must be erected.
4. An insulating link/device must be installed at a point between the end of the load line (or below) and the load. (NOTE: certain safety procedures or devices may be substituted for a Nationally Recognized Testing Laboratory-approved insulating link during an interim time period. Refer to section 1926.1410(d)(4)(iv) and (v) of the standard for details)
5. All employees who may come in contact with the equipment, the load line, or the load (except operators located on the equipment) must be insulated or guarded from the equipment, the load line, and the load by wearing insulating gloves rated for the voltage involved or using another effective means of insulating themselves from the equipment.
6. Nonconductive rigging must be used.
7. If the equipment 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.
8. Any tag line that is used must be of the nonconductive type.
9. Barricades forming a perimeter at least 10 feet away from the equipment must be erected to prevent unauthorized personnel from entering the work area. In areas where obstacles prevent the barricade from being at least 10 feet away, the barricade must be as far from the equipment as feasible.
10. Workers other than the operator must be prohibited from touching the load line above the insulating link/device and crane. The operator is excluded from this



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requirement because, while on the equipment, the operator is, in effect, touching the load line above the insulating link/device. However, if the operator is remotely operating the equipment from the ground, he/she must use either wireless controls that isolate the operator from the equipment or insulating mats that insulate the operator from the ground.

11. Only personnel essential to the operation are permitted in the area of the crane and load.
12. The equipment must be properly grounded.
13. 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.
14. Each operator and crew member assigned to work with the equipment must be trained in the topics listed earlier in this section.

FOURTH: APPOINT A PROJECT DIRECTOR: You, along with the utility owner/operator (or registered professional engineer) and all other employers involved in the work, must identify one person who will direct the implementation of the procedures. That person must have the authority to stop work at any time to ensure safety.

FIFTH: RECONSIDER YOUR PLAN IF A PROBLEM ARISES: The danger of operating a crane close to a power line cannot be overemphasized. Procedures that may appear adequate at the beginning of a job may not be adequate in practice. For example, if electricity arcs from the line to the equipment, whatever precautions are being taken are not sufficient. Therefore, if there is any indication that the procedures being followed are inadequate to protect workers, you must safely stop operations and either develop new, more protective procedures or have the utility owner/operator de-energize and visibly ground or relocate the power line before resuming work.

Assembly and Disassembly

When assembling or disassembling equipment (or attachments), the crane contractor must comply with all applicable manufacturer prohibitions and must comply with manufacturer procedures applicable to assembly and disassembly. Assembly/disassembly will 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.



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Rigging

All rigging will be inspected prior to use each day and as necessary during its use to ensure that it is safe. Any rigging found to be defective must be immediately removed from service.

All rigging must have a load capacity tag or markings. Loads must not exceed the capacity of the rigging. Any rigging devices that do not have capacity tags or markings will be taken out of service.

Any rigging that is not in use will be kept in storage areas so it will not present a hazard to other individuals working in the area.

Tag lines should be used when applicable to prevent dangerous swing or spin of materials.

SIGNAL PERSONS

A crane operator often needs a second set of eyes, in the form of a signal person, to be able to operate safely. These sections state when a signal person must be provided and the types of signals that are allowed. The qualifications the signal person must possess are specified in CFR 1926.1428 (Signal person qualifications).

WHEN A SIGNAL PERSON IS NEEDED

In each of the following situations, a signal person must be provided:

1. When the point of operation, meaning the path the load travels or the area where the load is placed, is not in full view of the operator.
2. When the equipment is traveling and the operator's view in the direction of travel is obstructed.
3. When, due to site-specific safety concerns, either the operator or the person handling the load determines that it is necessary.

During operations requiring signals, the ability to transmit signals between the operator and signal person must be maintained. If that ability is interrupted at any time, the operator must safely stop operations until signal transmission is reestablished and a proper signal is given and understood.

Only one person may give signals to a crane/derrick at a time, except that any person may give an emergency stop signal.



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TYPES OF SIGNALS

Hand, voice, audible, or new signals are allowed. The type of signals used and means of transmitting the signals to the operator (such as direct line of sight, video, radio, etc.), must be appropriate for the site conditions. All directions given to the operator by the signal person must be given from the operator's perspective.

HAND SIGNALS

When using hand signals, the Standard Method must be used. Exception: Where an operation or use of an attachment is not covered in the Standard Method or the use of the Standard Method is otherwise infeasible, non-standard hand signals may be used. When using non-standard hand signals, the signal person, operator, and lift director (where there is one) must contact each other prior to the operation and agree on the non-standard hand signals that will be used. **Hand signal charts must be either posted on the equipment or conspicuously posted in the vicinity of the hoisting operation.**

VOICE SIGNALS

These are signals given by oral communication, with or without amplification or electronic transmission. If this type of signal is used, the operator, signal person, and lift director (if there is one) must, before beginning operations, contact each other and agree on the voice signals that will be used. In most cases where voice signals are given, some type of electronic transmission and reception will be used. When this is the case:

1. The device(s) used to transmit signals must be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.
2. Signal transmission must be through a dedicated channel, except:
 - a. Multiple cranes/derricks and one or more signal persons may share a dedicated channel for the purpose of coordinating operations.
 - i. Where a crane is being operated on or adjacent to railroad tracks, and the actions of the crane operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks.
3. The operator's reception of signals must be by a hands-free system.

AUDIBLE SIGNALS

These are signals made by a distinct sound or series of sounds, such as sounds made by a bell, horn, or whistle. As with other types of signals, the signal person and operator must clearly understand the meaning of the signals being used.



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NEW SIGNALS

The standard allows room for development of new signal technology by permitting signals other than hand, voice, or audible signals to be used where the employer demonstrates that:

1. The new signals provide at least equally effective communication as voice, audible, or Standard Method hand signals, or
2. The new signals comply with a national consensus standard that provides at least equally effective communication as voice, audible, or Standard Method hand signals.

Pre-operational (daily) walk around inspection

Inspection of all cranes and crane equipment will be made at the start of each shift and during use to make sure it is in a safe operating condition. This inspection is the responsibility of our company competent person.

Any deficiencies will be repaired, or defective parts replaced, before the equipment can be used.

A checklist for daily inspection of cranes and equipment includes, but is not limited to, the following:

1. Check that all exposed moving parts are guarded or isolated. A removed guard may indicate that a mechanic is working on the crane. Reciprocating, rotating, or other moving parts or equipment will be guarded if such parts are exposed to contact by employees, or otherwise create a hazard. Guarding will meet the requirements of ANSI B15.1-1958, *Safety Code for Mechanical Power Transmission Apparatus*.
2. Check that high voltage warning signs are displayed on the exterior of the crane on each side and on the counterweight of the crane.
3. Visually inspect each component of the crane used in lifting, swinging, or lowering the load or boom for any defects that might result in unsafe operation.
4. Inspect all wire rope (including standing ropes). Wire rope shall be taken out of service when any of the following conditions exist:
 - a. In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.



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- b. Wear of one-third of the original diameter of outside individual wires.
 - c. Kinking, crushing, bird caging, and corrosion, or any other damage resulting in distortion of the rope structure.
 - d. Evidence of any heat damage from any cause.
 - e. Reductions from nominal diameter of more than allowed by the OSHA rules.
 - f. 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.
 - g. Wire rope safety factors shall be in accordance with ANSI B30.5-1968 or SAE J959-1966.
5. Check for freedom of rotation of all swivels.
 6. Inspect tires for cuts, tears, breaks, and proper inflation.
 7. Check exhaust pipes for guards or insulation in areas where contact by employees, in the performance of normal duties, is possible.
 8. Visually inspect the crane for fluid leaks in lines, tanks, valves, pumps, and other parts of fuel, air, or hydraulic systems.
 9. Check batteries for water level, corrosion, and tight connectors.
 10. Visually check that the crane is properly lubricated. The fuel, lubricating oil, coolant and hydraulic oil reservoirs should be filled to proper levels.
 11. Inspect sheaves, drums, rigging, hardware, and attachments.
 12. Check all other functional operating mechanisms such as locking mechanisms, limit switches, safety devices, hydraulic cylinders, instruments, and lights.
 13. Check guardrails, handholds, and steps for security.
 14. Check platform and walkway anti-skid surfaces for damage.
 15. Check platforms and walkways for slippery substances such as grease, oil, or ice.
 16. Check the turntable connections for weld cracks and loose or missing bolts. If they are loose, there is a good chance that they have been stretched.



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Boom and Jib

1. Visually inspect the boom and jib for straightness and any evidence of physical damage, such as cracking, bending, or any other deformation of the welds.
2. Look for corrosion under any attachments that are connected to the chords and lacing.
3. Look carefully for cracking or flaking of paint. This may indicate fatigue of the metal which often precedes a failure.
4. On lattice booms, look for bent lacing. If they are kinked or bent, the main chord can lose substantial support in that area.

Outriggers

Check outriggers to ensure that neither the beams nor the cylinders are distorted or cracked.

1. The swing radius of the crane shall be appropriately marked or guarded. Caution tape extending from one outrigger to the other, on each side of the crane may be acceptable.
2. All outriggers shall be properly cribbed, with all cribbing tightly abutted. The accepted industry practice is that the cribbing shall be 3 times the area of the outrigger pad.
3. Outriggers are to be fully extended unless the load charts specify otherwise.
4. Check that the welds are not cracked and that both the beams and cylinders extend and retract smoothly and hold the load. Beams should be marked to indicate when they are fully extended. **Outriggers shall be fully extended.**
5. Check the condition of the floats, and check that they are securely attached. Floats must have the capacity to be securely attached to the outriggers.

KEEPING CLEAR OF THE LOAD

This section seeks to protect employees against being struck by a moving or falling load.



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SAFE HOISTING ROUTES

Where available, hoisting routes that minimize the exposure of employees to hoisted loads must be used, to the extent consistent with public safety.

STATIONARY SUSPENDED LOADS

While the operator is not moving a suspended load, no employee may be within the fall zone, except for employees:

1. Engaged in hooking, unhooking, or guiding the load;
2. Engaged in the initial attachment of the load to a component or structure;
3. Operating a concrete hopper or concrete bucket.

HOOKING, UNHOOKING, OR GUIDING THE LOAD

When employees in the fall zone are engaged in hooking, unhooking, or guiding the load, or are connecting a load to a component or structure, all of the following criteria must be met:

1. The materials being hoisted must be rigged to prevent unintentional displacement.
2. Hooks with self-closing latches or their equivalent must be used. Exception: "J" hooks may be used for setting trusses so that a worker need not go onto the truss to open the hook.
3. The materials must be rigged by a qualified rigger.

RECEIVING A LOAD

Only employees needed to receive a load are permitted to be within the fall zone when a load is being landed.

TILT-UP OR TILT-DOWN OPERATION

During a tilt-up or tilt-down operation:

1. No employee may be directly under the load.
2. Only employees essential to the operation are permitted in the fall zone (but not directly under the load). Such employees include those who must be in the fall



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zone to guide the load, monitor the load's movement, or attach and/or detach the load.

Other requirements

If the crane is going to be operated in an enclosed space, tests will be made and recorded to ensure that employees are not exposed to unsafe concentrations of toxic gases, such as carbon monoxide, or oxygen-deficient atmospheres.

If we are planning on hoisting workers on a suspended personnel platform hoist, we will follow the **strict** OSHA regulations for lifting workers.

Pre-start-up (in cab) inspection

Cab

1. Check that inspection and maintenance records, operator's manual, and appropriate load charts for the loads being lifted are present.
2. Check that the cab is clean and free of clutter.
3. Check that all controls are labeled as to their function. Check that they are free to return to the neutral position when released unless designed to do otherwise.
4. Check that all gauges and warning lights are operable.
5. Check signal horn and back up alarms.
6. Check service/parking brake for proper operation.
7. Check that the seat is securely attached and that the cab door opens outward and operates smoothly.

Fire extinguisher

An accessible fire extinguisher of 5BC rating, or higher, shall be at all operator stations or cabs.

Field of vision

Check for any broken or cracked window glass that may affect the view of the operator.



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Cab windows must be made of safety glass, or equivalent, with no visible distortion that would interfere with safe operation.

Placards

Check that rated load capacities, recommended operating speeds, special hazard warnings, i.e., electrical power line clearance requirements, or instructions, are posted and visible to the operator while at the control station.

It is not enough to just have load charts available. The crane operators must be able to show adequate understanding and proficient use of the charts as related to the equipment in use and for the loads being lifted.

Operation

Outriggers, when used, shall be fully extended and tires shall be off the ground.

Warning tape or other means shall be used to mark off the swing area of the crane.

Inspect and test all brakes and clutches for proper adjustment and operation.

Always inspect boom hoist lockout and other operator aids, such as anti-two block devices (ATB) and load moment indicators (LMI), for proper operation and calibration.

While the engine is running, check all gauges and warning lights for proper readings and operate all controls to see that they are functioning properly.

Load rating chart

A durable rating chart(s) with legible letters and figures will be attached to the crane in a location accessible to the operator while at the controls.

Load chart review

The Operator must consider the manufacturer's operating notes supplied with the machine and containing important information concerning proper set-up, operation and additional points that need to be considered when calculating load handling capacities of cranes. **Mistakes in calculating capacity can cause accidents!**

It is also important to consider the following operational conditions:

It is very dangerous to lift a load without knowing whether it is within the rated capacity of the crane.



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1. The operator must always stay within the rated load capacity and working radius. Under adverse field conditions, our operators must reduce the load capacity until it is determined the machine can safely handle the lift.
2. When working at boom lengths or radii between the figures shown on the load capacity chart, the next lower capacity rating should be used. It is dangerous to guess the capacity for boom lengths or radii between those listed on the rating plate.
3. The operator will not lift a load when winds create an unsafe or hazardous condition. Even a light wind can blow the load out of control, collapse a boom, or tip the machine.
4. The operator must take proper precautions when the velocity of wind exceeds 20-mph. If possible, booms will be lowered or secured under high wind conditions.
5. The operator will not use counterweights heavier than the manufacturer's specified weight.
6. Operators will keep their feet on the pedals while foot pedal brake locks are in use. Brakes could cool allowing the load to fall.

Crane operation checklist

Only qualified and properly designated people will operate the cranes.

Qualified means an employee who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.

Designated person means "authorized employee" approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.

All employees and workers will be kept clear of suspended loads and loads about to be lifted.

Signal man

Outriggers will be visible to the operator or a signal person during extension or setting.



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Passengers

No one except the oiler, instructor, or competent person will be allowed on an operating crane.

The operator will not hoist, lower, swing, or travel while anyone is on the load or hook. This includes riding a bare hook or a load of material such as beams, girders, or concrete buckets.

Periodic inspections

To ensure that equipment is in a safe condition, the standard requires a variety of inspections. The following inspections are required of all equipment:

1. Shift inspections
2. Monthly inspections
3. Annual inspections
4. Shift, monthly, and annual wire rope inspections (if the equipment uses wire rope).

In addition, the following special inspections are required in particular circumstances:

1. Post-assembly inspections
2. Equipment used in severe service
3. Equipment not in regular use
4. Inspections of certain modified equipment
5. Inspections of certain repaired/adjusted equipment

As described below, certain inspections must be conducted by a competent person and others by a qualified person. See OSHA Section 1401 (Definitions) for an explanation of these terms.

SHIFT INSPECTIONS

A competent person must visually inspect the equipment each shift the equipment is used. Taking apart equipment components and booming down is not required as part



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of this inspection unless the results of the visual inspection or trial operation indicate that further investigation necessitating taking apart equipment components or booming down is needed. At a minimum the inspection must include all of the following:

1. Control mechanisms for maladjustments interfering with proper operation.
2. Control and drive mechanisms for apparent excessive wear of components and contamination by lubricants, water or other foreign matter.
3. Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation.
4. Hydraulic system for proper fluid level.
5. Hooks and latches for deformation, cracks, excessive wear, or damage such as from chemicals or heat.
6. Wire rope reeving for compliance with the manufacturer's specifications.
7. Wire rope (see section 1413 for the rules for wire rope inspections).
8. Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, or dirt or moisture accumulation.
9. Tires (when in use) for proper inflation and condition.
10. Ground conditions around the equipment for proper support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions.
11. The equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.
12. Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view.
13. Rails, rail stops, rail clamps and supporting surfaces when the equipment travels on rails.



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14. Safety devices and operational aids for proper operation.
15. For derricks, guys for proper tension (section 1436(p)).
16. Deficiencies identified during the most recent annual inspection that the inspector determined must be monitored in the monthly inspections.

If the inspection shows that a safety device (see section 1415 for a list of required safety devices) is not working properly, the equipment must not be used. If it shows that an operational aid (see section 1416 for a list of required operational aids) is not working properly, the equipment may be used for a limited period of time (7 or 30 calendar days depending on the type of operational aid) as long as specified temporary alternative precautions are taken. For the other items covered by the inspection, if the inspector finds any deficiency in an item, he/she must determine if the deficiency is serious enough to be a safety hazard. If so, the equipment must not be used until the deficiency is corrected. Shift inspections need not be documented.

MONTHLY INSPECTIONS: The monthly inspection is the same as a shift inspection for most equipment.

Documentation of monthly inspection: The following information must be documented and maintained for a minimum of three months by the employer that conducts the inspection:

1. The items checked and the results of the inspection.
2. The name and signature of the person who conducted the inspection and the date.

ANNUAL/COMPREHENSIVE INSPECTIONS

The annual inspection must be conducted by a qualified person and is far more thorough than a shift or monthly inspection. In addition to those items that must be checked during a shift inspection, the annual inspection must include:

1. Equipment structure (including the boom and, if equipped, the jib) as follows:
 - a. Structural members: deformed, cracked, or significantly corroded.
 - b. Bolts, rivets and other fasteners: loose, failed, or significantly corroded.
 - c. Welds for cracks.
2. Sheaves and drums for cracks or significant wear.



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3. Parts such as pins, bearings, shafts, gears, rollers and locking devices for distortion, cracks, or significant wear.
4. Brake and clutch system parts, linings, pawls, and ratchets for excessive wear.
5. Safety devices and operational aids for proper operation (including significant inaccuracies).
6. Gasoline, diesel, electric, or other power plants for safety-related problems (such as leaking exhaust and emergency shutdown feature) and conditions, and proper operation.
7. Chains and chain drive sprockets for excessive wear of sprockets and excessive chain stretch.
8. Travel steering, brakes, and locking devices, for proper operation.
9. Tires for damage or excessive wear.
10. Hydraulic, pneumatic and other pressurized hoses, fittings, and tubing, as follows:
 - a. Flexible hose or its junction with the fittings for indications of leaks.
 - b. Threaded or clamped joints for leaks.
 - c. Outer covering of the hose for blistering, abnormal deformation, or other signs of failure/impending failure.
 - d. Outer surface of a hose, rigid tube, or fitting for indications of excessive abrasion or scrubbing.
11. Hydraulic and pneumatic pumps and motors, as follows:
 - a. Performance indicators: unusual noises or vibration, low operating speed, excessive heating of the fluid, low pressure.
 - b. Loose bolts or fasteners.
 - c. Shaft seals and joints between pump sections for leaks.
12. Hydraulic and pneumatic valves, as follows:
 - a. Spools: sticking, improper return to neutral, and leaks.
 - b. Leaks.
 - c. Valve housing cracks.



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- d. Relief valves: failure to reach correct pressure (if there is a manufacturer procedure for checking pressure, it must be followed).
13. Hydraulic and pneumatic cylinders, as follows:
- a. Drifting caused by fluid leaking across the piston.
 - b. Rod seals and welded joints for leaks.
 - c. Cylinder rods for scores, nicks, or dents.
 - d. Case (barrel) for significant dents.
 - e. Rod eyes and connecting joints: loose or deformed.
14. Outrigger or stabilizer pads/floats for excessive wear or cracks.
15. Slider pads for excessive wear or cracks.
16. Electrical components and wiring for cracked or split insulation and loose or corroded terminations.
17. Warning labels and decals originally supplied with the equipment by the manufacturer or otherwise required under this standard: missing or unreadable.
18. Originally equipped operator seat (or equivalent): missing.
19. Operator seat: unserviceable.
20. Originally equipped steps, ladders, handrails, or guards: missing.
21. Steps, ladders, handrails, or guards: in unusable/unsafe condition.
22. For tower cranes, all turntable and tower bolts must be inspected for proper condition and torque (section 1435(f)).
23. For derricks, gudgeon pins for cracks, wear, and distortion, and foundation supports for continued ability to sustain the imposed loads (section 1436(p)).

If necessary, disassembly is required to complete the annual inspection. Also, the inspection must include functional testing to determine that the equipment as configured in the inspection is functioning properly.



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Corrective action

If the qualified person who conducts the inspection identifies any deficiency in any of the items inspected and determines that the deficiency constitutes a safety hazard, the equipment must be taken out of service until the deficiency is corrected. (See the discussion above under shift inspections for the corrective action required if an operational aid is not working properly). If the qualified person determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.

Documentation of annual/comprehensive inspection.

The following information must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection:

1. The items checked and the results of the inspection.
2. The name and signature of the person who conducted the inspection and the date.

Periodic inspections will include a monthly and an annual inspection.

Recordkeeping & certification requirements

This crane company will complete and maintain the following recordkeeping and certification requirements.

For the monthly periodic inspection, the crane company must prepare a **certification record or log** which includes:

1. The date the crane items were inspected.
2. The signature of the person who inspected the crane items.
3. A serial number, or other identifier, for the crane inspected.

The most recent certification record must be maintained on file until a new one is prepared.

The crane company must prepare and maintain a record of the **annual inspection** for each hoisting machine and piece of equipment used. This record will include the dates and results of the inspection.



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Inspection reports for the annual magnetic particle or other suitable crack detecting inspection will be requested and retained in the crane file.

Written approval from the manufacturer of any modifications or additions that affect the capacity or safe operation of our equipment will be requested and kept on file. In no case will the original safety factor of the equipment be reduced.

If the crane is going to be operated in an enclosed space, tests will be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gasses or oxygen-deficient atmospheres.

Training program

Under no circumstances will an employee operate a piece of heavy equipment until he/she has successfully completed the required equipment operation training program. This includes all new operators unless previous training can be substantiated.

The training program includes classroom instruction and operational training on each specific piece of equipment the employee will operate.

Crane operators must show proof of training certification records as required by the OSHA standard.



DEMOLITION

Definition:

OSHA does not specifically define demolition.

OSHA refers to the ANSI standards: **ANSI A10.6-1990** defines demolition as the dismantling, razing, or wrecking of any fixed building or structure or any part thereof.

OSHA's demolition regulations apply to the removal of ceilings and interior non-load bearing walls and partitions. This includes all partial dismantling and razing activities including those where structural members of the structure are not removed.

OSHA SUBPART T APPLIES TO DEMOLITION PROJECTS.

What are some of the OSHA standards involved in a typical demolition project?

1. Subpart D Occupational Health and Environmental Controls
 - A. Lead
 - B. Asbestos
 - C. Silica
2. Subpart E Personal Protective and Lifesaving Equipment
 - A. Head Protection
 - B. Safety Glasses
 - C. Respiratory Protection
3. Subpart F Fire Protection and Prevention
4. Subpart H Materials Handling, Storage, Use and Disposal
5. Subpart I Tools, Hand & Power
6. Subpart J Welding and Cutting
7. Subpart L Scaffolds
8. Subpart M Fall Protection
9. Subpart N Cranes
10. Subpart T Demolition



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11. Subpart X Stairways and Ladders

12. Subpart Z Toxic and Hazardous Substances

Multi-employer Responsibility

The Controlling Employer

An employer who has general supervisory authority over the worksite, including the power to correct safety and health violations itself or require others to correct them.

A Controlling Employer must exercise reasonable care to prevent and detect violations on the site. The extent of the measures that a Controlling Employer must implement to satisfy this duty of reasonable care is less than what is required of an employer with respect to protecting its own employees. This means that the Controlling Employer is not normally required to inspect for hazards as frequently or to have the same level of knowledge of the applicable standards or of trade expertise as the employer it has hired.

OSHA can apply the general duty clause 5 (a)(1)

Section 5(a)(1) of the Occupational Safety and Health Act of 1970 requires that every working man and woman must be provided with a safe and healthful workplace. The section, more commonly known as the General Duty Clause, specifically states:

"Each employer shall furnish to each of his employees employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

In simple terms, this statement means that you, as an employer, may be obligated to protect your employees from recognized hazards in the workplace even if there is not an OSHA standard which applies to the situation or if hazards still exist after compliance with a standard. In effect, the General Duty Clause obligates employers to take additional steps toward safety if the well-being of employees is in jeopardy.

What steps are taken prior to beginning any demolition on any project?

Competent Person

Before the start of any demolition project, careful preparations must be made to ensure the safety of all workers on the job, and of other individuals within the vicinity of the demolition site.

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A **competent person** experienced in all phases of the demolition is to conduct the demolition planning. Planning should involve the entire demolition operation including methods to be used to bring the structure down, necessary equipment to do the job, and measures to be taken to perform the job safely.

What is a competent person?

Certain activities or safety procedures at a construction site require design, inspection or supervision by a competent person. The OSHA Construction Standard defines a competent person as someone 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.

Engineering Survey

Prior to the start of demolition, an **engineering survey** must be completed to assess the condition of the framing, floors, and walls to prevent a possible premature collapse of the structure. The demolition contractor is responsible for planning the wreckage of the structure, the equipment to do the work, informing worker of hazards and safety requirements, and public safety. Planning should include **necessary safety equipment such as specific respirators, hearing protection, safety nets, lifelines, fall protection, warning signs, eye and face protection, and any other hazard protection device** needed for the job.

The engineering survey should determine if there are any **chemicals, gases, explosives or flammable materials** previously used or stored at the work site, which may still present a hazard. Examples include **asbestos** containing insulation or **lead-based paint** used in the initial construction. **Service and utility companies should be notified in advance of the demolition.**

Then, before demolition begins, electric, gas, sewer, water, steam, and overhead lines etc. must be located and shut off, capped or controlled.

If it's necessary to maintain some of the services, temporary relocation should be performed and all workers notified of the new locations to avoid accidents.

If blasting is planned, a complete written blasting survey must be made by a qualified person. The survey should include the transportation, storage, and inventory of explosives as well as any fire precautions to be taken. A post-inspection of the area should be conducted after the blast to insure that no hazards remain. Enough time

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should be allowed for dust, smoke, and fumes to leave the blasted area before allowing re-entry into the site.

Emergency preparation is a crucial element of the demolition planning process. Workers should know how to respond to possible emergency situations and evacuation routes should be devised, explained, and posted. Local medical or emergency responding facilities should be named and posted in a readily accessible location with phone numbers and addresses. First aid and CPR equipment with the names of on-site certified individuals should also be available on-site.

The demolition area should be clearly marked as such to ensure that only authorized personnel are allowed within restricted areas of the site. All site workers or authorized personnel should be dressed in appropriate personal protective wear and be informed of safety practices and emergency procedures.

1) PREPARATORY OPERATIONS

Before the start of every demolition job, the demolition contractor should take a number of steps to safeguard the health and safety of workers at the job site. These preparatory operations involve the overall planning of the demolition job, including the methods to be used to bring the structure down, the equipment necessary to do the job, and the measures to be taken to perform the work safely. Planning for a demolition job is as important as actually doing the work. Therefore, all planning work should be performed by a competent person experienced in all phases of the demolition work to be performed.

The "American National Standards Institute" (ANSI) A10.6-1983 - *Safety Requirements For Demolition Operations* states:

"No employee shall be permitted in any area that can be adversely affected when demolition operations are being performed. Only those employees necessary for the performance of the operations shall be permitted in these areas."

2) ENGINEERING SURVEY

a) Prior to starting all demolition operations, OSHA Standard [1926.850](#)(a) requires that an engineering survey of the structure must be conducted by a competent person. The purpose of this survey is to determine the condition of the framing, floors, and walls so that measures can be taken, if necessary, to prevent the premature collapse of any portion of the structure. When indicated as advisable, any adjacent structure(s) or improvements should also be similarly checked. The

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demolition contractor must maintain a written copy of this survey. Photographing existing damage in neighboring structures is also advisable.

- b) The engineering survey provides the demolition contractor with the opportunity to evaluate the job in its entirety. The contractor should plan for the wrecking of the structure, the equipment to do the work, manpower requirements, and the protection of the public. The safety of all workers on the job site should be a prime consideration. During the preparation of the engineering survey, the contractor should plan for potential hazards such as fires, cave-ins, and injuries.
- c) If the structure to be demolished has been damaged by fire, flood, explosion, or some other cause, appropriate measures, including bracing and shoring of walls and floors, shall be taken to protect workers and any adjacent structures. It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable material, or similar dangerous substances have been used or stored on the site. If the nature of a substance cannot be easily determined, samples should be taken and analyzed by a qualified person prior to demolition.
- d) During the planning stage of the job, all safety equipment needs should be determined. The required number and type of respirators, lifelines, warning signs, safety nets, special face and eye protection, hearing protection, and other worker protection devices outlined in this manual should be determined during the preparation of the engineering survey. A comprehensive plan is necessary for any confined space entry.

3) UTILITY LOCATION

- a) One of the most important elements of the pre-job planning is the location of all utility services. All electric, gas, water, steam, sewer, and other services lines should be shut off, capped, or otherwise controlled, at or outside the building before demolition work is started. In each case, any utility company that is involved should be notified in advance, and its approval or services, if necessary, shall be obtained.
- b) If it is necessary to maintain any power, water, or other utilities during demolition, such lines shall be temporarily relocated as necessary and/or protected. The location of all overhead power sources should also be determined, as they can prove especially hazardous during any machine demolition. All workers should be informed of the location of any existing or relocated utility service.

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4) MEDICAL SERVICES AND FIRST AID

- a) Prior to starting work, provisions should be made for prompt medical attention in case of serious injury. The nearest hospital, infirmary, clinic, or physician shall be located as part of the engineering survey. The job supervisor should be provided with instructions for the most direct route to these facilities. Proper equipment for prompt transportation of an injured worker, as well as a communication system to contact any necessary ambulance service, must be available at the job site. The telephone numbers of the hospitals, physicians, or ambulances shall be conspicuously posted.
- b) In the absence of an infirmary, clinic, hospital, or physician that is reasonably accessible in terms of time and distance to the work site, a person who has a valid certificate in first aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training should be available at the work site to render first aid.
- c) A properly stocked first aid kit as determined by an occupational physician, must be available at the job site. The first aid kit should contain approved supplies in a weatherproof container with individual sealed packages for each type of item. It should also include rubber gloves to prevent the transfer of infectious diseases. Provisions should also be made to provide for quick drenching or flushing of the eyes should any person be working around corrosive materials. Eye flushing must be done with water containing no additives. The contents of the kit shall be checked before being sent out on each job and at least weekly to ensure the expended items are replaced.

5) POLICE AND FIRE CONTACT

- a) The telephone numbers of the local police, ambulance, and fire departments should be available at each job site. This information can prove useful to the job supervisor in the event of any traffic problems, such as the movement of equipment to the job, uncontrolled fires, or other police/fire matters. The police number may also be used to report any vandalism, unlawful entry to the job site, or accidents requiring police assistance.

6) FIRE PREVENTION AND PROTECTION

- a) A "fire plan" should be set up prior to beginning a demolition job. This plan should outline the assignments of key personnel in the event of a fire and provide an evacuation plan for workers on the site. *Common sense* should be the general rule in all fire prevention planning, as follows:
 - i) All potential sources of ignition should be evaluated and the necessary corrective measures taken.

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- ii) Electrical wiring and equipment for providing light, heat, or power should be installed by a competent person and inspected regularly.
 - iii) Equipment powered by an internal combustion engine should be located so that the exhausts discharge well away from combustible materials and away from workers.
 - iv) When the exhausts are piped outside the building, a clearance of at least six inches should be maintained between such piping and combustible material.
 - v) All internal combustion equipment should be shut down prior to refueling. Fuel for this equipment should be stored in a safe location.
 - vi) Sufficient firefighting equipment should be located near any flammable or combustible liquid storage area.
 - vii) Only approved containers and portable tanks should be used for the storage and handling of flammable and combustible liquid.
- b) Heating devices should be situated so that they are not likely to overturn and shall be installed in accordance with their listing, including clearance to combustible material or equipment. Temporary heating equipment, when utilized, should be maintained by competent personnel.
- c) Smoking should be prohibited at or in the vicinity of hazardous operations or materials. Where smoking is permitted, safe receptacles shall be provided for smoking materials.
- d) Roadways between and around combustible storage piles should be at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other materials. When storing debris or combustible material inside a structure, such storage shall not obstruct or adversely affect the means of exit.
- e) A suitable location at the job site should be designated and provided with plans, emergency information, and equipment, as needed. Access for heavy fire-fighting equipment should be provided on the immediate job site at the start of the job and maintained until the job is completed. Free access from the street to fire hydrants and to outside connections for standpipes, sprinklers, or other fire extinguishing equipment, whether permanent or temporary, should be provided and maintained at all times, as follows:
- i) Pedestrian walkways should not be so constructed as to impede access to hydrants.
 - ii) No material or construction should interfere with access to hydrants, Siamese connections, or fire-extinguishing equipment.

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- f) A temporary or permanent water supply of volume, duration, and pressure sufficient to operate the fire-fighting equipment properly should be made available. Standpipes with outlets should be provided on large multi-story buildings to provide for fire protection on upper levels. If the water pressure is insufficient, a pump should also be provided.
 - g) An ample number of fully charged portable fire extinguishers should be provided throughout the operation. All motor-driven mobile equipment should be equipped with an approved fire extinguisher.
 - h) An alarm system, e.g., telephone system, siren, two-way radio, etc., shall be established in such a way that employees on the site and the local fire department can be alerted in case of an emergency. The alarm code and reporting instructions shall be conspicuously posted and the alarm system should be serviceable at the job site during the demolition. Fire cutoffs shall be retained in the buildings undergoing alterations or demolition until operations necessitate their removal.
- 7) **SPECIAL STRUCTURES DEMOLITION.**
- a) **SAFE WORK PRACTICES WHEN DEMOLISHING A CHIMNEY, STACK, SILO, OR COOLING TOWER**
 - i) **Inspection and Planning.**
 - (1) When preparing to demolish any chimney, stack, silo, or cooling tower, the first step must be a careful, detailed inspection of the structure by an experienced person. If possible, architectural/engineering drawings should be consulted. Particular attention should be paid to the condition of the chimney or stack. Workers should be on the lookout for any structural defects such as weak or acid-laden mortar joints, and any cracks or openings. The interior brickwork in some sections of industrial chimney shafts can be extremely weak. If stack has been banded with steel straps, these bands shall be removed only as the work progresses from the top down. Sectioning of the chimney by water, etc. should be considered.
 - ii) **Safe Work Practice**
 - (1) When hand demolition is required, it should be carried out from a working platform.
 - (a) Experienced personnel must install a self-supporting tubular scaffold, suspended platform, or knee-braced scaffolding around the chimney. Particular attention should be paid to the design, support, and tie-in (braces) of the scaffold.

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- (b) A competent person should be present at all times during the erection of the scaffold.
- (c) It is essential that there be adequate working clearance between the chimney and the work platform.
- (d) Access to the top of the scaffold should be provided by means of portable walkways.
- (e) The platforms should be decked solid and the area from the work platform to the wall should be bridged with a minimum of two-inch thick lumber.
- (f) A back rail 42 inches above the platform, with a mid-rail covered with canvas or mesh, should be installed around the perimeter of the platform to prevent injury to workers below. Debris netting may be installed below the platform.
- (g) Excess canvas or plywood attachments can form a wind-sail that could collapse the scaffold.
- (h) When working on the work platform, all personnel should wear hard hats, long-sleeve shirts, eye, and face protection, such as goggles and face shields, respirators, and safety belts, as required. Care should be taken to assign the proper number of workers to the task. Too many people on a small work platform can lead to accidents.

An alternative to the erection of a self-supporting tubular steel scaffold is to "climb" the structure with a creeping bracket scaffold. Careful inspection of the masonry and a decision as to the safety of this alternative must be made by a competent person. It is essential that the masonry of the chimney be in good enough condition to support the bracket scaffold.

The area around the chimney should be roped off or barricaded and secured with appropriate warning signs posted. No unauthorized entry should be permitted to this area. It is also good practice to keep a worker, i.e., a supervisor, operating engineer, another worker, or a "safety person," on the ground with a form of communication to the workers above.

Special attention should be paid to weather conditions when working on a chimney. No work should be done during inclement weather such as during lightning or high wind situations. The work site should be wetted down, as needed, to control dust.

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iii) Debris Clearance

- (1) If debris is dropped inside the shaft, it can be removed through an opening in the chimney at grade level.
 - (a) The opening at grade must be kept relatively small in order not to weaken the structure. If a larger opening is desired, a professional engineer should be consulted.
 - (b) When removing debris by hand, an overhead canopy of adequate strength should be provided. If machines are used for removal of debris, proper overhead protection for the operator should be used.
 - (c) Excessive debris should not be allowed to accumulate inside or outside the shaft of the chimney as the excess weight of the debris can impose pressure on the wall of the structure and might cause the shaft to collapse.
 - (d) The foreman should determine when debris is to be removed, halt all demolition during debris removal, and make sure the area is clear of cleanup workers before continuing demolition.

iv) Demolition by Deliberate Collapse

- (1) Another method of demolishing a chimney or stack is by deliberate collapse. Deliberate collapse requires extensive planning and experienced personnel, and should be used only when conditions are favorable. There must be a clear space for the fall of the structure of at least 45 degrees on each side of the intended fall line and 1½ times the total height of the chimney. Considerable vibration may be set up when the chimney falls, so there should be no sewers or underground services on the line of the fall. Lookouts must be posted on the site and warning signals must be arranged. The public and other workers at the job site must be kept well back from the fall area.
- (2) The use of explosives is one way of setting off deliberate collapse. This type of demolition should be undertaken only by qualified persons. The entire work area shall be cleared of nonessential personnel before any explosives are placed. Though the use of explosives is a convenient method of bringing down a chimney or stack, there is a considerable amount of vibration produced, and caution should be taken if there is any likelihood of damage.

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v) Demolition of Prestressed Concrete Structures

- (1) The different forms of construction used in a number of more or less conventional structures built during the last few decades will give rise to a variety of problems when the time comes for them to be demolished. Prestressed concrete structures fall in this general category. The most important aspect of demolishing a prestressed concrete structure takes place during the engineering survey. During the survey, a qualified person should determine if the structure to be demolished contains any prestressed members.
- (2) It is the responsibility of the demolition contractor to inform all workers on the demolition job site of the presence of prestressed concrete members within the structure. They should also instruct them in the safe work practice which must be followed to safely perform the demolition. Workers should be informed of the hazards of deviating from the prescribed procedures and the importance of following their supervisor's instruction.
- (3) Pretensioned members usually do not have any end anchors, the wires being embedded or bonded within the length of the member. Simple Pretensioned beams and slabs of spans up to about 7 meters (23 feet) can be demolished in a manner similar to ordinary reinforced concrete. Pretensioned beams and slabs may be lifted and lowered to the ground as complete units after the removal of any composite concrete covering to tops and ends of the units. To facilitate breaking up, the members should be turned on their sides. Lifting from the structure should generally be done from points near the ends of the units or from lifting point positions. Reuse of lifting eyes, if in good condition, is recommended whenever possible. When units are too large to be removed, consideration should be given to temporary supporting arrangements.

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FIGURE V:1-1. CATEGORIES OF PRESTRESSED CONSTRUCTION

There are four main categories of prestressed members. The category or categories should be determined before attempting demolition, bearing in mind that any prestressed structure may contain elements of more than one category.

- **Category 1** Members are prestressed before the application of the superimposed loads, and all cables or tendons are fully bonded in the concrete or grouted within ducts.
- **Category 2** Like Category 1, but the tendons are left ungrouted. This type of construction can sometimes be recognized from the access points that may have been provided for inspection of the cables and anchors. More recently, unbonded tendons have been used in the construction of beams, slabs, and other members; these tendons are protected by grease and surrounded by plastic sheathing, instead of the usual metal duct.
- **Category 3** Members are prestressed progressively as building construction proceeds and the dead load increases, using bonded tendons as in Category 1.
- **Category 4** Like Category 3, but using unbonded tendons as in Category 2.

Examples of construction using members of Categories 3 or 4 are relatively rare. However, they may be found, for example in the podium of a tall building or some types of bridges. They require particular care in demolition.

vi) **Precast units stressed separately from the main frames of the structure, with end anchors and grouted and ungrouted ducts.**

- (1) Before breaking up, units of this type should be lowered to the ground, if possible. It is advisable to seek the counsel of a professional engineer before carrying out this work, especially where there are ungrouted tendons. In general, this is true because grouting is not always 100% efficient. After lowering, the units can be turned on their side with the ends up on blocks after any composite concrete is removed. This may suffice to break the unit and release the pre-stress; if not, a sand bag screen, timbers, or a blast mat as a screen should be erected around the ends and demolition commenced, taking care to clear the area of any

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personnel. It should be borne in mind that the end blocks may be heavily reinforced and difficult to break up.

vii) Monolithic Structures

- (1) The advice of the professional engineer experienced in pre-stressed work should be sought before any attempt is made to expose the tendons or anchorages of structures in which two or more members have been stressed together. It will usually be necessary for temporary supports to be provided so that the tendons and the anchorage can be cautiously exposed. In these circumstances it is essential that indiscriminate attempts to expose and distress the tendons and anchorages not be made.

viii) Progressively Pre-stressed Structures.

- (1) In the case of progressively pre-stressed structures, it is essential to obtain the advice of a professional engineer and to demolish the structure in strict accordance with the engineer's method of demolition. The stored energy in this type of structure is large. In some cases, the inherent properties of the stressed section may delay failure for some time, but the presence of these large pre-stressing forces may cause sudden and complete collapse with little warning.

ix) SAFE WORK PRACTICES WHEN WORKING IN CONFINED SPACES

- (1) Demolition contractors often come in contact with confined spaces when demolishing structure at industrial sites. These confined spaces can be generally categorized in two major groups: those with open tops and a depth that restricts the natural movement of air, and enclosed spaces with very limited openings for entry. Examples of these spaces include storage tanks, vessels, degreasers, pits, vaults, casing, and silos.
- (2) The hazards encountered when entering and working in confined spaces are capable of causing bodily injury, illness, and death. Accidents occur among workers because of failure to recognize that a confined space is a potential hazard. It should therefore be considered that the most unfavorable situation exists in every case and that the danger of explosion, poisoning, and asphyxiation will be present at the onset of entry.

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8) SAFE BLASTING PROCEDURES

a) GENERAL SAFE WORK PRACTICES

i) Blasting Survey and Site Preparation

- (1) Prior to the blasting of any structure or portion thereof, a complete written survey must be made by a qualified person of all adjacent improvements and underground utilities. When there is a possibility of excessive vibration due to blasting operations, seismic or vibration tests should be taken to determine proper safety limits to prevent damage to adjacent or nearby buildings, utilities, or other property.
- (2) The preparation of a structure for demolition by explosives may require the removal of structural columns, beams or other building components. This work should be directed by a structural engineer or a competent person qualified to direct the removal of these structural elements. Extreme caution must be taken during this preparatory work to prevent the weakening and premature collapse of the structure.
- (3) The use of explosives to demolish smokestacks, silos, cooling towers, or similar structures should be permitted only if there is a minimum of 90 of open space extended for at least 150% of the height of the structure or if the explosives specialist can demonstrate consistent previous performance with tighter constraints at the site.

b) Fire Precautions

- i) The presence of fire near explosives presents a severe danger. Every effort should be made to ensure that fires or sparks do not occur near explosive materials. Smoking, matches, firearms, open flame lamps, and other fires, flame, or heat-producing devices must be prohibited in or near explosive magazines or in areas where explosives are being handled, transported, or used. In fact, persons working near explosives should not even carry matches, lighters, or other sources of sparks or flame. Open fires or flames should be prohibited within 100 feet of any explosive materials. In the event of a fire which is in imminent danger of contact with explosives, all employees must be removed to a safe area.
- ii) Electrical detonators can be inadvertently triggered by stray RF (radio frequency) signals from two-way radios. RF signal sources should be restricted from or near to the demolition site, if electrical detonators are used.

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c) Personnel Selection

- i) A blaster is a competent person who uses explosives. A blaster must be qualified by reason of training, knowledge, or experience in the field of transporting, storing, handling, and using explosives. In addition, the blaster should have a working knowledge of state and local regulations which pertain to explosives. Training courses are often available from manufacturers of explosives and blasting safety manuals are offered by the Institute of Makers of Explosives (IME) as well as other organizations.
- ii) Blasters shall be required to furnish satisfactory evidence of competency in handling explosives and in safely performing the type of blasting required. A competent person should always be in charge of explosives and should be held responsible for enforcing all recommended safety precautions in connection with them.

9) TRANSPORTATION OF EXPLOSIVES

a) Vehicle Safety

- i) Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty, and shall be in good mechanical condition. All vehicles used for the transportation of explosives shall have tight floors, and any exposed spark-producing metal on the inside of the body shall be covered with wood or some other non-sparking material. Vehicles or conveyances transporting explosives shall only be driven by, and shall be under the supervision of, a licensed driver familiar with the local, state, and federal regulations governing the transportation of explosives. No passengers should be allowed in any vehicle transporting explosives.
- ii) Explosives, blasting agents, and blasting supplies shall not be transported with other materials or cargoes. Blasting caps shall not be transported in the same vehicle with other explosives. If an open-bodied truck is used, the entire load should be completely covered with a fire and water-resistant tarpaulin to protect it from the elements. Vehicles carrying explosives should not be loaded beyond the manufacturer's safe capacity rating, and in no case should the explosives be piled higher than the closed sides and ends of the body.
- iii) Every motor vehicle or conveyance used for transporting explosives shall be marked or placarded with warning signs required by OSHA and the DOT. Each vehicle used for transportation of explosives shall be equipped minimally with at least a ten-pound rated, serviceable ABC fire extinguisher. All drivers should be trained in the use of the extinguishers on their vehicle.
- iv) In transporting explosives, congested traffic and high density population areas should be avoided, where possible, and no unnecessary stops should be made. Vehicles carrying explosives, blasting agents, or blasting supplies shall

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not be taken inside a garage or shop for repairs or servicing. No motor vehicle transporting explosives shall be left unattended.

10) STORAGE OF EXPLOSIVES

a) Inventory Handling and Safe Handling

- i) All explosives must be accounted for at all times and all not being used must be kept in a locked magazine. A complete detailed inventory of all explosives received and placed in, removed from, and returned to the magazine should be maintained at all times. Appropriate authorities must be notified of any loss, theft, or unauthorized entry into a magazine.
- ii) Manufacturers' instructions for the safe handling and storage of explosives are ordinarily enclosed in each case of explosives. The specifics of storage and handling are best referred to these instructions and the aforementioned IME manuals. They should be carefully followed. Packages of explosives should not be handled roughly. Sparking metal tools should not be used to open wooden cases. Metallic slitters may be used for opening fiberboard cases, provided the metallic slitter does not come in contact with the metallic fasteners of the case.
- iii) The oldest stock should always be used first to minimize the chance of deterioration from long storage. Loose explosives or broken, defective, or leaking packages can be hazardous and should be segregated and properly disposed of in accordance with the specific instructions of the manufacturer. If the explosives are in good condition it may be advisable to repack them. In this case, the explosives supplier should be contacted. Explosives cases should not be opened or explosives packed or repacked while in a magazine.

b) Storage Conditions

- i) Providing a dry, well-ventilated place for the storage of explosives is one of the most important and effective safety measures. Exposure to weather damages most kinds of explosives, especially dynamite and caps. Every precaution should be taken to keep them dry and relatively cool. Dampness or excess humidity may be the cause of misfires resulting in injury or loss of life. Explosives should be stored in properly constructed fire and bullet-resistant structures, located according to the IME American Table of Distances and kept locked at all times except when opened for use by an authorized person. Explosives should not be left, kept, or stored where children, unauthorized persons, or animals have access to them, nor should they be stored in or near a residence.
- ii) Detonators should be stored in a separate magazine located according to the IME American Table of Distances. *DETONATORS SHOULD NEVER BE*

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STORED IN THE SAME MAGAZINE WITH ANY OTHER KIND OF EXPLOSIVES.

- iii) Ideally, arrangements should be made whereby the supplier delivers the explosives to the job site in quantities which will be used up during the work day. An alternative would be for the supplier to return to pick up unused quantities of explosives. If it is necessary for the contractor to store his explosives, he should be familiar with all local requirements for such storage.

11) USE OF EXPLOSIVES

- a) Blasting operations shall be conducted between sunup and sundown, whenever possible. Adequate signs should be sounded to alert to the hazard presented by blasting. Blasting mats or other containment should be used where there is danger of rocks or other debris being thrown into the air or where there are buildings or transportation systems nearby. Care should be taken to make sure mats and other protection do not disturb the connections to electrical blasting caps.
- b) Radio, television, and radar transmitters create fields of electrical energy that can, under exceptional circumstances, detonate electric blasting caps. Certain precautions must be taken to prevent accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent power lines, dust storms, or other sources of extraneous or static electricity. These precautions shall include:
 - i) Ensuring that mobile radio transmitters on the job site that are less than 100 feet away from electric blasting caps, in other than original containers, shall be de-energized and effectively locked.
 - ii) The prominent display of adequate signs, warning against the use of mobile radio transmitters, on all roads within 1,000 feet of the blasting operations. Maintaining the minimum distances recommended by the IME between the nearest transmitter and electric blasting caps.
 - iii) The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm.
 - iv) After loading is completed, there should be as little delay as possible before firing. Each blast should be fired under the direct supervision of the blaster, who should inspect all connections before firing and who should personally see that all persons are in the clear before giving the order to fire.
 - v) Standard signals, which indicate that a blast is about to be fired and a later all-clear signal shall have been adopted. It is important that everyone working in the area be familiar with these signals and that they be strictly obeyed.

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12) PROCEDURES AFTER BLASTING.

a) Inspection after the blast

- i) Immediately after the blast has been fired, the firing line shall be disconnected from the blasting machine and short-circuited. Where power switches are used, they shall be locked open or in the off position. Sufficient time shall be allowed for dust, smoke, and fumes to leave the blasted area before returning to the spot. An inspection of the area and the surrounding rubble shall be made by the blaster to determine if all charges have been exploded before employees are allowed to return to the operation. All wires should be traced and the search for unexploded cartridges made by the blaster.

b) Disposal of Explosives

- i) Explosives, blasting agents, and blasting supplies that are obviously deteriorated or damaged should not be used, they should be properly disposed of. Explosives distributors will usually take back old stock. Local fire marshals or representatives of the United States Bureau of Mines may also arrange for its disposal. Under no circumstances should any explosives be abandoned.
- ii) Wood, paper, fiber, or other materials that have contained high explosives should not be used again for any purpose, but should be destroyed by burning. These materials should not be burned in a stove, fireplace, or other confined space. Rather, they should be burned at an isolated outdoor location, at a safe distance from thoroughfares, magazines, and other structures. It is important to check that the containers are entirely empty before burning. During burning, the area should be adequately protected from intruders and all persons kept at least 100 feet from the fire.

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Subpart T - Demolition

1926.850 Preparatory Operations.

- (a)** Prior to permitting employees to start demolition operations, an engineering survey shall be made, by a competent person, of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The employer shall have in writing evidence that such a survey has been performed.
- (b)** When employees are required to work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.
- (c)** All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company which is involved shall be notified in advance.
- (d)** If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary, and protected.
- (e)** It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.
- (f)** Where a hazard exists from fragmentation of glass, such hazards shall be removed.
- (g)** Where a hazard exists to employees falling through wall openings, the opening shall be protected to a height of approximately 42 inches.
- (h)** When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.
- (i)** All floor openings, not used as material drops, shall be covered over with material substantial enough to support the weight of any load which may be imposed. Such material shall be properly secured to prevent its accidental movement.
- (j)** Except for the cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar necessary preparatory work, the demolition of exterior walls and floor construction shall begin at the top of the structure and

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proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.

(k) Employee entrances to multistory structures being demolished shall be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side thereof), and shall be capable of sustaining a load of 150 pounds per square foot.

1926.851 Stairs, Passageways, and Ladders.

(a) Only those stairways, passageways, and ladders, designated as means of access to the structure of a building, shall be used. **Other access ways shall be entirely closed at all times.**

(b) All stairs, passageways, ladders and incidental equipment thereto, which are covered by this section, shall be periodically inspected and maintained in a clean safe condition.

(c) In a multistory building, **when a stairwell is being used, it shall be properly illuminated by either natural or artificial means,** and completely and substantially covered over at a point not less than two floors below the floor on which work is being performed, and access to the floor where the work is in progress shall be through a properly lighted, protected, and separate passageway.

1926.852 Chutes.

(a) **No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected.**

(b) All materials chutes, or sections thereof, **at an angle of more than 45° from the horizontal, shall be entirely enclosed,** except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.

(c) A **substantial gate** shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.

(d) When operations are not in progress, the area surrounding the discharge end of a chute shall be securely closed off.

(e) Any chute opening, into which workmen dump debris, shall be protected by a substantial guardrail approximately 42 inches above the floor or other surface on which the

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men stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.

(f) Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toeboard or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.

(g) Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

1926.853 Removal of materials through floor openings.

Any openings cut in a floor for the disposal of materials shall be no larger in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition operations shall be shored to carry safely the intended imposed load from demolition operations.

1926.854 Removal of walls, masonry sections, and chimneys.

(a) Masonry walls, or other sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.

(b) No wall section, which is more than one story in height, shall be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.

(c) Employees shall not be permitted to work on the top of a wall when weather conditions constitute a hazard.

(d) Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. This provision shall not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment, provided that the requirements of [§1926.853](#) and [§1926.855](#) are met.

(e) Floor openings within 10 feet of any wall being demolished shall be planked solid, except when employees are kept out of the area below.

(f) In buildings of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Where this is done, all steel beams, girders, and similar structural supports shall be cleared of all loose material as the masonry demolition progresses downward.



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(g) Walkways or ladders shall be provided to enable employees to safely reach or leave any scaffold or wall.

(h) Walls, which serve as retaining walls to support earth or adjoining structures, shall not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.

(i) Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load.

1926.855 Manual removal of floors.

(a) Openings cut in a floor shall extend the full span of the arch between supports.

(b) Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full size undressed, shall be provided for, and shall be used by employees to stand on while breaking down floor arches between beams. Such planks shall be so located as to provide a safe support for the workmen should the arch between the beams collapse. The open space between planks shall not exceed 16 inches.

(c) Safe walkways, not less than 18 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal, shall be provided and used by workmen when necessary to enable them to reach any point without walking upon exposed beams.

(d) Stringers of ample strength shall be installed to support the flooring planks, and the ends of such stringers shall be supported by floor beams or girders, and not by floor arches alone.

(e) Planks shall be laid together over solid bearings with the ends overlapping at least 1 foot.

(f) When floor arches are being removed, employees shall not be allowed in the area directly underneath, and such an area shall be barricaded to prevent access to it.

(g) Demolition of floor arches shall not be started until they, and the surrounding floor area for a distance of 20 feet, have been cleared of debris and any other unnecessary materials.

1926.856 Removal of walls, floors, and material with equipment.

(a) Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

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(b) Floor openings shall have curbs or stop-logs to prevent equipment from running over the edge.

(c) Mechanical equipment used shall meet the requirements specified in Subparts N and O of this part.

1926.857 Storage.

(a) The storage of waste material and debris on any floor shall not exceed the allowable floor loads.

(b) In buildings having wooden floor construction, the flooring boards may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.

(c) When wood floor beams serve to brace interior walls or free-standing exterior walls, such beams shall be left in place until other equivalent support can be installed to replace them.

(d) Floor arches, to an elevation of not more than 25 feet above grade, may be removed to provide storage area for debris: Provided that such removal does not endanger the stability of the structure.

(e) Storage space into which material is dumped shall be blocked off, except for openings necessary for the removal of material. Such openings shall be kept closed at all times when material is not being removed.

1926.858 Removal of steel construction.

(a) When floor arches have been removed, planking in accordance with [§1926.855\(b\)](#) shall be provided for the workers engaged in razing the steel framing.

(b) Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in Subpart N of this part.

(c) Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).

(d) Any structural member being dismembered shall not be overstressed.

1926.859 Mechanical demolition.

(a) No workers shall be permitted in any area, which can be adversely affected by demolition operations, when balling or clamming is being performed. Only those workers



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necessary for the performance of the operations shall be permitted in this area at any other time.

(b) The weight of the demolition ball shall not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it shall not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever results in a lesser value.

(c) The crane boom and loadline shall be as short as possible.

(d) The ball shall be attached to the loadline with a swivel-type connection to prevent twisting of the loadline, and shall be attached by positive means in such manner that the weight cannot become accidentally disconnected.

(e) When pulling over walls or portions thereof, all steel members affected shall have been previously cut free.

(f) All roof cornices or other such ornamental stonework shall be removed prior to pulling walls over.

(g) During demolition, continuing inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

1926.860 Selective demolition by explosives.

Selective demolition by explosives shall be conducted in accordance with the applicable sections of Subpart U of this part.



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DISCIPLINARY POLICY

All safety rules, procedures, and plans in effect at this Company are intended to be followed. Disciplinary action can be enforced by the Safety Director, Foreman, Superintendent, or any other management personnel that witness the safety rule infraction. Safety rules include all items discussed in our Company safety program. Upon violation of any Company safety rule, the violating employee will be penalized.

The list of disciplinary actions includes: (Rules are subject to the restrictions imposed by any Union contractual obligations).

1. **FIRST OFFENSE** – Any individual who violates the safety rules of this Company will receive a **verbal warning**. This warning will be documented and placed in the corporate disciplinary file. The safety rule violation will be discussed with the employee, and the proper corrective action will also be discussed.
 - a. Violation of Fall Protection Policy (first offense) will result in a 1 day suspension without pay and possible termination.
2. **SECOND OFFENSE** – Any individual who violates the safety rules of this Company, for a second time, will receive a **written warning**. This warning will be placed in the employee's permanent record. The safety rule violation will be discussed with the employee, and the proper corrective action will also be discussed.
 - a. Violation of Fall Protection Policy (second offense in 24 month period) will result in a minimum of 3 days suspension without pay and possible termination.
3. **THIRD OFFENSE** – Any individual who violates the safety rules of this Company for a third time **may be subject to termination**. The safety rule violation will be discussed with the employee, and the proper corrective action will also be discussed.
 - a. Violation of Fall Protection Policy (third offense in 24 month period) will result in termination of employment.

The severity of the penalty will be in direct correlation to the severity of the safety violation. Injury or damage is not a necessary constituent to warrant disciplinary action. It is the violation of the rule itself and not necessarily the end result that is the subject of the discipline.



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It is this Company's position that based upon the severity of the safety violation, an employee may be dismissed immediately, and we will forego the above stated procedure. This procedure will be adhered to when the employee acts carelessly, or is recklessly disregarding the safety rules of this Company. This will also apply if the employee endangers anyone else's safety on the jobsite.

Supervisory personnel will also be held responsible for commitment to the company safety program and safety rules. If supervisors fail to complete jobsite safety audits, as required, and there is a disregard for the general safety of workers, then the same violations, as previously stated, will be applicable to supervisory personnel.



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DRUG-FREE WORKPLACE POLICY

Purpose and Goal

Ringland-Johnson Construction is committed to protecting the safety, health and well-being of all employees and other individuals in our workplace. We recognize that alcohol abuse and drug use pose a significant threat to our goals. We have established a drug-free workplace program that balances our respect for individuals with the goal and policy of maintaining an alcohol and drug-free environment.

This organization encourages employees to voluntarily seek help with drug and alcohol problems.

Covered Workers

All employees of the organization and any individual applying for a position with the organization is covered by/subject to our drug-free workplace policy.

Applicability

Our drug-free workplace policy is intended to apply whenever any covered worker (per the above paragraph) is representing or conducting business for the organization. Therefore, this policy applies during all working hours.

Prohibited Behavior

It is a violation of our drug-free workplace policy to use possess, sell, trade, and/or offer for sale alcohol, drugs or intoxicants. In, addition, employees shall not be under the influence or effects of alcohol, drugs, or other dangerous substances while at work.

All employees working for Ringland-Johnson are expected to report fit for scheduled work and to be able to perform assigned duties safely and acceptably without any limitations due to the use or after effects of cannabis, including medical cannabis, or other drugs, dangerous substances or alcohol.

The prohibitions in this policy encompass, but are not limited to use of: narcotics (heroin, morphine, opioids, etc.), cannabis (marijuana, hashish, cannabis-infused products), stimulants (cocaine, crack, diet pills, etc.), depressants (tranquilizers), and hallucinogens (PCP, LSD, “designer drugs,” etc.). This policy prohibits the possession or use of cannabis in the workplace or being under the influence of cannabis, including as a “qualifying patient” under the Illinois Compassionate Use of Medical Cannabis Pilot Program Act during the work day or work activities.



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DRUG-FREE WORKPLACE POLICY

Employees holding a valid CDL are prohibited from operating, navigating, or being in actual physical control of any motor vehicle while using or being under the influence of cannabis.

Drug Testing

To ensure the accuracy and fairness of our testing program, all testing will be conducted at Physicians Immediate care in the Rockford Area, or a similar approved facility outside of the area, according to Substance Abuse and Mental Health Services Administration (SAMHSA) guidelines where applicable and will include a screening test; a confirmation test; the opportunity for a split sample; review by a Medical Review Officer, including the opportunity for employees who test positive to provide a legitimate medical explanation, such as a physician's prescription, for the positive result; and a documented chain of custody.

All drug- testing information will be maintained in separate confidential records.

Each employee, as a condition of employment, will be required to participate in pre-employment, reasonable suspicion and post-accident testing upon selection or request of management. Compliance with this policy is a condition of employment.

The substances that will be tested for are: Alcohol, Amphetamines, Cannabinoids (THC), Cocaine, Opiates, Phencyclidine (PCP), MDMA (Ecstasy), and 6-AM (Heroin Derivative).

An employee is considered to be under the influence of drugs if the employee has a confirmed positive test result for drug use or their metabolites pursuant to federal HHS-certified lab cutoff concentrations or has engaged in conduct evidencing apparent impairment. An employee shall be considered to be under the influence of alcohol if there is a concentration of .02 or more based upon the grams of alcohol per 100 millimeters of blood.

Any employee who tests positive will be immediately removed from duty, and their employment may be terminated permanently.

An employee will be subject to the same consequences of a positive test if he/she refuses the screening or the test, substitutes the specimen with that from another person or sends an imposter, will not sign the required forms or refuses to cooperate in the testing process in such a way that prevents completion of the test.



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Post-Accident

Ringland-Johnson reserves the right to administer post-accident testing on a case by case basis. Such a test will be conducted as soon as practicable after the accident, but not later than 32 hours after the accident for drugs, and not later than 8 hours for alcohol. Ringland-Johnson will make reasonable attempts to obtain a sample from an employee after an accident, as defined below, but any injury should be treated first.

An accident may involve any of the following:

1. Loss of human life;
2. Issuance of a moving traffic citation under state or local law;
3. Medical treatment other than first aid administered away from the scene; or
4. Significant property damage

Reasonable Suspicion

If Ringland-Johnson has reasonable suspicion that an employee has violated any provision of this policy pertaining to drugs, alcohol, or other dangerous substances, the employee shall be required to submit to testing. Reasonable suspicion is defined as: an articulate belief based on specific facts and reasonable inferences that the employee is under the influence of drugs or alcohol, is using drugs or alcohol, or is in possession of or selling drugs or alcohol. Circumstances which may constitute a basis for determining reasonable suspicion may include, but are not limited to:

1. A pattern of abnormal or erratic behavior;
2. A noticeable change in work performance;
3. Direct observation of drug or alcohol use;



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4. Presence of physical symptoms of drug or alcohol use (glassy or blood shot eyes, slurred speech, poor coordination or the odor of an alcoholic beverage on/or about the person or breath or the employee).

Consequences

One of the goals of our drug-free workplace program is to encourage employees to voluntarily seek help with alcohol and; or drug problems. If, however, and individual violates the policy, the consequences are serious.

In the case of applicants, if he or she violates the drug-free workplace policy, the offer of employment may be withdrawn, with no right of re-consideration.

If an employee violates the policy, he or she may be terminated from employment.

Assistance

Ringland-Johnson Construction recognizes that alcohol and drug abuse and addiction are treatable illnesses. We also realize that early intervention and support improve the success of rehabilitation. To support our employees, our drug-free workplace policy encourages employees to utilize the services of qualified professionals in the community to assess the seriousness of suspected drug or alcohol problems and identify appropriate sources of help.

Treatment for alcoholism and/or drug use disorders may be covered by the employee benefit plan. However, the ultimate financial responsibility for recommended treatment belongs to the employee.

Confidentiality

All information received by the organization through the drug-free workplace program is confidential communication. Access to this information is limited to those who have a legitimate need to know in compliance with relevant laws and management policies.

Shared Responsibility

A safe and productive drug-free workplace is achieved through cooperation and shared responsibility. Both employees and management have important roles to play.

All employees are required to not report to work or be subject to duty while their ability to perform job duties is impaired due to on- or off-duty use of alcohol or other drugs.



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In addition, employees are encouraged to be concerned about working in a safe environment.

It is the supervisor's responsibility to inform employees of the drug-free workplace policy.

Communication

Communicating our drug-free workplace policy to both supervisors and employees is critical to our success. To ensure all employees are aware of their role in supporting our drug-free workplace program, all employees will receive a written copy of the policy.

I have read and agree to the terms stated above in the RJC Drug-Free Workplace Policy.

Employee Name (Printed)

Employee Signature

Date

Witnessed By:

Supervisor Name (Printed)

Supervisor Signature

Date

(Employee Copy)



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I have read and agree to the terms stated above in the RJC Drug-Free Workplace Policy.

Employee Name (Printed)

Employee Signature

Date

Witnessed By:

Supervisor Name (Printed)

Supervisor Signature

Date

(Employer Copy)



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ELECTRICAL SAFETY PLAN

Purpose

The purpose of this program is to:

- Demonstrate Our Company's compliance with OSHA electrical safety requirements necessary for the practical safeguarding of employees involved in construction work, found in Subpart K of 29 CFR 1926; and
- Establish specific written procedures to protect the health and safety of all employees.

A written description of the program, including the specific procedures adopted by us, is available at our office for inspection and copying by OSHA and any affected employee.

Ringland-Johnson employees do not perform electrical work. This work is contracted out to qualified electrical contractors.

Administrative Duties

We have designated our Safety Director to implement the program. The Safety Director is responsible for developing and maintaining this written Electrical Safety Plan for Construction. The Safety Director is qualified, by appropriate training and experience that is commensurate with the complexity of the plan, to administer and oversee our electrical safety plan and conduct the required evaluations of plan effectiveness. The Safety Director is responsible for ensuring our employees receive annual training regarding electrical safety and safe work practices for working around electrical equipment.

Equipment Grounding Conductor Program

This written plan is intended to establish and implement specific procedures for an equipment grounding conductor program, to prevent electrical shock, covering:

- All cord sets,
- Receptacles which are not a part of the building or structure, and
- Equipment connected by cord and plug which are available for use or used by employees.

These requirements apply to all Ringland-Johnson construction job sites.

This part of the written plan complies with the requirements of 1926.404(b)(1)(iii). In addition, GFCI protection is to be used at all times.



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ELECTRICAL SAFETY PLAN

Equipment Grounding Conductor Inspection

Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, are visually inspected before each day's use for:

- External defects, such as deformed or missing pins or insulation damage, and
- Indications of possible internal damage.

Equipment found damaged or defective is not to be used until repaired, and is to be removed from service immediately by the person finding it and handed over to the maintenance shop.

Equipment Grounding Conductor Testing

The following tests are performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded:

- All equipment grounding conductors are tested for continuity and are electrically continuous.
- Each receptacle and attachment cap or plug is tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor is connected to its proper terminal.

All required tests are performed:

- Before first use.
- Before equipment is returned to service following any repairs.
- Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over).
- At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage will be tested at intervals not exceeding 6 months.

Our Company does not provide or permit employees to use any equipment which has not met the requirements of this program.

Working Near Electrical Equipment

Our employees do not perform electrical work. Ringland-Johnson shall not permit any employee to work in such proximity (no less than 10 feet) to any part of an electric



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ELECTRICAL SAFETY PLAN

power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by deenergizing the circuit and grounding it or by guarding it effectively by insulation or protective barriers or shields, particularly in confined and enclosed work spaces. Workers shall treat all electrical parts as if they are live. Workers shall avoid wearing conductive clothing and jewelry while working around energized parts.

Adequate lighting must be provided if employees are working in areas with exposed energized parts.

If ladders are used near energized electrical parts, the ladders must have non-conductive side rails (Fiberglass or wood).

When using equipment around overhead electric lines, maintain proper clearance distance. The following chart lists minimum approach distances:

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Controlling Energy Sources

While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts shall be locked out or tagged or both. Follow the procedures in the Lockout/Tagout Energy Control Plan.



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EQUIPMENT OPERATION PROCEDURES

Purpose

It is the policy of this Company to permit only trained and authorized personnel to operate construction equipment. These procedures are applicable to both daily operators, and those who only occasionally use such equipment. This program is under the direction of a competent person, as specified in OSHA 1926, Subpart N and O, for some of the equipment covered here. The competent person is 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. The Safety Director is the competent person in charge of these Equipment Operation Procedures, with operators of specific pieces of equipment being trained to the level of competence for the pieces of machinery with which they work.

The written Heavy Equipment Operation Procedures for Construction establish guidelines to be followed whenever any of our employees work with heavy equipment at Our Company. The rules are established to:

1. Provide a safe working environment,
2. Govern operator use of heavy equipment, and
3. Ensure proper care and maintenance of heavy equipment.

These procedures establish uniform requirements designed to ensure that heavy equipment operation practices are communicated to and understood by the affected employees. These requirements are also designed to ensure that procedures are in place to protect the health and safety of all employees.

List of Equipment

Construction equipment used at this Company's work sites includes the following:

1. Loaders and Backhoes
2. Hi-Lifts
3. Skidsteers
4. Other miscellaneous construction related equipment.



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EQUIPMENT OPERATION PROCEDURES

All equipment used will comply with the manufacturer's specifications and limitations at all times. All attachments used with construction equipment will not exceed the capacity, rating, or scope recommended by the manufacturer.

Modifications or additions to this equipment, which affect the capacity or safe operation, are strictly forbidden without notifying the manufacturer and obtaining written approval. Unauthorized modifications can cause accidents and fatalities. It is policy to notify the manufacturer and obtain written approval from them for any proposed modification. The Safety Director is responsible for obtaining this written approval.

If modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals on the equipment are changed accordingly, to reflect the new specifications to which the equipment can perform. In no case is the original safety factor of the equipment be reduced.

Pre-Operational Procedures

A thorough inspection program can forecast maintenance needs or potential equipment failures or malfunctions. The lack of such a program could result in serious deterioration of the equipment, which might lead to excessive replacement or repair charges as well as increased potential for accidents.

The Company requires operators to perform pre-operational equipment inspections on all types of construction equipment prior to the beginning of each shift in which those pieces of equipment will be used. Operators are to complete their daily inspections according to the manufacturer's recommendations. These inspection procedures will vary by piece of equipment.

The operator is trained to the level of "competent person" for the equipment he or she operates. The operator walks around the equipment looking for defects or problem areas. Components that have a direct bearing on the safety of the piece of equipment and whose status can change from day to day with use must be inspected daily, and when possible, observed during operation for any defects that could affect safe operation.

1. Pre-Operational Site Activity and Inspection - a site inspection to locate site features or activities that may pose a potential hazard during operation of the piece of equipment
2. Pre-Operational (Daily) Walk Around Inspection - a walk around the exterior of the piece of construction equipment, to assess the safety level of attachments, and all other exterior features.



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EQUIPMENT OPERATION PROCEDURES

3. Pre-Start Up (In Cab) Inspection - Check for necessary paperwork, labeling of all switches and controls as to proper function, working order of all lights and other electronic equipment.

Initial Equipment Operation - upon start-up use each shift, ascertain that the piece of equipment is operating as it should and functioning properly.

If any defect or problem is encountered during the preoperational inspection, the piece of equipment is to be posted appropriately as out of service and the Safety Director is to be notified immediately. Remove the key from the piece of equipment and place a **DANGER DO NOT OPERATE** tag on its steering wheel or control lever. The defect or problem discovered must be identified thoroughly in writing, so that the Maintenance Department personnel can pinpoint the trouble immediately and repair it promptly.

Operating Procedures

1. Always stay within the rated load capacity and working radius and specifications of the piece of equipment being used. Under adverse field conditions operators must reduce the load capacity until it is determined the piece of equipment can safely handle the load in question.
2. Only qualified and properly designated people shall operate construction equipment, for which they have been trained.
3. All personnel are to be kept clear of moving equipment or parts of the equipment.
4. No one except personnel necessary for operation is allowed on the equipment when it is in operation.
5. Required periodic inspections include a monthly and an annual inspection.
6. The monthly periodic inspection interval can vary depending on equipment use and site conditions.
7. Inspection records (certification records) of the inspected piece of equipment shall be maintained monthly on critical items in use (as applicable) such as:
 - a. Brakes
 - b. Hooks
 - c. Ropes



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EQUIPMENT OPERATION PROCEDURES

8. The monthly inspection records must include:
 - a. The date of inspection
 - b. The signature of the person who performed the inspection
 - c. The serial number or other identifier of the critical component.
9. The most recent monthly inspection (certification) record must be kept readily available for review and maintained on file until a new one is prepared.
10. The monthly inspection includes those items listed for daily inspections as well as a more detailed and focused inspection of all moving parts and equipment.
11. Equipment is not to be driven up to anyone standing in front of fixed objects.
12. All body parts (hands, arms, head, feet, legs, etc.) are to be kept inside the operator compartment of the piece of equipment, unless a designated hand signal determined to be safe requires extension of a body part outside of the operator compartment.
13. Operators may not block access to fire or emergency exit ways, fire equipment or electrical panels.
14. Under all travel conditions, operate the piece of equipment at a speed that will permit it to be brought to a stop in a safe manner.
15. Stunt driving and horse play are prohibited when operating pieces of construction equipment.
16. Operators are required to report ALL equipment accidents involving personnel, building structures and equipment to the Safety Director, the same day.
17. The operator shall handle loads only within the capacity rating of the equipment.
18. Equipment may not be used for any purpose other than for what it was designed.
19. Construction equipment may not be started or any of its functions or attachments operated from any position other than from the designated operator's position.
20. If the equipment is equipped with seat belts or other restraining devices, the operator must use these devices.



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EQUIPMENT OPERATION PROCEDURES

21. The operator shall look 360 before traveling with any construction equipment, especially when backing up.
22. The operator shall yield the right of way to pedestrians at all times.
23. Operators shall slow down and sound audible warning device (horn) at any locations where vision is obstructed.
24. The operator must keep a clear view of the path of travel and observe for other traffic, personnel and safe clearances.
25. When ascending or descending a grade or incline the operator must proceed slowly and with caution.
26. A piece of equipment is considered to be **ATTENDED** when the operator is less than 25 feet from the equipment which remains in his view and hearing range. Before leaving the operator's position, the operator shall:
 - a. Bring equipment to a complete stop.
 - b. Place directional controls in neutral.
 - c. Apply the parking brake, if applicable.



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EXCAVATION PROCEDURES

Purpose

It is the policy of this Company to permit only trained and authorized personnel to create or work in excavations. These procedures are applicable to both daily workers with excavations and those who only occasionally work with excavations. This program is under the direction of an excavation competent person. **The excavation competent person is 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.** The Superintendent is in charge of all Excavation Procedures, and must ascertain that all employees have been trained to the level of competence for the types of excavations with which they work.

Before Excavating

Before anyone at this Company allows excavating, it is standard procedure to:

1. **Contact the utility companies (the one-call service must be called)** and property owners and ask the utility companies or owners to find the exact location of the underground installations in the area. If the utility companies, or owners cannot establish the location of the utility lines, the excavation may proceed with caution. In this situation, the excavator provides employees with detection equipment or other safe and acceptable means to locate utility installations. In no instance will any excavation proceed until a locator has been to the site and attempted to locate all possible underground utilities.
2. Remove or adequately support objects in the excavation area that could create a hazard to employees. These may include trees, rocks, sidewalks, and other objects.
3. Classify the type of soil and rock deposits at the site as either stable rock, **Type A, Type B, or Type C soil**. The soil classification is based on the results of at least one visual and at least one manual analysis conducted by an excavation competent person. **(Note:** Soil classification is not necessary if the excavation will be sloped to an angle of one and one-half horizontal to one vertical.) Details of the acceptable visual and manual analyses are to be found in Appendix A of the excavation standard.
4. Have the excavation competent person choose the appropriate method for protective support systems, as necessary.



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Protective Support Systems

This Company has the following standard operating procedures regarding protective support systems for excavations, in accordance with safe practices and procedures and OSHA excavation regulations.

1. Each employee in an excavation is protected from cave-ins during an excavation by an adequate protective system designed in accordance with OSHA standards. Protective system options include proper sloping or benching of the sides of the excavation; supporting the sides of the excavation with timber shoring or aluminum hydraulic shoring; or placing a shield between the side of the excavation and the work area. The excavation competent person chooses the most practical design approach for the particular circumstance. The system approach selected will meet the required performance criteria.
2. No protective system is necessary or used if the excavation is made entirely in stable rock, or the excavation is less than 5 feet (1.52 m) in depth **(provided there is no indication of a potential cave-in)**.
3. Protective systems for use in excavations more than 20 feet in depth must be designed by a **registered professional engineer**.

Sloping and Benching

1. When sloping or benching is used to protect against cave-ins, there are four basic options that can be chosen for designing sloping or benching systems. First, if soil classification is not made, then the sides of the excavation can be sloped to an angle not steeper than one and one-half horizontal to one vertical (34 degrees). A slope of this gradation or less is considered safe for any type of soil.
2. The second option for designing a sloping or benching system is to use Appendices A and B of the excavation standard to determine the maximum allowable slope and allowable configurations for sloping and benching systems. These requirements are summarized in Table 1 in the Appendix. The soil type must be determined in order to use this option.
3. Sloping and benching systems can also be designed using other tabulated data approved by a registered professional engineer or by having an engineer design and approve the system to be used.



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4. The excavation competent person will choose the best option for sloping and benching for the job at hand.
5. There are a number of exceptions or special cases to these general sloping and benching guidelines, which will be utilized by the excavation competent person if the conditions meet the exception's requirements. The exceptions and conditions are outlined below:
 - a. In Type A soil, simple slope excavations which are open 24 hours or less (short term) and which are 12 feet high or less in depth may have a maximum allowable slope of 1/2 horizontal to 1 vertical.
 - b. In Type A soil, all excavations 8 feet or less in depth which have unsupported vertically sided lower portions must have a maximum vertical side of 3.5 feet.
 - c. In Type A soil, excavations over 8 feet but less than 12 feet in depth with unsupported vertically sided lower portions must have a maximum allowable slope of 1H:1V and a maximum vertical side of 3.5 feet.
 - d. In Type A soil, excavations 20 feet or less with vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of 3/4H:1V. The support or shield system must extend at least 18 inches above the top of the vertical side.
 - e. In Type B soil, all excavations 20 feet or less 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. The excavation shall have a maximum allowable slope of 1H:1V.
 - f. In Type C soil, all excavations 20 feet or less 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. The excavation shall have a maximum allowable slope of 1-1/2H:1V.
6. When an excavation contains layers of different types of soils, the general sloping requirements do not apply. The excavation must be sloped according to Table 2 in the Appendix.

Timber Shoring

1. Designs for timber shoring in trenches for Company work sites are determined using one of four methods: using the requirements set forth by OSHA in Appendices A and C of the excavation standard; using data provided by the manufacturer of the support system; using other tabulated data approved by an engineer; or having a registered professional engineer design the system. The excavation competent person chooses from among these options.



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2. The design specifications for timber shoring provided by OSHA may be found in Tables 3, 4, and 5 in the Appendix. These tables refer to the actual dimensions and not nominal dimensions of the timber. If the Company chooses to use nominal size shoring, we use the additional tables found in Appendix C of the standard.
3. These OSHA design specifications apply only to trenches that do not exceed 20 feet. The soil type in which the excavation is made must be determined in order to use the OSHA data. The specifications do not apply in every situation experienced in the field; the data were developed to apply to most common trenching situations. If the specifications do not apply to the situation encountered in the field, the Safety Director will make a determination of what approach to use to allow safe protective support of the excavation.

Aluminum Hydraulic Shoring

1. Designs for aluminum hydraulic shoring are based upon manufacturer's tabulated data and are in accordance with the manufacturer's specifications, recommendations, and limitations. Deviations from the manufacturer's specifications, recommendations, or limitations are only allowed upon written approval of the manufacturer. The written approval is kept at the job site during construction of the protective system.
2. If the manufacturer's tabulated data cannot be utilized, the aluminum hydraulic shoring is designed using the OSHA specifications found in Appendix D of the excavation standard. Before using the OSHA data, the soil type must be determined. Other options for the design of aluminum hydraulic shoring systems include using other tabulated data approved by an engineer or having a registered professional engineer design the system.

General Requirements for Excavations

The following rules are to be followed at all times by all employees, and or sub-contractors working on, in or near excavations, as applicable:

1. Employees exposed to public vehicular traffic must wear **warning vests** or other suitable garments made of retro-reflective or other high-visibility material. All employees are required to also wear **hard hats**.
2. The excavation competent person inspects the excavation and the adjacent areas on a daily basis for possible cave-ins, failure of protective systems and



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equipment, hazardous atmospheres, or other hazardous conditions. Inspections are also required after the occurrence of any natural (such as rain) or manmade events (such as blasting) that could increase the potential for hazards. Employees may not begin work until after being informed by the excavation competent person that these inspections are complete.

3. A warning system should be used to alert operators of heavy equipment and other employees at the work site of the edge of an excavation.
4. Adequate protection should be provided to protect employees from falling rock, soil, or other materials and equipment. Protection is provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.
5. Employees are not permitted under loads that are handled by lifting or digging equipment. Employees are not allowed to work in the excavation above other employees unless the lower level employees are adequately protected.
6. While the excavation is open, underground installations should be protected, supported, or removed as necessary to safeguard employees. Adjacent structures are supported to prevent possible collapse.
7. Employees are not permitted to work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken. Diversion ditches, dikes, or other means are used to prevent surface water from entering an excavation and to provide drainage to the adjacent area.
8. Before an employee enters an excavation greater than 4 feet in depth, the excavation competent person or other excavation competent person must test the atmosphere where oxygen deficiency or a hazardous atmosphere exists or could reasonably exist. Emergency rescue equipment is readily available and attended when hazardous atmospheric conditions exist or may develop.
9. Sufficient means for exiting excavations 4 feet deep or more, must be provided and must be within 25 feet of lateral travel for employees.
10. Guardrails must be provided if there are walkways or bridges crossing over an excavation.



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Appendix

"Stable rock" refers to natural solid mineral matter which can be excavated with vertical sides and remain intact while exposed.

"Type A soil" is cohesive with an unconfined compressive strength of 1.5 tons per square foot (tsf). Type A soils include clay, silty clay, sandy clay, clay loam, caliche, hardpan, and sometimes silty clay loam and sandy clay loam. No soil should be classified as Type A if it is fissured; subject to vibration from traffic, pile driving, or similar effects; previously disturbed; or part of a sloped, layered system where the slope is four horizontal to one vertical or greater.

"Type B soil" is cohesive soil with an unconfined compressive strength greater than .5 tsf but less than 1.5 tsf. Type B soils include granular cohesionless soils like angular gravel, silt, silt loam, sandy loam, and sometimes silty clay loam and sandy clay loam; previously disturbed soils that are not type C; fissured soils and soils subject to vibration that would otherwise be classified as 'Type A; dry rock that is not stable; and material that is part of a sloped, layered system where the layers dip on a slope less steep than four horizontal to one vertical.

"Type C soil" is cohesive soil with an unconfined compressive strength of .5 tsf or less. Type C soils include granular soils such as gravel, sand, and loamy sand; submerged soil; soil from which water is freely seeping; submerged rock that is not stable; or material in a sloped, layered system where the layers dip into the excavation at a slope of four horizontal to one vertical or steeper.

Confined Space Hazardous Atmospheres

Where oxygen deficiency 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 are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet in depth.



EXCAVATION PROCEDURES

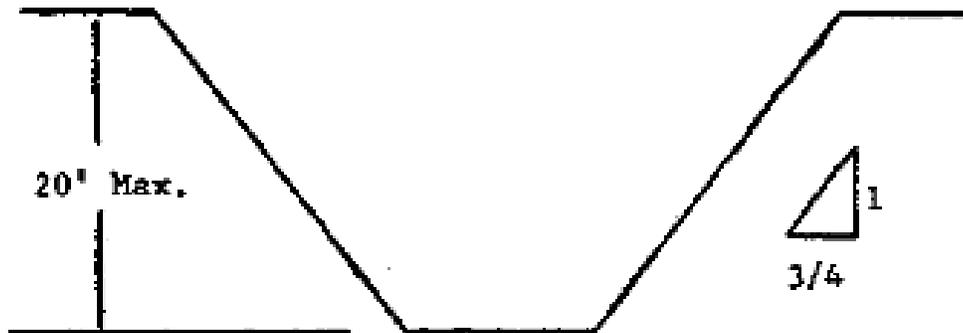
Table 1 Maximum Allowable Slopes		
SOIL OR ROCK TYPE	MAX SLOPE (Excavations less than 20 feet deep)	
	Stable Rock	Vertical
Type A	¾:1	53 degrees
Type B	1:1	45 degrees
Type C	1½:1	34 degrees

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

Excavations made in Type A soil.

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of ¾:1.

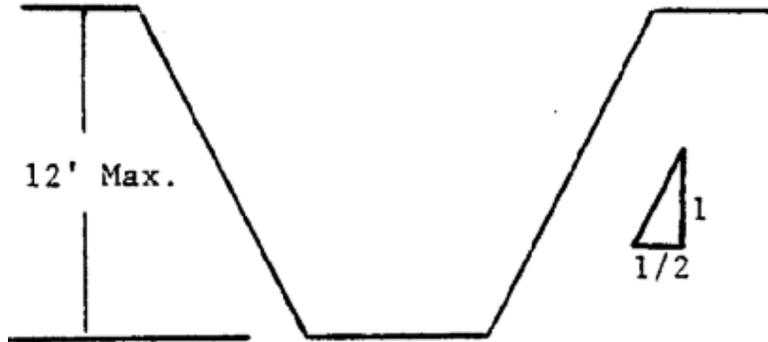


SIMPLE SLOPE - GENERAL



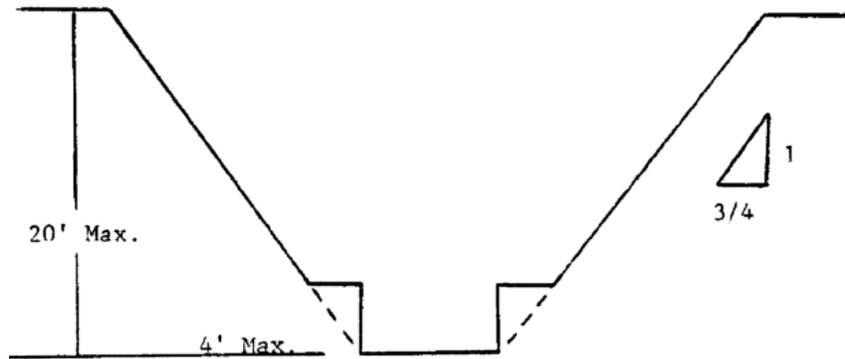
EXCAVATION PROCEDURES

Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of 1/2:1.



SIMPLE SLOPE - SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 3/4 to 1 and maximum bench dimensions as follows:



SIMPLE BENCH

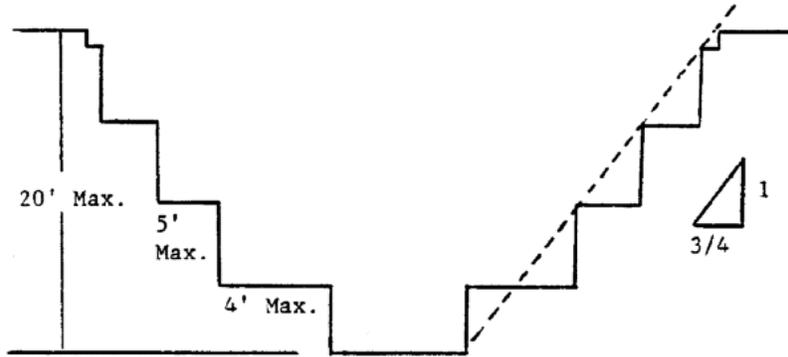


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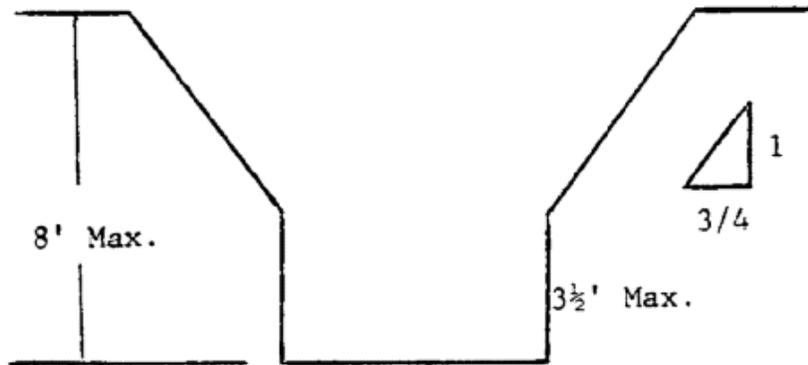
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MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3 ½ feet.



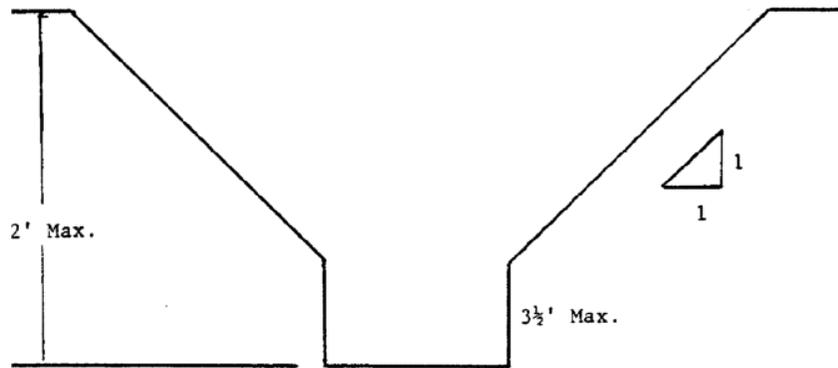
UNSUPPORTED VERTICALLY SIDED LOWER PORTION - MAXIMUM 8 FEET IN DEPTH



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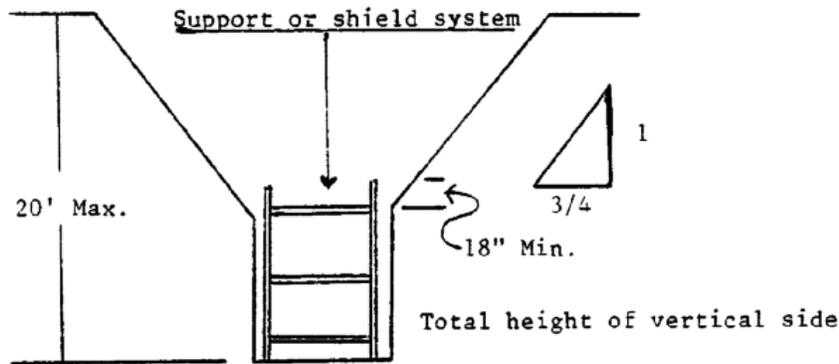
EXCAVATION PROCEDURES

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 3 ½ feet.



UNSUPPORTED 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 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)

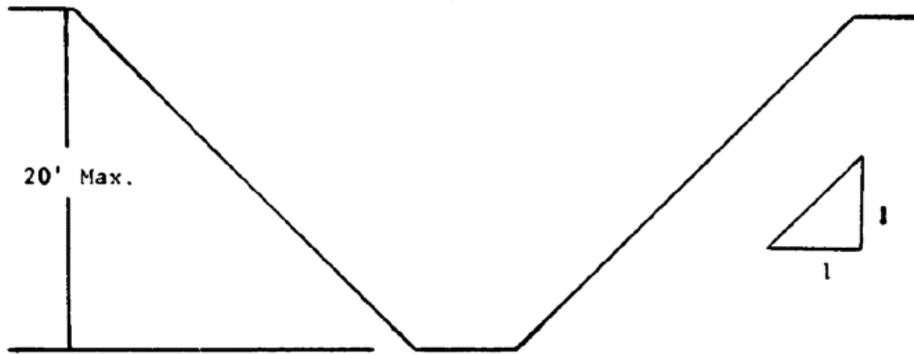
4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under [§1926.652\(b\)](#).



EXCAVATION PROCEDURES

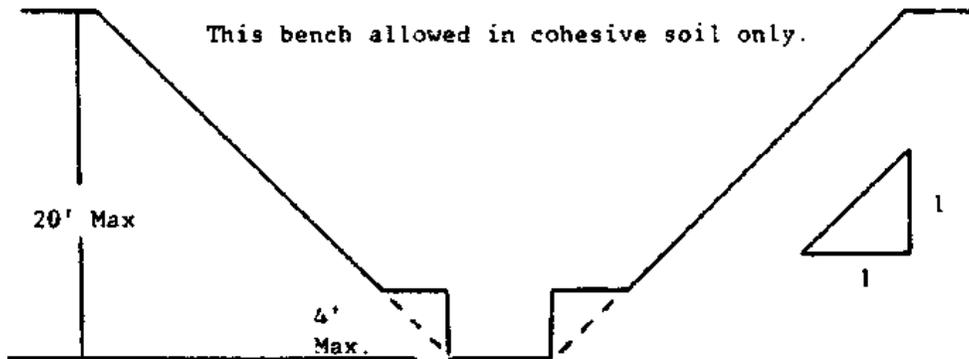
Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.



SIMPLE SLOPE

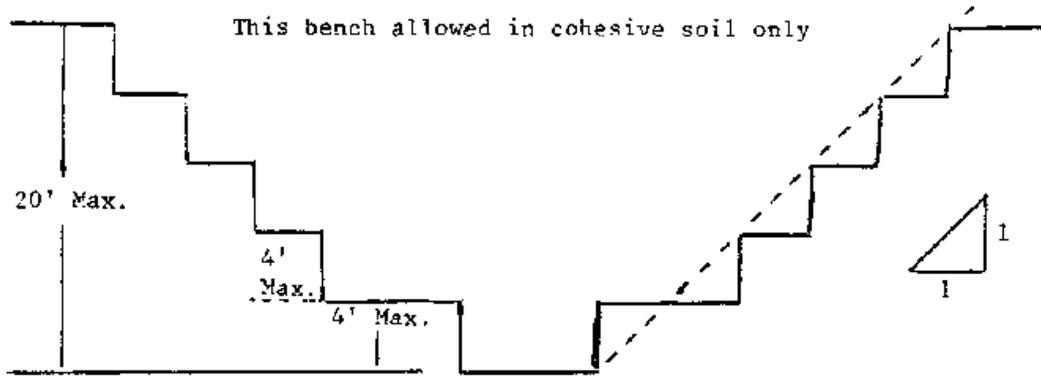
2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:



SINGLE BENCH

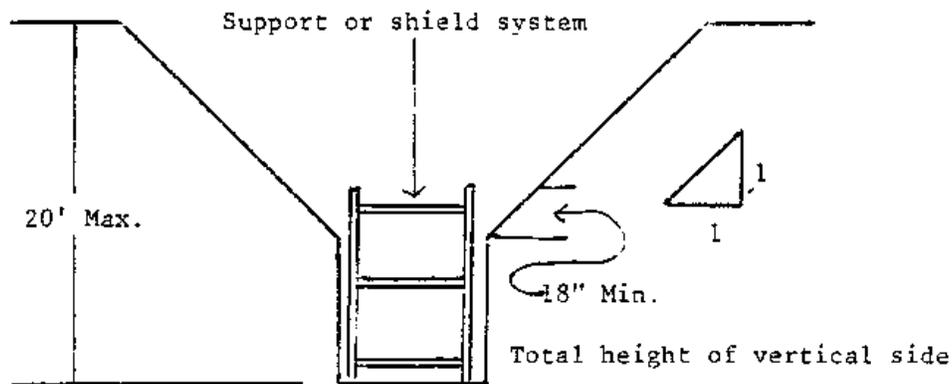


EXCAVATION PROCEDURES



MULTIPLE BENCH

- 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.



VERTICALLY SIDED LOWER PORTION

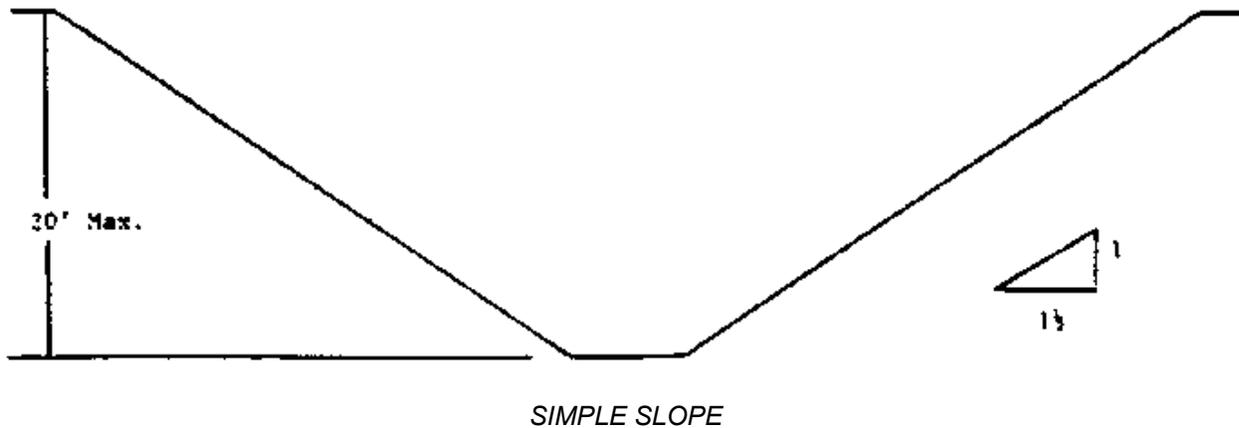
- All other sloped excavations shall be in accordance with the other options permitted in [§1926.652\(b\)](#).



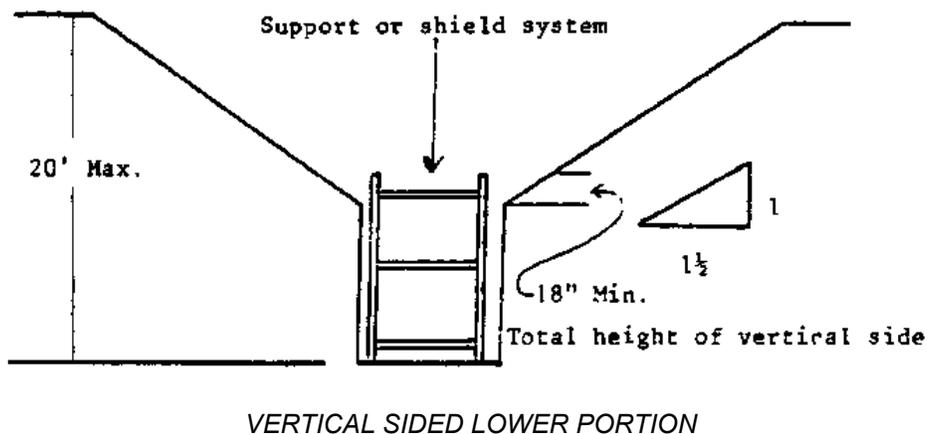
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Excavations Made in Type C Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1 ½:1.



2. 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 ½:1.



3. All other sloped excavations shall be in accordance with the other options permitted in [§1926.652\(b\)](#).



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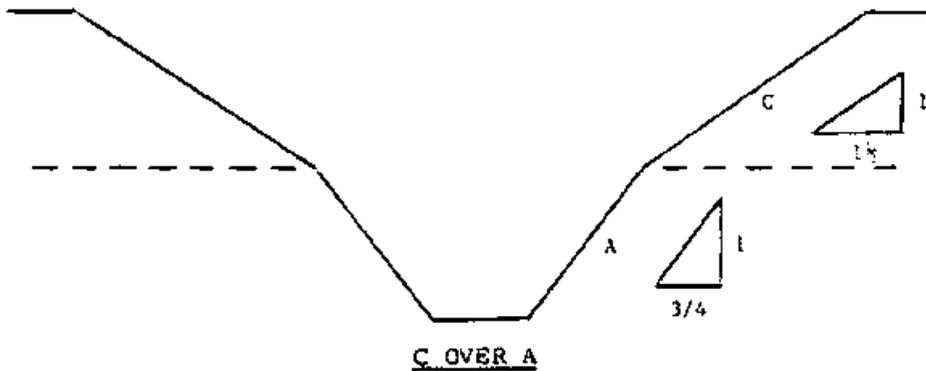
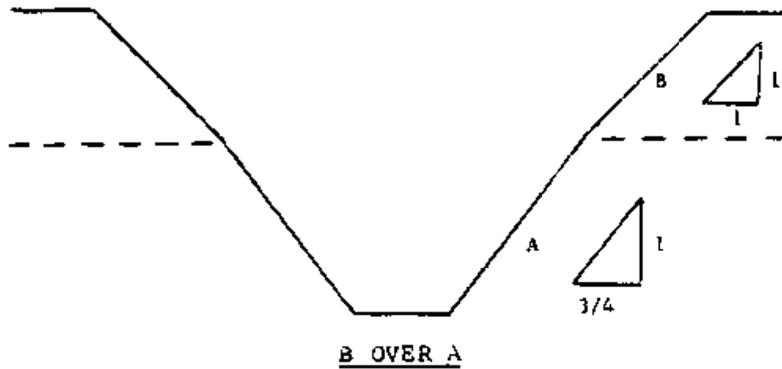
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Excavations Made in Layered Soils

1. 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.



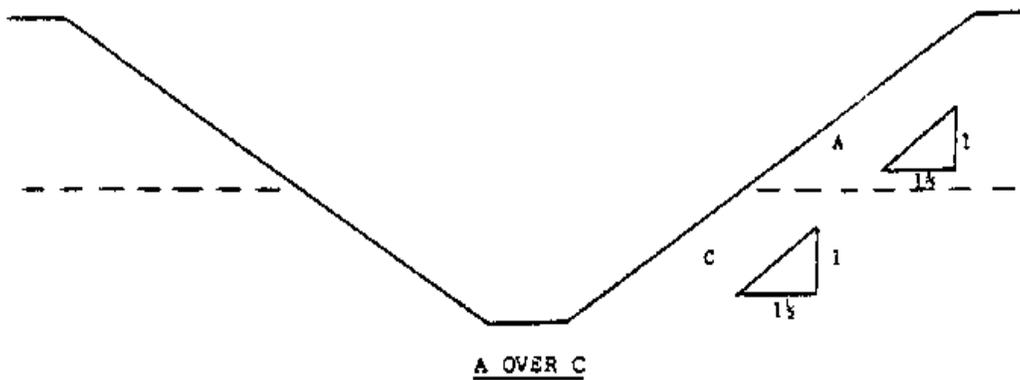
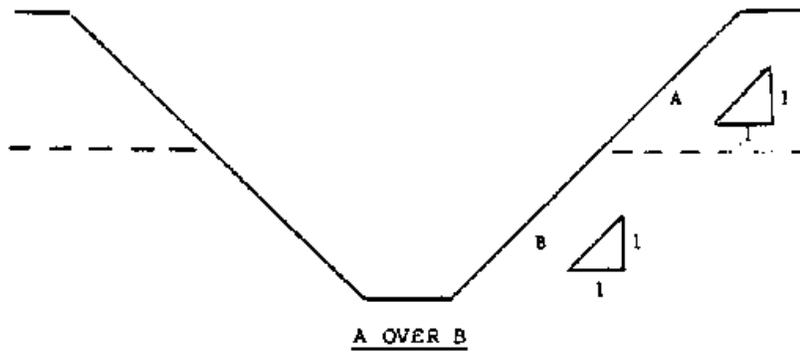
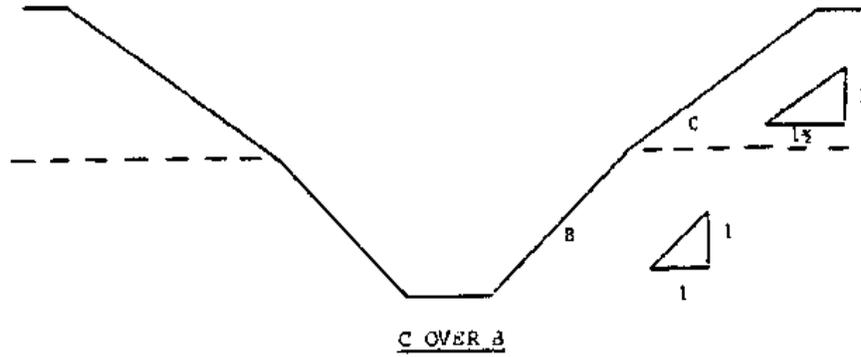


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EXCAVATION PROCEDURES



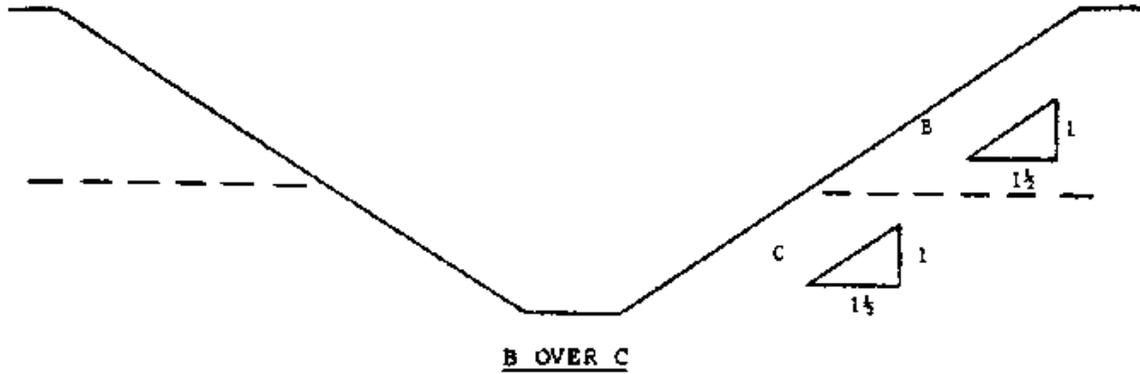


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2. All other sloped excavations shall be in accordance with the other options permitted in [§1926.652\(b\)](#).



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FALL PROTECTION PLAN

Purpose

This Company is dedicated to the protection of its employees from on-the-job injuries. All employees of this Company have the responsibility to work safely on the job. The purpose of this plan is to:

1. Supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job.
2. Ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of erection.

This plan is based on 1926, Subpart M, Fall Protection requirements. See a copy of the regulations for full details on all of its requirements.

This plan is designed to enable employees to recognize fall hazards and to establish procedures that are to be followed to prevent falls to lower levels or through holes and openings in walking/working surfaces. Each employee will be trained in these procedures and strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify the foreman of the concern and the concern is to be addressed before proceeding.

Safety policy and procedure on any one project cannot be administered, implemented, monitored, and enforced by any one individual. The total objective of a safe, accident free work environment can only be accomplished by a dedicated, concerted effort by every individual involved with the project from management down to the last employee. Employees must understand:

1. Their value to the Company.
2. Costs of accidents (monetary, physical, and emotional).
3. Objective of the safety policy and procedures.
4. Safety rules that apply to the safety policy and procedures.
5. Their individual role in administering, implementing, monitoring, and compliance of their safety policy and procedures.



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FALL PROTECTION PLAN

This allows for a more personal approach to compliance through planning, training, understanding and cooperative effort, rather than by strict enforcement. If for any reason an unsafe act persists, strict enforcement will be implemented. It is the responsibility of the Safety Director to implement this Fall Protection Plan, and is responsible for continual observational safety checks of their work operations and to enforce the safety policy and procedures. The Superintendent/Foreman also is responsible for correcting any unsafe acts or conditions immediately. It is the responsibility of the employee to understand and adhere to the procedures of this plan and to follow the instructions of the Foreman. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or acts that may cause injury to either themselves or any other employees.

Workplace Assessment and Fall Protection System Selection

Each job-site Foreman must assess the workplace to determine if the walking/working surfaces on which employees are to work have the strength and structural integrity to safely support workers. Once the person in charge determines that the surface is safe for employees to work on, then he or she must choose the fall protection for a given work operation if a fall hazard is present. The person in charge must make a reasonable effort to anticipate the particular hazards to which employees may be exposed in the course of the job. This assessment includes:

1. Inspecting the area to determine what hazards exist or may arise during the work in that area. Anticipate the need to work at heights and plan work activities accordingly. Careful planning and preparation lay the necessary groundwork for an accident-free workplace.
2. Identifying hazards correctly and selecting appropriate protection measures and equipment (see table below). This information must be communicated to customers, other contractors, and suppliers.

Anchorage points for personal fall arrest systems should be fabricated or designed into structural members and perimeter lines installed before those members are lifted into position, where possible. All anchorage points must meet the requirements as set forth by OSHA in regards to strength, and must meet the applicable ANSI and ASTM requirements before use:

1. Giving specific and appropriate instructions to prevent exposure to unsafe conditions.



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FALL PROTECTION PLAN

2. Ensuring employees follow procedures given and understand the training provided.
3. Discovering what safety procedures/equipment subcontractors have chosen to complete their work. Provide corresponding information to subcontractors.

General Worksite Policy

1. If any one of the conditions described in the Workplace Assessment is not met for the area or piece of equipment posing a potential fall hazard, then do not perform that work until the condition is met. If you cannot remedy the condition immediately, notify a supervisor of the problem and utilize a different piece of equipment or work in a different area, according to the situation.
2. If the situation calls for use of fall protection devices such as harnesses or lanyards because the fall hazard cannot be reduced to a safe level, then the employee must don such protective equipment before beginning the work and use it as intended throughout the duration of the work.
3. Only employees trained in such work are expected to perform it.
4. All places of employment, job sites shall be kept clean and orderly and in a sanitary condition.
5. All walking/working surfaces must be kept in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable.

Whenever there is a wall opening such as a doorway or window, floor hole, stairway opening or any other unprotected side or edge, workers must be protected from a fall of six feet or more.

“Conventional Fall Protection Systems” (CFPS) are the primary means by which falls protection is to be provided. One of the following methods of compliance **MUST** be in place:

Guardrail System

A typical guardrail system must meet the following requirements:



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1. Top rail must be approximately 42 inches above the walking/working surface (39" +/- 3"). Mid rails must be placed midway between the top rail and the walking/working surface, usually about 21 inches. Vertical post shall be constructed of 2" x 4" lumber spaced not more than 8 feet apart. Top rails must be capable of withstanding a 200 lb. Force in a downward and outward direction while mid rails must withstand a 150 lbs. force.
2. Toe boards capable of withstanding a 50 lbs. force MUST be installed on all guardrails and/or when there is any danger of objects falling from the work surface.
3. All surfaces must be kept smooth to prevent splinters, punctures, lacerations and snagging of clothing.
4. Rails must be kept from extending past their posts so that employees and equipment do not hit them.
5. In hoisting areas, use a chain, a gate or removable guardrail to protect the entrance.
6. Guardrail systems should go all the way around any holes they are protecting.
7. Ramps and runways should also have a guardrail system around all unprotected edges.
8. Where holes are used as a point of access, place a gate or removable guardrail to protect against fall hazards.

“Personal Fall Arrest System” (PFAS)

A PFAS MUST consist of an anchor point capable of a 5,000 lb. Force, a shock absorbing lanyard and a body harness with the “D” ring in the back.

Safety Net System

If a safety net system is used, it must meet OSHA standard 1926.502(c).

IF CONVENTIONAL FALL PROTECTION SYSTEMS CANNOT BE USED BECAUSE THEY ARE INFEASIBLE OR CRATE A GREATER HAZARD, ALTERNATIVE SAFE WORK PRACTICES MUST BE USED. IF THIS IS THE CASE, DO NOT PROCEED WITH ANY WORK UNLESS AN ADEQUATE FALL PROTECTION PLAN IS



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IMPLEMENTED TO ENSURE THAT THE EMPLOYEE'S RISK TO FALL HAZARDS IS REDUCED OR ELIMINATED ADEQUATELY.

Whenever an open hole, 2 inches or more in its least dimension, exists, covers must be used. The cover must be secured to prevent accidental displacement and MUST support at least twice the weight that would be placed on it by workers, equipment or materials. All covers shall color coded or marked with the word "HOLE" or "COVER" to provide warning of the hazard.

Scaffold/Decking

Scaffolding and/or decking is to be designed by the supplier's qualified engineer. System to be designed for the applied loads.

1. Scaffolding to be erected by trained employees.
2. Completed decking to be inspected by a competent person.
3. When erecting scaffolding/decking, proper ladders are to be secured and moved as necessary for safe access to the elevated decking. Ladders are to have extended side rails, 3'-0" above the landing and secured top and bottom. (Ladders damaged during use are to be removed or repaired immediately).



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FALL PROTECTION PLAN

FALL PROTECTION & RESCUE HARNESS DONNING INSTRUCTIONS

Step 1

Getting Started
Hold harness by back D-ring which is held in place by a D-ring pad, make certain straps are not twisted.



Step 2

Shoulder Straps
Slip harness over arms and onto shoulders. Make certain all straps are not tangled and hang freely. Shoulder straps should be kept vertical, not pulled into center of body.



Step 3

Leg Straps
Grab dark blue leg straps and connect to buckles attached to yellow straps on each hip (see photos below for your specific buckle type). Pass excess strap through loop keepers. Leg straps should fit snugly.



Step 4

Chest Strap
Attach chest strap by passing male buckle through female buckle (see buckle type photo below for further details). Strap should be six inches below top of shoulders. Pass excess strap through loop keeper.



Step 5

Adjust harness to fit snugly.

Shoulders:
To tighten, pull up on free end of straps as shown, to loosen, push down on parachute adjuster buckle frame. Straps should be adjusted to same length.

Chest Strap:
To tighten, pull free end of strap, to loosen, push on strap from free end through adjuster buckle and take up slack by pulling on adjuster buckle. To position, slide keeper up or down shoulder strap.

Leg Straps:
See photos at left for your type of leg adjuster buckle.

Back D-ring:
Center between shoulder blades, slide D-ring and pad up or down along the webbing to position.



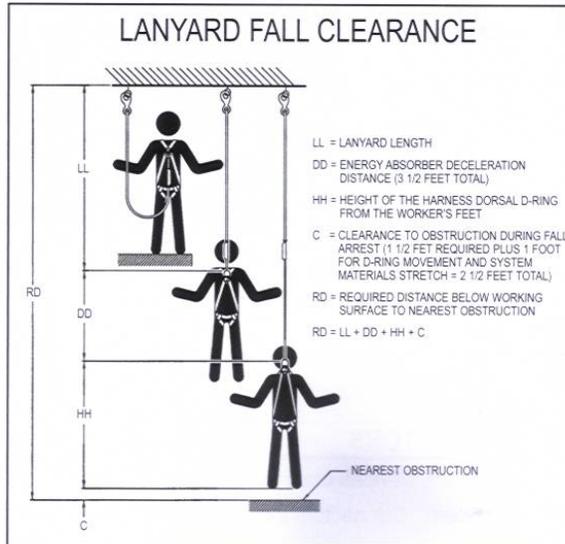

A properly donned and adjusted full body harness will effectively distribute impact forces throughout your body and provide appropriate support during suspension and rescue following a fall.



FALL PROTECTION PLAN

CALCULATING FALL CLEARANCE

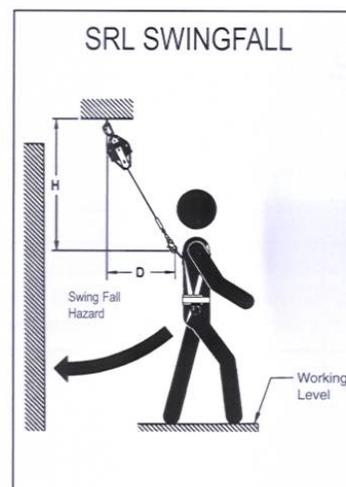
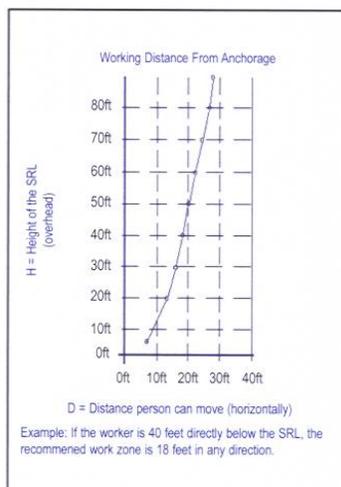
When setting up and using a personal fall arrest system, fall clearance and swing fall hazards are critical issues. Should a fall occur, there must be sufficient clearance below the user to arrest the fall before the user strikes the ground or any other object. The user of the equipment must determine if the system will arrest the fall within the available clearance. Some factors that affect this determination include anchorage location, type and length of connecting system (lanyard, self-retracting lifelines, rope grab), deceleration distance (the elongation of the decelerating device when deployed -- allow 3.5'), worker height, movement of harness attachment element (allow a safety factor of 2.5 ft.).



For lanyard type connecting systems, see the illustration for estimating fall clearance distances. For SRLs, a minimum of 6' of clearance from the working level to the lower level is recommended. See user instructions supplied with each product for complete details on fall clearances.

SWING FALL HAZARD

Swing falls occur when the anchorage point is not directly above the point where a fall occurs. The force of striking an object while swinging (horizontal speed of the user due to pendulum effect) may cause serious injury. In a swing fall, the total vertical fall distance will be greater than if the user had fallen when directly below the anchorage point. The user must therefore account for an increase in the total free fall distance. SRLs



provide greater horizontal and vertical mobility than lanyards, increasing the opportunity for swing falls. See the adjoining chart for recommended horizontal working distances for SRLs. Minimize swing falls by working as close to directly below the anchorage point as possible.

See user instructions supplied with each product for complete details on swing fall.



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EQUIPMENT INSPECTION AND MAINTENANCE

Conscientious inspection of all fall protection equipment is essential to ensure product performance and the safety of the user.



Inspecting frequency

- Equipment should be inspected by the user before each use (OSHA 1910.66, 1926.502 and ANSI Z359.1).
- Formal inspection should be performed annually by a competent person (ANSI Z359.1).
- After fall arrest, equipment shall not be used again until inspected and determined by a competent person to be undamaged and suitable for reuse (OSHA 1910.66, 1926.502 and ANSI Z359.1).

Inspections should be recorded in a centralized logbook that includes the serial number, date of purchase, dates of inspection, servicing performed and authorized signatures.

Inspection guidelines

Hardware — Inspect hardware (including snap hooks, D-rings and buckles) for damage. Check for distortion, corrosion, burrs, cracks and worn parts. Inspect mechanical devices for correct assembly and operation. (For example, SRLs should retract and lock up.)

Webbing — Inspect webbing for frays, cuts or broken fibers. Check for tears, abrasion, mold, burns, heavy soiling or discoloration. Inspect stitching for damage. Inspect impact indicators (if present).

Wire rope, synthetic rope — Inspect for cuts, kinks, broken wires and fibers, corrosion, chemical contact and severely abraded areas. Inspect impact indicators (if present).

Labeling — All labels must be present and fully legible.

If inspection or operation reveals a defective condition, remove the product from service and destroy it or contact an authorized service center for repair.

Maintenance and Storage

Most webbing and hardware items can be washed with mild soap and detergent, water and a rag. Excess grease, dirt and grime should be removed. The equipment should be left to drip dry out of direct sunlight. Some hardware, if stiff or sticking, can be lubricated. However, any hardware that comes in contact with webbing should be free from grease or solvent. Additional servicing and maintenance should be performed only by factory authorized service centers.

Equipment should be stored in a cool, dry and clean environment that is out of direct sunlight. Protective bags that come with the equipment should be used.

Refer to manufacturer's instructions for complete details on inspection, storage and maintenance.



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Controlled Access Zone

Decking is a controlled access zone in which the use of conventional fall protection systems – guardrail, personal arrest or safety net to protect employees may be temporarily suspended. Only authorized employees may work in the controlled access zone!

Perimeter guardrails and toe boards are to be installed as quickly as decking allows. All deck openings to have perimeter guardrails.

Controlled access zones, when created to limit entrance to areas where leading edge work and other operations are taking place, must be defined by a control line or by any other means that restrict access. Control lines shall consist of ropes, wires, tapes or equivalent materials, and supporting stanchions, and each must be:

1. Flagged or otherwise clearly marked at not more than 6-feet (1.8 meters) intervals with high-visibility materials.
2. Rigged and supported in such a way that the lowest point (including sag) is not less than 39 inches (1 meter) from the walking/working surface and the highest point is not more than 45 inches.
3. Strong enough to sustain stress of not less than 200 pounds. Control lines shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
4. Control lines also must be connected on each side to a guardrail system or wall.

Leading Edge Workers Within the Controlled Access Zone

Only designated employees can work the leading edge.

1. Control lines must define the work area. (Control line supports connected by rope with caution flags)
 - a. Control lines shall be erected not less than 6 feet from the unprotected or leading edge.
 - b. Control lines must be moved with the progress of the decking.

Hoist Landing Platforms

1. The platform must have side guardrails, toe boards and a removable end cable with warning flags.



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2. Each employee in a hoist area must be protected from falling 6 feet either by guardrails or a personal fall arrest system.
3. If guardrail systems (or chain gate or guardrail) or portions thereof must be removed to facilitate hosting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system.

Ramps, Runways and Other Walkways

Each employee using ramps, runways, and other walkways shall be protected from falling 6 feet (1.8 meters) or more by guardrail systems.

Holes or Openings in Completed Decks

1. All holes are to be protected by guardrails and toe boards or completely covered with plywood secured to the concrete.
2. All covered floor holes to be marked "Danger-Hole".

Employees working below the pouring decks in areas where guardrails have been temporarily removed must wear a personal arrest harness secured to a concrete column or approved scaffolding. The device must limit the fall to 6 feet.



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The following table lists the type of fall protection from which a job site foreman may choose to protect workers from specific fall hazards.

<u>TYPE of FALL HAZARD</u>	<u>TYPE OF FALL PROTECTION</u>
<u>(6 Feet or Greater)</u>	
Ramps, runways, and other walkways.	Guardrails.
Excavations.	Guardrail Systems when edges are not readily seen.
Hoist Areas.	Guardrail Systems.
	Personal Fall Arrest System.
Holes.	Covers must be provided.
Formwork and Reinforcing Steel.	Personal Fall Arrest System.
	Safety Net System.
	Positioning Device System.
Leading Edge Work.	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
Unprotected Sides and Edges	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
Overhand Brick Laying and Related Work	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
	Controlled Access Zone.
Roofing Work – Steep Slope (Greater than 4 in 12)	Guardrail System with toeboards.
	Safety Net System.
	Personal Fall Arrest System.
Precast Concrete Erection	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
Wall Openings	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
Residential Construction	Guardrail System.
	Safety Net System.
	Personal Fall Arrest.



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<u>TYPE of FALL HAZARD</u>	<u>TYPE OF FALL PROTECTION</u>
<u>(6 Feet or Greater)</u>	
Roofing work – low slope.	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
	Combination Warning Line/Guardrail.
	Combination Warning Line/Personal Fall Arrest System.
	Combination Warning Line/Safety Monitoring System.
	(On roofs of 50 ft in width or less, safety monitoring system alone can be used.)
Other walking & working surfaces.	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
Dangerous Equipment	Guardrail System.
	Safety Net System.
	Personal Fall Arrest System.
Protection from FALLING objects.	Hard Hat.
	Toeboards, screens, or guardrails to prevent objects from falling from higher levels.
	Canopy Structures that keep objects from edge of higher level so they will not accidentally fall.
	Barricade Areas to which objects could fall and prohibit employees from entering barricaded area.

Proper Fall Protection Equipment Selection



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Any and all equipment that is used for fall protection, such as anchorage points, harnesses, lanyards, self retracting lifelines, stationary lifelines, stanchions, etc., must meet the minimum requirements as stated in the ANSI and ASTM standards.

All equipment that is purchased must be properly certified and meet the above stated requirements prior to use. The safety director is responsible to make sure that only the proper equipment is available for use.

All equipment shall be checked on a daily basis, and prior to use to ensure that equipment is fit to be used. All damaged equipment shall be returned to the main office immediately.

Anchorage used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:

1. As part of a complete personal fall arrest system which maintains a safety factor of at least two; and
2. Under the supervision of a qualified person.
3. Personal fall arrest systems, when stopping a fall, shall:
 - a. Limit maximum arresting force on an employee to 1800 pounds when used with a body harness;
 - b. Be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level;
 - c. Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m); and,
 - d. Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.

When employees use personal fall arrest systems, prompt rescue services must be available or they must be able to rescue themselves should a fall occur.

If leading edge work, pre-cast concrete erection work, or residential construction work is involved in a project and conventional fall protection (e.g., guardrail systems, safety net systems, personal fall arrest systems, etc.) is infeasible or creates a greater hazard, this fall protection plan must demonstrate that fact and other measures must be devised.

Work Procedures



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1. If any one of the conditions described in the Workplace Assessment is not met for the area or piece of equipment posing a potential fall hazard, then do not perform that work until the condition is met. If you cannot remedy the condition immediately, notify a supervisor of the problem and utilize a different piece of equipment or work in a different area, according to the situation. If a site specific plan is necessary, a competent person will draft a plan.
2. If the situation calls for use of fall protection devices such as harnesses and lanyards, because the fall hazard cannot be reduced to a safe level, then the employee must don such protective equipment before beginning the work and use it as intended throughout the duration of the work.
3. Only employees trained in such work are expected to perform it.
4. All places of employment, job sites shall be kept clean and orderly and in a sanitary condition.
5. All walking/working surfaces must be kept in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable.

Training Program

Under no circumstances shall an employee work in areas where they might be exposed to fall hazards, do work requiring fall protection devices, or use fall protection devices until he/she has successfully completed this Company's fall protection training program. This training will be documented and placed in the company safety file.

The training program includes operational training on recognition and avoidance of unsafe conditions and the regulations applicable to their work environment for each specific fall hazard the employee may encounter on the job.

The training program will be given by a "competent person" qualified in the following areas and must cover:

1. The nature of fall hazards in the work area.
2. Selection and use of personal fall arrest systems, including application limits, proper anchoring and tie-off techniques, estimation of free fall distance (including



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determination of deceleration distance and total fall distance to prevent striking a lower level), methods of use, and inspection and storage of the system.

3. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
4. The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.
5. The role of each employee in the safety monitoring system when this is used.
6. The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
7. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
8. The role of employees in fall protection plans.
9. The standards contained in Subpart M of the construction regulations.

Retraining of employees shall be provided when:

1. Deficiencies in training have been noted.
2. Work conditions change.
3. Fall protection equipment or systems change.

Enforcement

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The jobsite superintendent, as well as management, reserves the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

Incident Investigation



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All accidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any safety program that documentation take place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

In the event that an employee falls or there is some other related, serious incident (e.g., a near miss) occurs, this plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.



FIRE PROTECTION & PREVENTION PROGRAM

Purpose

This Fire Protection & Prevention Program is in place at this Company to document the fire protection program to be followed throughout all phases of any construction and demolition work done by this Company, and provides for fire protection and prevention as specified in OSHA Part 1926, Subpart F, Fire Protection & Prevention. This plan lists the following information:

- Basic Fire Protection Elements
- Basic Fire Prevention Elements
- Other Fire Protection & Prevention Elements

Basic Fire Protection Elements

Firefighting Equipment

1. There will be no delay in providing the necessary equipment when fire hazards occur at a worksite.
2. Access to all available firefighting equipment will be maintained at all times.
3. All firefighting equipment will be provided by the Company and will be conspicuously located.
4. All firefighting equipment will be periodically inspected and maintained in operating condition. Defective equipment will be immediately replaced. All fire extinguishers shall be visually checked on a monthly basis, and will receive an annual inspection (maintenance) by an outside service. All fire extinguishers shall have a current tag designating the last annual inspection. All defective or discharged extinguishers shall be removed from the site and immediately replaced.
5. As warranted by the project, we will provide a trained and equipped firefighting organization (Fire Brigade) to assure adequate protection to life.

Portable Firefighting Equipment

Fire Extinguishers and Small Hose Lines

1. A fire extinguisher, rated not less than 2A, 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 area to the nearest fire extinguisher



FIRE PROTECTION & PREVENTION PROGRAM

will not exceed 100 feet. (One 55-gallon open drum of water with two fire pails may be substituted for a fire extinguisher having a 2A rating.)

2. A 1/2-inch diameter garden-type hose line, not to exceed 100 feet in length and equipped with a nozzle, may be substituted for a 2A-rated fire extinguisher, providing it is capable of discharging a minimum of 5 gallons per minute with a minimum hose stream range of 30 feet horizontally. The garden-type hose lines will be mounted on conventional racks or reels. The number and location of hose racks or reels will be such that at least one hose stream can be applied to all points in the area.
3. Extinguishers and water drums that are subject to freezing will be protected from freezing.
4. A fire extinguisher rated not less than 10B will be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the jobsite.
5. Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.
6. Portable fire extinguishers will be inspected periodically and maintained in accordance with NFPA standard No. 10A-1970, Maintenance and Use of Portable Fire Extinguishers.
7. Only fire extinguishers which have been listed or approved by a nationally recognized testing laboratory will be used to meet the requirements of this subpart.

Employment and Training

1. Where the Company has provided portable fire extinguishers for employee use in the workplace, we will also familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting and conduct fire prevention training annually.
2. The Company will assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.



FIRE PROTECTION & PREVENTION PROGRAM

3. The Company will assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. We will record the annual maintenance **date and retain** this record for one year after the last entry or the life of the shell, whichever is less. The record will be available to OSHA upon request.

Basic Fire Prevention Elements Ignition Hazards

1. Electrical wiring and equipment for light, heat, or power purposes will be installed in compliance with the requirements of OSHA Part 1926, Subpart K, Electrical.
2. Internal combustion engine powered equipment will be located so that the exhausts are well away from combustible materials. When the exhausts are piped to outside the building under construction, a clearance of at least 6 inches will be maintained between the piping and combustible material.
3. Smoking is prohibited at or in the vicinity of operations which constitute a fire hazard, and will be conspicuously posted: "No Smoking or Open Flame."
4. Portable battery powered lighting equipment, used in connection with the storage, handling, or use of flammable gases or liquids, will be of the type approved for the hazardous locations.
5. The nozzle of air, inert gas, and steam lines or hoses, when used in the cleaning or ventilation of tanks and vessels that contain hazardous concentrations of flammable gases or vapors, will be bonded to the tank or vessel shell. Bonding devices will not be attached or detached in hazardous concentrations of flammable gases or vapors.

No temporary building will be erected where it will adversely affect any means of exit.

Temporary buildings, when located within another building or structure, will be of either noncombustible construction or of combustible construction having a fire resistance of not less than 1 hour.



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Temporary buildings, located other than inside another building and not used for the storage, handling, or use of flammable or combustible liquids, flammable gases, explosives, or blasting agents, or similar hazardous occupancies, will be located at a distance of not less than 10 feet from another building or structure. Groups of temporary buildings, not exceeding 2,000 square feet in aggregate, will, for the purposes of this part, be considered a single temporary building.

Open Yard Storage

1. Combustible materials will be piled with due regard to the stability of piles and in no case higher than 20 feet.
2. Driveways between and around combustible storage piles will be at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other articles or materials. Driveways will be spaced so that a maximum grid system unit of 50 feet by 150 feet is produced.
3. The entire storage site will be kept free from accumulation of unnecessary combustible materials. Weeds and grass will be kept down and a regular procedure provided for the periodic cleanup of the entire area.
4. When there is a danger of an underground fire, that land will not be used for combustible or flammable storage.
5. Method of piling will be solid wherever possible and in orderly and regular piles. No combustible material will be stored outdoors within 10 feet of a building or structure.
6. Portable fire extinguishing equipment, suitable for the fire hazard involved, will be provided at convenient, conspicuously accessible locations in the yard area. Portable fire extinguishers, rated not less than 2A, will be placed so that maximum travel distance to the nearest unit will not exceed 100 feet.

Indoor Storage

1. Storage will not obstruct or adversely affect means of exit.
2. All materials will be stored, handled, and piled with due regard to their fire characteristics.



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3. Non compatible materials which may create a fire hazard will be segregated by a barrier having a fire resistance of at least 1 hour.
4. Material will be piled to minimize the spread of fire internally and to permit convenient access for firefighting. Stable piling will be maintained at all times. Aisle space will be maintained to safely accommodate the widest vehicle that may be used within the building for firefighting purposes.
5. Clearance of at least 36 inches will be maintained between the top level of the stored material and the sprinkler deflectors.
6. Clearance will be maintained around lights and heating units to prevent ignition of combustible materials.
7. A clearance of 24 inches will be maintained around the path of travel of fire doors unless a barricade is provided, in which case no clearance is needed. Material will not be stored within 36 inches of a fire door opening.

Other Fire Protection & Prevention Elements

1. Flammable and combustible liquids will be used and handled in a manner at all times consistent with the 1926.152, Flammable & Combustible Liquids regulations and to protect against and prevent the occurrence of fire.
2. Liquefied petroleum gas (LP-Gas) will be used and handled in a manner at all times consistent with the 1926.153, LP-Gas regulations and to protect against and prevent the occurrence of fire.
3. Temporary heating devices will be used and handled in a manner at all times consistent with the 1926.154, Temporary Heating Devices regulations and to protect against and prevent the occurrence of fire.



FIRST AID PROGRAM

Purpose

Our Company is dedicated to the protection of its employees from on-the-job injuries and illnesses. However, when injuries or illnesses do occur, we are prepared to immediately respond to the needs of the injured or ill.

This written First Aid Program is intended to ensure that Our Company meets the requirements of 29 CFR 1910.151, Medical Services and First Aid.

Administrative Duties

Our Safety Director is responsible for establishing and implementing the written First Aid Program. This person has full authority to make necessary decisions to ensure the success of this program. Copies of this written program may be obtained from the main office. If after reading this program, you find that improvements can be made, please contact the Safety Director. We encourage all suggestions because we are committed to the success of this written program.

First Aid Personnel

The National EMS Education and Practice Blueprint list the following first aid designations:

- **First aid provider:** Occupationally required to be trained in first aid even though they may not be specifically obligated by law to perform first aid. Responds as a "Good Samaritan." Uses a limited amount of equipment to perform initial assessment and provide immediate life support and care while awaiting arrival of emergency medical services (EMS).
- **First responder:** Uses a limited amount of equipment to perform initial assessment and intervention and is trained to assist other EMS.
- **Emergency Medical Technician (EMT)-Basic:** The 2nd level of professional emergency medical care provider. Qualified to function as the minimum staff for an ambulance.
- **EMT-Intermediate:** The 3rd level of professional emergency medical care provider. Can perform essential advanced techniques and administer a limited number of medications.
- **Paramedic:** The 4th level of professional emergency medical care provider. Can administer additional interventions and medications.

Our Company does not have a designated first aid provider. This program is a matter of general information stating that we will endeavor to provide first aid to all employees injured on the job site.



FIRST AID PROGRAM

Hazard and Medical Services Assessment

We have assessed Our Company for hazards to determine whether any pose the risk of a life-threatening or permanently disabling injury or illness.

It was determined that multiple types of injuries can occur on a construction site, with many of them being life threatening.

The nearest hospital, clinic, or infirmary will be determined prior to any job starting. The location of the nearest medical facility will be posted in the job site trailer, and the foreman or superintendent will have knowledge of these facilities.

First Aid Supplies and Equipment

It is important that our first aid supplies and equipment meet the specific needs of our jobsites. The Safety Director has ensured that adequate first aid supplies are readily available.

Supplies provided in our first aid kits comply with the following:

ANSI Z308.1-1998 Minimum Requirements for Workplace First Aid Kits

Applicable regulations: [1910.151](#) [1926.50](#)

This American National Standard provides minimum requirements for workplace first aid kits. The 1998 edition is more performance-based than in the past. It also contains requirements for indoor and outdoor kits. It provides information on:

- Standard sizes of cases,
- Unit packaging, and specifications for the most commonly used items, and
- Arrangement of first aid materials for easy identification, removal, and replacement.

The standard classifies kits as Type I, Type II, or Type II, depending on whether they are fixed, portable, or portable for outdoor use.

Under this standard, the following are the minimum acceptable contents of first-aid kits:

- Absorbent compress
- Adhesive bandages
- Adhesive tape



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- Antiseptic applications
- Burn treatment applications
- Sterile pads
- Medical exam gloves
- Triangular bandage

The standard gives specific dimensions, details, number of units, etc., of the minimum acceptable contents listed above. The standard also requires the kit to be marked with the ANSI designation and it recommends regular inspection of first aid kit contents and that one worker in each work location be trained.

ANSI standards become mandatory OSHA standards only when, and if, they are adopted by OSHA; ANSI Z308.1, Minimum Requirements for Workplace First Aid Kits, was not adopted by OSHA. However, ANSI Z308.1 provides detailed information regarding the requirements for first aid kits; OSHA has often referred employers to ANSI Z308.1 as a source of guidance for the minimum requirements for first aid kits.

- (16) 1" x 3" Adhesive Strips
- (8) Premium Fabric Knuckle Bandages
- (10) Premium Fabric Fingertip Bandages
- (6) Premium Fabric X-Large Strips
- (1) Hema-Seal Major Wound Bandage & Compress (with gloves)
- (4) 3" Gauze Pads
- (2) Adhesive Tape
- (1) Eye Flush, Pads & Strips
- (12) First Aid/Burn Cream Packets
- (10) Antiseptic Wipes
- (1) 40" Triangular Bandage
- (4) Exam Gloves
- (1) First Aid Instructions

We provide these supplies in our first aid kits. These kits are located in our gang boxes, foreman's truck, and job shanty (if provided). An outside service checks the first aid supplies on a monthly basis, or as requested. Supplies are replaced promptly when expended.

Because it is reasonably anticipated that employees will be exposed to blood or other potentially infectious materials while rendering first aid, we provide a blood



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borne pathogen kit at every jobsite. (See Blood Borne Pathogen section of this safety program)

Because we may have injurious corrosive materials, our company provides drenching and flushing facilities that meet the specifications of ANSI Z358.1, *Emergency Eyewash and Shower Equipment*:

Transportation of Injured Employee

All seriously injured employees will be transported by certified medical personnel that respond via a call to 911. (EMR – Ambulance service).

Other employees that are not seriously injured will be taken to the nearest medical facility by another employee. The injured employee will not be allowed to transport themselves for medical attention.

The nearest medical facility is posted at each jobsite, and was included in the list from information gathered in the pre-construction meeting.

Training

Training is the heart of our First Aid Program. Training records of qualified providers will be documented. Employees should NOT attempt to rescue or treat an injured or ill employee unless they are qualified to do so. Instead, they should contact someone who is qualified. **For all serious injuries, 911 must be called immediately.**

Employees who are qualified to render first aid and have completed a certified first aid training program through American Red Cross, or equivalent, may render first aid, at their discretion. A trained first aid provider must be available on site if a medical facility or EMS personnel aren't reasonably accessible in terms of time and distance.

First aid training is completed on an annual basis. This training is for awareness and general education only.

Accident Reporting

After the immediate needs of an injury or illness emergency have been met, we require our employees to report the event to their supervisor. Extremely minor injuries, like a small bruise, do not need to be reported. However, those injuries and illnesses involving professional treatment, time away from work, or a near miss of a more serious accident, must be reported to an employee's supervisor.



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FIRST AID PROGRAM

Even injuries that do not become apparent until after the cause must be reported. For example, back pain that develops over a period of time must be reported.

Please see the accident reporting and investigation section of this manual for our company procedures.

Recordkeeping

The Safety Director is responsible for maintaining the records and documentation relating to first aid, injuries, illnesses, and accidents. This includes all accident investigation forms, those required for insurance purposes, and the OSHA log.



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FORKLIFT SAFETY PLAN

Purpose

It is the policy of this Company to permit only trained and authorized personnel to operate forklifts and forklift type equipment. The OSHA regulations require a competent person to regularly inspect jobsites, materials, and equipment (§1926.20(b)(2)). For this reason, this program is under the direction of our competent person. Our competent person is 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.

Our Safety Director is the competent person in charge of this forklift written safety plan.

All equipment will comply with the manufacturer's specifications and limitations at all times. No modifications or additions which affect the capacity or safe operation of the equipment will be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals will be changed accordingly. In no case will the original safety factor of the equipment be reduced.

This Company does not ask any forklift operator to operate any equipment that is not in compliance with all applicable requirements of the OSHA regulations (29 CFR 1926, Subparts C-General safety and health provisions, and Subpart O-Motor vehicles, mechanized equipment, and marine operations).

Any machinery that does not meet OSHA, manufacturer, or this Company's safety requirements, will either be: (1) identified as unsafe by tagging or locking the controls to render them inoperable or, (2) physically removing the equipment from the jobsite.

Only those employees qualified by training or experience and designated by this Company as competent to operate materials handling equipment can operate equipment. Operators will be designated for specific pieces of equipment.

Unauthorized modifications can cause accidents and fatalities. It is our policy to notify the manufacturer and obtain written approval from them for any proposed modification to any equipment which affects the capacity or safe operation. Our Safety Director is responsible for obtaining this written approval.

If modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals are changed accordingly, to reflect the new



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FORKLIFT SAFETY PLAN

specifications to which the equipment can perform. In no case will the original safety factor of the equipment be reduced.

The general requirements for forklift equipment inspections are found at §1926.600. There are no requirements for annual or periodic inspections on materials handling equipment, as there is with cranes, except for the paragraph on page five where OSHA calls for frequent and regular inspections. OSHA generally interprets frequent to mean "at the start of each shift."

A thorough inspection program can forecast maintenance needs or potential equipment failures or malfunctions. The lack of such a program could result in serious deterioration of the equipment which might lead to excessive replacement or repair charges as well as increased potential for accidents.

This company requires operators to perform preoperational inspections on all forklift type equipment prior to the beginning of each shift in which the equipment will be used. Operators are to complete their daily inspections according to the manufacturer's recommendations. These inspection procedures will vary by piece of equipment, but in no case is a fork-truck to be used without a pre-operational inspection.

Operators will walk around the forklift looking for defects or problem areas. Components that have a direct bearing on the safety of the piece of equipment and whose status can change from day to day with use must be inspected daily, and when possible, observed during operation for any defects that could affect safe operation.

Preoperational inspections include, but are not limited to, the following:

- **Pre-operational Site Activity and Inspection** - a site inspection to locate features or activities that may pose a potential hazard during operation of the piece of equipment
- **Pre-operational (Daily) Walk-Around Inspection** - a walk around the exterior of the forklift, to assess the safety level of exterior features.
- **Pre-start Up Inspection** - a check for necessary paperwork, labeling of all switches and controls as to proper function, working order of all lights and other electronic equipment.
- **Initial Equipment Operation** - on start-up for each job shift, a check that the piece of equipment is operating as it should and functioning properly.



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If any defect or problem is encountered during the pre-operational inspection, the piece of equipment will be posted appropriately as out of service and the Safety Director is to be notified immediately. The Safety Director will remove the key from the piece of equipment and place a **DANGER DO NOT OPERATE** tag on its steering wheel or control lever. The defect or problem discovered must be identified thoroughly in writing, so that the Maintenance Department personnel can pinpoint the trouble immediately and repair it promptly.

If the piece of equipment is safe to operate, the operator will make note of that on the inspection form (one is secured to each forklift), and then proceed with the job at hand.

The Safety Director will retain all inspection forms for each vehicle for six months. The file will be updated monthly with six months of records retained.

Pre-operational Site Activity and Inspection

Accidents can be avoided by careful job planning. Our competent person has a clear understanding of the work to be performed and considers all potential dangers at the job site.

- All equipment left unattended at night, adjacent to a highway, or adjacent to construction areas where work is in progress will have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment.
- Parked equipment must have the parking brake set. If the equipment is parked on an incline, it must have the wheels chocked and the parking brake set.

Pre-operational (daily) Walk-Around Inspection

Inspection of all forklift type equipment will be made at the start of each shift and during usage to make sure it is in a safe operating condition. This inspection is the responsibility of our Company competent person (this may be the equipment operator).

Any deficiencies will be repaired, or defective parts replaced, before the equipment can be used.

A checklist for daily inspection of fork-trucks and equipment includes, but is not limited to, the following:

- Inspect tires for cuts, tears, breaks, and proper inflation.



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- Check exhaust pipes for guards or insulation in areas where contact by employees, in the performance of normal duties, is possible.
- Visually inspect the forklift for fluid leaks in lines, tanks, valves, pumps, and other parts of fuel, air, or hydraulic systems.
- Check batteries for water level, corrosion, and tight connectors.
- Visually check that the forklift is properly lubricated. The fuel, lubricating oil, coolant and hydraulic oil reservoirs should be filled to proper levels.
- Check all other functional operating mechanisms such as locking mechanisms, limit switches, safety devices, hydraulic cylinders, instruments, and lights.
- Check guardrails, handholds, and steps for security.
- Check platform and walkway anti-skid surfaces for damage.
- Check platforms and walkways for slippery substances such as grease, oil, or ice.

Pre-start-up (in cab) Inspection

Cab

- Check inspection and maintenance records to ensure all maintenance is current.
- Check previous day's inspection checklist to ensure noted repairs were completed.
- Check that the cab is clean and free of clutter.
- Check that windows are clean inside and out and there is no broken or cracked glass.
- Check that the cab glass is safety glass, or equivalent, and that it introduces no visible distortion affecting the safe operation of the forklift.
- Check that all controls are labeled as to their function. Check that they are free to return to the neutral position when released unless designed to do otherwise.
- Check that all gauges and warning lights are operable.
- Check signal horn and back up alarms.
- Check service/parking brake for proper operation.
- Check that the seat is securely attached, and that the cab door opens outward and operates smoothly.
- Adjust your seat mechanism and fasten your seat belt.

Placards

Check that rated load capacities, recommended operating speeds, special hazard warnings, i.e., electrical power line clearance requirements, or instructions, are posted and visible to the operator while at the control station.



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When auxiliary removable counterweights are provided by the manufacturer, corresponding alternate rated capacities also must be clearly shown on the forklift. These ratings must not be exceeded.

- It is not enough to just have load charts available. Our forklift operators are able to show adequate understanding and proficient use of the charts as related to the equipment in use and for the loads being lifted.

Operation

- While the engine is running, check all gauges and warning lights for proper readings and operate all controls to see that they are functioning properly.
- Go through controls checklist to ensure all controls are working including steering.
- Use lift and tilt system checklist to ensure system is working.
- Inspect and test all brakes and clutches for proper adjustment and operation.

Load Chart Review

We will consider the manufacturer's operating notes supplied with the machine containing important information concerning proper set-up, operation and additional points that need to be considered when calculating load handling capacities of materials handling equipment.

We have also considered the following operational conditions:

- It is very dangerous to lift a load without knowing whether it is within the rated capacity of the forklift.
- We will always stay within the rated load capacity and working radius. Under adverse field conditions our operators must reduce the load capacity until it is determined the machine can safely handle the lift.
- We will not lift a load when winds create an unsafe or hazardous condition.

Forklift Operation Checklist

All employees will be kept clear of loads about to be lifted and suspended loads.

If a load is lifted by two or more trucks working in unison, the proportion of the total load carried by any one truck will not exceed its capacity.

Steering or spinner knobs will not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin. The steering knob must be mounted within the periphery of the wheel.



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All high lift trucks will be equipped with overhead guards which meet the configuration and structural requirements found in ANSI B56.1-1969, Safety Standards for Powered Industrial trucks.

When loading and unloading trailers, the operator must ensure that trailers are secured through either wheel chocks or a trailer restraint system. Fixed jacks may be necessary to support trailers that aren't coupled to a power unit (tractor).

Passengers

Unauthorized persons will **not be permitted to ride on any powered industrial truck.** A safe place will be provided where riding of trucks is authorized.

When a truck is equipped with vertical only, or vertical and horizontal controls elevate able with the lifting carriage or forks for lifting personnel, the following additional precautions will be taken for the protection of personnel being elevated.

- The safety platform must be firmly secured to the lifting carriage and/or forks.
- Means must be provided whereby personnel on the platform can shut off power to the truck.
- Protection from falling objects as indicated necessary by the operating conditions must be provided.

We understand that improvised (homemade) work platforms attached to the forks of construction forklifts are considered scaffolds by OSHA and must meet the requirements of the OSHA rules at 1926, Subpart L-Scaffolding. These forklift work platforms must:

- Have proper guardrails.
- Be of proper strength and stability.
- Be correctly attached to the forklift.

Maintenance Requirements

Any time we are inflating, mounting, or dismounting tires installed on split rim, or rims equipped with locking rings or similar devices, a safety tire rack, cage, or equivalent protection will be used.

When machinery, equipment, or parts are suspended or held aloft by slings, hoists, or jacks they will be substantially blocked or cribbed to prevent falling or shifting before our mechanics are permitted to work under or between them.

Forks must be either fully lowered or blocked when being repaired or when not in use.



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All controls must be in a neutral position, with motors stopped and brakes set, unless the maintenance/test requirements require otherwise.

All use, care, and charging of batteries will be done in accordance with the requirements of the OSHA regulations at §1926, Subpart K-Electrical.

Recordkeeping & Certification Requirements

This Company will complete and maintain the following record-keeping and certification requirements.

Equipment shall receive periodic inspection by a qualified maintenance provider.

If we do not have manufacturer's specifications and limitations for our equipment, determination of those limitations will be made by a qualified engineer. The results will be documented, recorded and kept on file.

Written approval from the manufacturer of any modifications or additions that affect the capacity or safe operation of our equipment will be requested and kept on file. In no case will the original safety factor of the equipment be reduced.

If a forklift is going to be operated in an enclosed space, tests will be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gasses or oxygen-deficient atmospheres.

Training Program

Under no circumstances will an employee operate a piece of heavy equipment until he/she has successfully completed this Company's equipment operation training program. This includes all new operators unless previous training can be substantiated. Training will be conducted by a qualified person and cover all aspects required by OSHA standards.

The training program includes classroom instruction and operational training on each specific piece of equipment the employee will operate. This training must be accomplished every three years for all certified operators. Any operator that is observed in a near miss accident, or is actually involved in an accident must be relieved of his authority until he has been retrained.

Forklift training covers the following topics:

1. Truck-related topics



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- a. Operating instructions, warnings, and precautions,
 - b. Differences between the truck and the automobile,
 - c. Truck controls and instrumentation,
 - d. Engine or motor operation,
 - e. Steering and maneuvering,
 - f. Visibility,
 - g. Fork and attachment adaptation, operation and use limitations,
 - h. Vehicle capacity,
 - i. Vehicle stability,
 - j. Vehicle inspection and maintenance,
 - k. Refueling and/or charging and recharging batteries, and
 - l. Operating limitations
2. Workplace-related topics
- a. Surface conditions in the operating area,
 - b. Composition of loads to be carried and load stability,
 - c. Load manipulation, stacking, and unstacking,
 - d. Pedestrian traffic,
 - e. Narrow aisles and other restricted places,
 - f. Hazardous areas where the vehicle will be operated,
 - g. Ramps and other sloped surfaces that could affect stability,
 - h. Environments where a buildup of carbon monoxide and diesel exhaust may exist, and
 - i. Other unique or potentially hazardous environmental conditions



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HAZARD COMMUNICATION PROGRAM

General Company Policy

The purpose of this notice is to inform you that our company is complying with the OSHA Hazard Communication Standard for construction, Title 29 Code of Federal Regulations 1926.59, by compiling a hazardous chemicals list, by using Safety Data Sheets (SDS), by ensuring that containers are labeled, and by providing our employees with training.

This program applies to all work operations in our company and at construction sites where you may be exposed to hazardous substances under normal working conditions or during an emergency situation.

Under this program, you will be informed of:

- The contents of the hazard communication standard,
- The hazardous properties of chemicals with which you work,
- Safe handling procedures, and
- Measures to take to protect yourselves from these chemicals.

Hazard Evaluation Procedures

Our chemical inventory is a list of hazardous chemicals known to be present in our workplace. Anyone who comes into contact with the hazardous chemicals on the list needs to know what those chemicals are and how to protect themselves. That is why it is so important that hazardous chemicals are identified, whether they are found in a container or generated in work operations (for example, welding fumes, dusts, and exhaust fumes). The hazardous chemicals on the list can cover a variety of physical forms including liquids, solids, gases, vapors, fumes, and mists. Sometimes hazardous chemicals can be identified using purchase orders. Identification of others requires an actual inventory of the facility.

Access to an electronic database of chemical SDS documents shall be made available in a timely matter at each project site. This information is available online and shall be used for the specific product application.

Safety Data Sheets (SDS)

SDS provide you with specific information on the chemicals you may be exposed to. The Safety Director will maintain a binder in his office with an SDS on every substance on the list of hazardous chemicals. The SDS will be a fully completed OSHA Form 174 or equivalent. The Safety Director will ensure that each work site maintains SDS for hazardous materials at the job site. SDS are readily available to you in binders.



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HAZARD COMMUNICATION PROGRAM

Our company utilizes an online database for storing SDS of the chemicals used on our job sites. Individuals will be able to access all SDS via a computer at the job site. If for any reason internet access is unavailable, each site will have a jump drive containing all SDS in PDF format. The electronic storage devices will be updated on a routine basis by the Safety Director.

Any non-English speaking employees will, upon request, have the appropriate SDS information available for them. This will be done by having an interpreter available that can explain the SDS in their native language.

The Safety Director is responsible for acquiring and updating the SDS. He will contact the chemical manufacturer or vendor if additional research is necessary or if an SDS has not been supplied with an initial shipment. All new procurements for the company must be cleared by the Safety Director. A master list of SDS is available in the office.

Labels and Other Forms of Warning

The Safety Director will ensure that all hazardous chemicals are properly labeled and updated, as necessary. Various labels are currently used on products, NFPA and HMIS labels, along with new GHS labels. GHS labels should list at least the following information:

- Product Identifier: Chemical name, trade name, code number, or batch number.
- Signal Word: Either “Danger” or “Warning” to indicate the relative level of severity.
- Pictogram: Eight pictograms are used to indicate hazard classification.
- Hazard Statement(s): Describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- Precautionary Statement(s): Phrases that describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling.
- Name, address, and phone number of the chemical manufacturer, distributor, or importer.

All containers must be properly labeled. This includes primary and secondary containers.

If an employer transfers hazardous chemicals from a labeled container to a portable container that is only intended for immediate use by the employee who performs the transfer, no labels are required for the portable container.



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Labels shall also be supplied on materials in the native language of any employees working at this company, if they do not understand English.

Non-English speaking employees will also be trained to understand the GHS labels, especially the meaning of each pictogram.

GHS Label (SAMPLE)



ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor

Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. - No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge.
Use only non-sparking tools. Store in cool/well-ventilated place.



IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO₂, or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product.

MyCompany, MyStreet, MyTown NJ 00000, Tel: 444 999 9999

Training

Everyone who works with or is potentially exposed to hazardous chemicals will receive initial training on the hazard communication standard and the safe use of those hazardous chemicals by the Supervisor. "Exposure" means that "an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g., accidental or possible) exposure."

Whenever a new hazard is introduced or an existing hazard changes, additional training will be provided. Regular safety meetings will also be used to review the information presented in the initial training.

Non-English speaking employees will also receive this training in their native language so that they may understand the standard.

Our goal is to ensure employee comprehension and understanding including being aware that they are exposed to hazardous chemicals, knowing how to read and use labels and SDS, and appropriately following the protective measures we have established.



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HAZARD COMMUNICATION PROGRAM

The training plan will emphasize these items:

- Summary of the standard and this written program.
- Any operations in their work areas where hazardous chemicals are present or have the possibility of being present.
- Chemical and physical properties of hazardous materials (e.g., flash point, reactivity) and methods that can be used to detect the presence or release of chemicals (including chemicals in unlabeled pipes).
- Physical hazards of chemicals (e.g., potential for fire, explosion, etc.).
- Health hazards, including signs and symptoms of exposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical.
- Procedures to protect against hazards (e.g., personal protective equipment required, proper use, and maintenance; work practices or methods to assure proper use and handling of chemicals; and procedures for emergency response).
- Work procedures to follow to assure protection when cleaning hazardous chemical spills and leaks.
- Where SDS are located, how to read and interpret the information on both labels and SDS, and how employees may obtain additional hazard information.
- Proper interpretation and understanding of labeling systems in use.

Hazards of Non-routine Tasks

When employees are required to perform any hazardous or non-routine tasks including, the cleaning of reactor vessels, processed or un-processed piping systems, etc., all exposed employees shall receive job site specific training. When any non-routine tasks have the potential to expose workers to hazardous chemicals, we inform employees of these hazards by determination of these exposures prior to starting work (pre-construction meetings, etc.). If any non-routine tasks are determined to be present, all employees that will be exposed shall receive specific training as to the hazards involved, and what protective measures must be taken.

Hazards of Unlabeled Pipes

We will inform employees of the hazards of chemicals contained in unlabeled pipes in their work areas by specific trainings prior to the start of work. These conditions shall normally be exposed in pre-construction meetings. If unlabeled pipes are discovered after works begins, then work shall stop immediately, until the contents of all unlabeled pipes shall be identified, and the proper training provided for all affected employees.



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HAZARD COMMUNICATION PROGRAM

Multi-Employer Facility

Each contractor, and or sub-contractor bringing chemicals on-site, must provide our company with the appropriate hazard information on these substances, including the SDS, the labels used and the precautionary measures to be taken in working with these chemicals.

The Safety Director will review our employee training program. Retraining is required when the hazard changes or when a new hazard is introduced at a worksite, but it will be company policy to provide training regularly in safety meetings to ensure the effectiveness of the program. As part of the assessment of the training program, the Safety Director will obtain input from employees regarding the training they have received, and their suggestions for improving it.

The Supervisor will advise other contractors in person of any chemical hazards that may be encountered in the normal course of their work on the worksite with us, the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. In addition the Safety Director will notify these individuals of the location and availability of SDS.

Any other contractor bringing chemicals onto a site at which we are working must provide us with the appropriate hazard information on their hazardous substances, including the labels used and the precautionary measures to be taken in working with these chemicals.

Information

All employees, or their designated representatives, can obtain further information on this written program, the hazard communication standard, applicable SDS, and chemical information lists from the Safety Director.



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HEARING CONSERVATION PROGRAM

To determine employee exposure to noise, we use the following type of calibrated equipment: Quest Model Q-300, or similar certified equipment.

This Company notifies all employees exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring by advising the employee verbally at the time of the testing.

This Company provides an opportunity for affected employees, or their representatives, to observe any noise measurements conducted. Controlling noise at the source utilizing engineering controls will be considered first, before any other tactics are implemented. This Company selects the proper hearing protection devices for affected employees according to the appropriate noise reduction rating of the device, and the noise level exposure to the affected employee(s). Options of various hearing protection devices will be given the affected employee.

Methods for measuring the adequacy of hearing protection attenuation:

1. Subtract 7 from the “Noise Reduction Rating” (NRR) of the hearing protection device.
2. Divide the above result by two (2) to arrive at a useful attenuation level.

Monitoring is repeated whenever a change in work procedures, equipment, or controls, increases noise exposures to the extent that either additional employees may be exposed at or above a TWA of 85db, or the attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of noise reduction.

Hearing Protection

This Company provides hearing protection available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater, at no cost to the employees. This Company ensures the availability and use of hearing protection by all affected employees.

This Company ensures that employees have a variety of suitable protectors that attenuate (lower) employee exposure at least to an 8-hour time-weighted average of 85 decibels.



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This Company performs evaluation of noise levels, to assure adequacy of the hearing protection attenuation, for the specific noise environments in which the protection will be used, according to specifications given in an appendix to the OSHA standard. This Company reevaluates attenuation whenever employee noise exposures increase to the extent that current hearing protection no longer provides adequate attenuation, and then provides more effective hearing protection.

Affected employees are required to wear company-provided hearing protection, and at no time may an employee tamper with or modify and hearing protection equipment. Damaged or defective equipment must be discarded and replaced. Affected employees that do not wear the provided hearing protection equipment will be subject to disciplinary action.

Training and Information

This Company has an occupational noise exposure program for all employees exposed to noise at or above an 8-hour time-weighted average of 85 decibels.

This Company makes copies of the standard available to affected employees or their representatives. Such copies are available at the office upon request. This Company has a copy of the standard in the safety program, at the main office. (Copy attached)

This Company repeats the training program for any new employees that may be exposed to high noise levels, or for current employees, if needed or requested by the employees. This Company assures that the training material is updated to be consistent with changes in the protective equipment and work processes.

This Company assures that each affected employee is informed of at least the following information:

- The effects of noise on hearing.
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, care; and

This Company makes informational materials pertaining to the Occupational Noise Exposure standard that are supplied to it by OSHA available to affected employees or their representatives.



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HEARING CONSERVATION PROGRAM

Audiometric Testing

All employees assigned to jobs that require inclusion in the Hearing Conservation Program will receive a baseline audiogram within six (6) months of the first noise exposure at or above the action level.

Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees shall also be notified to avoid high levels of noise.

Audiograms will then be given at least annually and compared to the baseline audiogram to determine if a standard threshold shift has occurred. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact in writing, within 21 days of the determination. If a threshold shift has occurred, use of hearing protection shall be re-evaluated and/or refitted and if necessary a medical evaluation may be required.

Audiometric test records are to be retained for the duration of employment.



HOUSEKEEPING PROGRAM

This document informs interested persons, including employees that we endeavor to achieve good housekeeping at all of our jobsites.

Common sense and safety concerns encourage standardization of housekeeping measures in the workplace. Our Company has developed a set of written housekeeping procedures. In this way we have standardized housekeeping measures and are providing clear expectations and procedures for housekeeping at our Company.

Good housekeeping is possibly the most visible evidence of management and employee concern for safety and health that a company displays on a day-to-day basis. Orderliness in our workplace contributes to a safe working environment by minimizing obstacles and potential safety and health threats such as spills, trip hazards, etc. In fact, we have nine good reasons for housekeeping:

- Prevents accidents
- Prevents fire
- Saves time
- Gives control to our workers
- Increases production
- Gives our workers the freedom to move
- Gives our workers pride
- Protects our products and equipment
- Reduces our waste

Our Written Housekeeping Program begins with a purpose statement. Then it provides a section to explain our expectations for a walk-around assessment. We have also included specific housekeeping procedures. Because no program can be successful without employee participation, we train our employees in the procedures. Plus, we have a system to promptly address and resolve any housekeeping-related accidents and hazard reports.

Purpose Statement

This document serves as the written procedures for general housekeeping at Our Company. These guidelines provide housekeeping standards at our jobsites to help ensure a safe work environment at all times in all areas.

Administrative Duties

Our Safety Director, is responsible for developing and maintaining the program. A copy of the plan may be reviewed by employees.



HOUSEKEEPING PROGRAM

Walk-Around Assessment

Our jobsite foreman, and superintendents, walk(s) around the jobs for an assessment to identify main housekeeping issues. These persons look for a lack of order, unremoved spills or obstructions, or other hazards due to poor organization or poor housekeeping. They ask employees working in each area to identify and recommend corrective actions for their area. They also walk around the exterior to see if there is refuse or an untidy appearance due to storing materials haphazardly.

Housekeeping Procedures

It is the intent of this Company to standardize housekeeping measures, meet OSHA requirements, and encourage safety. The procedures listed below cover our jobsites.

Our jobs securely store material by piling or arranging it in an orderly manner. Our housekeeping procedures for storage areas keeps them free from accumulation of materials that constitute hazards from tripping, fire, explosion, etc.

Aisles, Walkways, and Floor

On our jobs we endeavor to keep aisles, walkways and floors clean and open:

- Provide sufficient safe clearances and access to any and all work stations and work areas, fire aisles, fire extinguishers, fire blankets, electrical disconnects, safety showers, other emergency aids, doors, and access to stairways.
- Clearly mark to distinguish walkways from areas not for pedestrian traffic.
- Keep aisles and walkways free of physical obstructions that would prevent access, including path-blocking objects, liquid or solid spills, and other obstructions.
- Keep aisles at least 3 feet wide where necessary for reasons of access to doors, windows, or standpipe connections.
- Keep stairs clean, dry, and free of waste, well-lit, and provided with adequate hand rails and treads that are in good condition.
- Keep floors clean; dry (dry as possible); slip-resistant; and free of waste, unnecessary material, oil and grease, protruding nails, splinters, holes, or loose boards.
- Provide an adequate number of waste receptacles at accessible locations throughout all work areas.



HOUSEKEEPING PROGRAM

Production Areas

Our housekeeping procedures for our production areas include:

- Maintain adequate temporary lighting systems in a clean and efficient manner and replace bulbs as soon as possible after failure. Make sure all temporary lighting is protected.
- Properly maintain floors and walkways (keep clear of materials).
- Provide adequate ventilation to all work areas to keep air free of dust and other contaminants.

Discipline

Our Company imposes and enforces the disciplinary measures for employees who fail to abide by the housekeeping procedures.

Subcontractors

Our jobs use subcontractors to perform work in and around our sites that involve housekeeping procedures. Our goal is to hire subcontractors who accomplish the desired job tasks without compromising the safety and health of employees at the facility.

Our foreman obtains and periodically evaluates the subcontractor's safety performance.

We inform and train subcontractors of the known hazards which could develop from poor housekeeping, but which relate to the subcontractor's work and processes.

We ensure that the subcontractor advises our foreman of any unique hazards presented by the subcontractor's work.

Incident Investigation

Incident investigation is the process of identifying the underlying causes of incidents and implementing steps to prevent similar events from occurring. With our incident investigations, we intend to learn from past experiences and thus avoid repeating past mistakes. Some of the incidents could be "near misses," meaning that a serious consequence did not occur, but could have.



LEAD EXPOSURE COMPLIANCE PROGRAM

Purpose

The purpose of this program is to inform interested persons, including employees that our Company is complying with the OSHA Lead Standard, Title 29 Code of Federal Regulations 1926.62 by:

- Ensuring that no employee is exposed to lead at concentrations greater than 50 micrograms per cubic meter of air averaged over an eight-hour period.
- Ensuring that if an employee is exposed to lead for more than eight hours in any work day the employee's allowable exposure, as a time weighted average (TWA) for that day, must be reduced according to the following formula: Allowable employee exposure (in micrograms per cubic meter) = 400 divided by hours worked in the day.
- Knowing that when respirators are used to limit employee exposure as required by paragraph (c) of Section 1926.62, and all the requirements of paragraphs (e)(1) and (f) of Section 1926.62, have been met, employee exposure may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

This program applies to all construction work where one of our employees may be occupationally exposed to lead. All work related to construction, alteration, or repair, including painting and decorating, is included.

Administrative Duties

Our Safety Director is the program coordinator/manager and is responsible for its implementation.

Exposure Assessment

Our Company policy is to not expose any of our employees to lead hazards. If there is a lead exposure on any of our jobs, we will perform initial exposure assessments to determine the hazard. The removal of any lead products, etc. will be performed by other contractors on our jobsites.

We will require all subcontractors involved with any lead exposure to comply fully with the lead standard as issued by OSHA.

LEAD EXPOSURE COMPLIANCE PROGRAM

Protection of Employees during Exposure Assessment

When tasks are presumed to generate lead exposures greater than the permissible exposure limit (PEL) of 50 micrograms per cubic meter of air averaged over an eight hour period, we treat affected employees as if they were exposed above the PEL and implement procedures to protect workers until we perform an employee exposure assessment and document that an employee's lead exposure is not above the PEL.

Tasks estimated to generate a TWA of 50 micrograms per cubic meter of air include:

- Manual demolition of structures (e.g., existing bridge structures), manual scraping, manual sanding, heat gun applications, and power tool cleaning with dust collection systems where lead containing coatings or paint are present.
- Spray painting with lead paint.
- Using lead containing mortar or lead burning.
- Rivet busting, power tool cleaning without dust collection systems, cleanup activities where dry expendable abrasives are used, and abrasive blasting enclosure movement and removal where lead containing coatings or paint are present.

Personal Protective Equipment Required:

- Appropriate respiratory protection (protection factor of 10, 25, or 50, depending on the tasks involved and the estimated exposures).
- Proper personal protective clothing and equipment.
- Change areas.
- Hand washing facilities.

Initial Determination

We assess each new project to determine if employees may be exposed to lead at or above the action level of 30 micrograms per cubic meter of air as an eight-hour TWA. This initial determination can be based on:

- Employee exposure monitoring
- Objective data demonstrating that under any expected conditions, specific processes, operations, or activities involving lead cannot result in employee exposure to lead at or above the action level.



LEAD EXPOSURE COMPLIANCE PROGRAM

- Previous monitoring for lead exposures within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, types of materials, control methods, work practices, and environmental conditions used and prevailing in our operations.

Employee Notification

Within five working days of completing an exposure assessment we notify each employee in writing of his or her assessment results.

This lead exposure control program for any worksite is implemented when employee exposure exceeds the permissible exposure limit (PEL).

This program is our written strategy and schedule for protecting our workers from lead exposure. It incorporates all relevant information that relates to this goal, so that we determine whether we appropriately analyzed problems and solutions (including alternatives) relating to lead exposure.

This program is intended to reduce employee exposure to at or below the PEL. When all feasible engineering and work practice controls that can be instituted are not sufficient to reduce employee exposure to acceptable levels, appropriate respiratory protection will be provided to supplement such controls.

The job site, materials, and equipment are regularly inspected.

Work practice programs such as Protective Work Clothing and Equipment program, Housekeeping program, and a Hygiene Facilities and Practices program, are required by OSHA and are required to be a part of this document. We do have these work practice programs and they are included in this compliance program.

Administrative controls, such as job rotation, are used at this Company to lower employee TWA exposure to lead.

Respiratory Protection

Engineering and work practice controls are used to reduce exposures to at or below the PEL without the use of respirators. If levels cannot be reduced below the PEL, respiratory protection will be provided. Respirator use must adhere to the requirements established in the "Respiratory Protection" section of the Safety Program.



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LEAD EXPOSURE COMPLIANCE PROGRAM

Protective Work Clothing and Equipment

We provide personal protective equipment as interim protection for employees during exposure assessment, since our employees may be exposed to lead (1) above the PEL without regard to the use of respirators, or (2) to lead compounds, which may cause skin or eye irritation. This outline of our Protective Work Clothing and Equipment policy is included as a part of the site plan when required. We provide protective clothing and equipment at no cost to our employees.

Housekeeping

Our Company believes that a rigorous housekeeping program is necessary in jobs where there is lead exposure or the potential of lead exposure to keep airborne lead levels below permissible limits. This requires a regular housekeeping schedule adapted to exposure conditions on site.

For this project, our procedure for housekeeping is:

- Keeping surfaces as lead-free as practicable.
- Vacuuming floors and other surfaces where lead accumulates to minimize the likelihood of lead becoming airborne.
- Shoveling or dry or wet sweeping (allowed only where vacuuming or other equally effective methods have been tried and found ineffective).
- Using HEPA filters on vacuums.
- Emptying vacuums so that lead is not reintroduced into the workplace.

Hygiene Facilities and Practices

We provide hygiene facilities for our workers and assure they follow good hygiene practices. We prohibit smoking, eating, applying cosmetics, and the presence of tobacco products, foodstuffs, or cosmetics in all work areas where employees are exposed to lead above the PEL. We make sure workers comply with these practices by:

Medical Surveillance

Our Company supports the practices necessary for early detection of lead exposure. The medical surveillance program supplements the primary goals of the lead exposure control program of preventing disease through elimination or reduction of airborne concentrations of lead, and sources of ingestion. The medical surveillance provisions incorporate both initial and ongoing medical surveillance.



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LEAD EXPOSURE COMPLIANCE PROGRAM

We provide initial medical surveillance to employees who are occupationally exposed to airborne lead levels at or above the PEL. This monitoring consists of sampling blood and analyzing it for lead and zinc protoporphyrin levels. Where this initial biological monitoring indicates that an employee's blood lead level is at or above 40 micrograms per deciliter of whole blood, we provide biological monitoring at least every two months. This frequency continues until two consecutive blood samples and analyses indicate that the employee's blood lead level is below 400 micrograms per deciliter of whole blood.

Medical Removal Protection

We remove employees from work who have exposures to lead at or above the action level each time a periodic and a follow-up blood sample indicates that the blood lead levels are at or above 50 micrograms per deciliter of whole blood. We also remove employees from work who have exposures to lead at or above the action level when a health care professional determines that they have medical conditions which, when exposed to lead, places them at greater risk health problems.

Employee Information and Training

Employees can do much to protect themselves from the risks of occupational lead exposure if they know about them. In our training program we inform employees of the specific hazards associated with their work environment, protective measures that can be taken, and their rights under the standard.

Signs

Because exposure to lead is a serious health hazard, Our Company posts signs that warn employees of lead hazards and of the possible need to use respirators and other protective equipment in the area. Employees are also informed of lead hazards through training.



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Lockout/Tagout - Energy Control Program

Purpose

This procedure establishes this company's requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment, in accordance with the requirements of OSHA's 1910.147. It is used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury. This program applies to all work operations at our company where employees must deal with lockout/tagout situations as part of their job duties.

Control of Hazardous energy is the purpose of the Lockout-Tagout Program. This program establishes the requirements for isolation of both kinetic and potential electrical, chemical, thermal, hydraulic, pneumatic, and gravitational energy prior to equipment repair, adjustment, or removal. Reference: OSHA Standard 29 CFR 1910.147, the control of hazardous energy.

Definitions

Authorized (Qualified) Employees are the only ones certified to lock and tagout equipment or machinery. Whether an employee is considered to be qualified will depend upon various circumstances in the workplace. It is likely for an individual to be considered "qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a qualified person, is considered to be "qualified" for the performance of those duties.

Affected Employees are those employees who operate machinery or equipment upon which lockout or tagging out is required under this program. Training of these individuals will be less stringent in that it will include the purpose and use of the lockout procedures.

Other Employees are identified as those that do not fall into the authorized, affected or qualified employee category. Essentially, it will include all other employees. These employees will be provided instruction in what the program is and not to touch any machine or equipment when they see that it has been locked or tagged out.



Lockout/Tagout - Energy Control Program

Training

All training and re-training will be certified and documented within the company safety files.

Authorized Employees Training

All Maintenance Employees, Department Supervisors and Janitorial employees will be trained to use the Lock and Tagout Procedures. The training will be conducted by the Maintenance Supervisor or Safety Coordinator at time of initial hire. Retraining shall be held at least annually. The training will consist of the following:

1. Review of General Procedures
2. Review of Specific Procedures for machinery, equipment and processes
3. Location and use of Specific Procedures
4. Procedures when questions arise

Affected Employee Training

1. Only trained and authorized Employees will repair, replace or adjust machinery, equipment or processes
2. Affected Employees may not remove Locks, locking devices or tags from machinery, equipment or circuits.
3. Purpose and use of the lockout procedures.

Other Employee Training

1. Only trained and authorized Employees will repair, replace or adjust machinery or equipment.
2. Other Employees may not remove Locks, locking devices or tags from machinery, equipment or circuits



Lockout/Tagout - Energy Control Program

Preparation for Lock and Tag Out Procedures

A Lockout - Tagout survey has been conducted to locate and identify all energy sources to verify which switches or valves supply energy to machinery and equipment. Dual or redundant controls have been removed.

A Tagout Schedule has been developed for each piece of equipment and machinery. This schedule describes the energy sources, location of disconnects, type of disconnect, special hazards and special safety procedures. The schedule will be reviewed each time to ensure employees properly lock and tag out equipment and machinery. If a Tagout Schedule does not exist for a particular piece of equipment, machinery and process, one must be developed prior to conducting a Lockout - Tagout. As repairs and/or renovations of existing electrical systems are made, standardized controls will be used.

Routine Maintenance & Machine Adjustments

Lock and Tag Out procedures are not required if equipment must be operating for proper adjustment. This rare exception may be used only by trained and authorized Employees when specific procedures have been developed to safely avoid hazards with proper training. All consideration shall be made to prevent the need for an employee to break the plane of a normally guarded area of the equipment by use of tools and other devices.

Locks, Hasps and Tags

All Qualified Maintenance Personnel will be assigned a lock with one key, hasp and tag. All locks will be keyed differently, except when a specific individual issues a series of locks for complex lockout-tagout tasks. In some cases, more than one lock, hasp and tag are needed to completely de-energize equipment and machinery. Additional locks may be checked out from the Department or Maintenance Supervisor on a shift-by-shift basis. All locks and hasps shall be uniquely identifiable to a specific employee.

General Lock and Tag Out Procedures

Before working on, repairing, adjusting or replacing machinery and equipment, the following procedures will be utilized to place the machinery and equipment in a neutral or zero mechanical state.



Lockout/Tagout - Energy Control Program

Preparation for Shutdown.

Before authorized or affected employees turn off a machine or piece of equipment, the authorized employee will have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the means to control the energy.

Notify all affected Employees that the machinery, equipment or process will be out of service.

Machine or Equipment Shutdown.

The machine or equipment will be turned or shut down using the specific procedures for that specific machine. An orderly shutdown will be utilized to avoid any additional or increased hazards to employees as a result of equipment de-energization.

If the machinery, equipment or process is in operation, follow normal stopping procedures (depress stop button, open toggle switch, etc.).

Move switch or panel arms to "Off" or "Open" positions and close all valves or other energy isolating devices so that the energy source(s) is disconnected or isolated from the machinery or equipment.

Machine or Equipment Isolation.

All energy control devices that are needed to control the energy to the machine or equipment will be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.

Lockout or Tagout Device Application.

Lockout or tagout devices will be affixed to energy isolating devices by authorized employees. Lockout devices will be affixed in a manner that will hold the energy isolating devices from the "safe" or "off" position. All authorized employees performing lockout tasks will affix their own lockout device.

Where tagout devices are used they will be affixed in such a manner that will clearly state that the operation or the movement of energy isolating devices from the "safe" or "off" positions is prohibited.

The tagout devices will be attached to the same point a lock would be attached. If the tag cannot be affixed at that point, the tag will be located as close as possible to the



Lockout/Tagout - Energy Control Program

device in a position that will be immediately obvious to anyone attempting to operate the device.

Lock and tag out all energy devices by use of hasps, chains and valve covers with an assigned individual locks.

Stored Energy.

Following the application of the lockout or tagout devices to the energy isolating devices, all potential or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe.

Where the re-accumulation of stored energy to a hazardous energy level is possible, verification of isolation will be continued until the maintenance or servicing is complete.

Release stored energy (capacitors, springs, elevated members, rotating fly wheels, and hydraulic/air/gas/steam systems) must be relieved or restrained by grounding, repositioning, blocking and/or bleeding the system.

Verification of Isolation.

Prior to starting work on machines or equipment that have been locked or tagged out, the authorized employees will verify that isolation or de-energization of the machine or equipment have been accomplished.

After assuring that no Employee will be placed in danger, test all lock and tag outs by following the normal start up procedures (depress start button, etc.).

Caution: After test, place controls in neutral position.

Extended Lockout - Tagout

Should the shift change before the machinery or equipment can be restored to service, the lock and tag out must remain. If the task is reassigned to the next shift, those Employees must lock and tag out before the previous shift may remove their lock and tag.

Release from LOCKOUT/TAGOUT

Before lockout or tagout devices are removed and the energy restored to the machine or equipment, the following actions will be taken:



Lockout/Tagout - Energy Control Program

1. The work area will be thoroughly inspected to ensure that nonessential items have been removed and that machine or equipment components are operational.
2. The work area will be checked to ensure that all employees have been safely positioned or removed. Before the lockout or tagout devices are removed, the affected employees will be notified that the lockout or tagout devices are being removed.
3. Each lockout or tagout device will be removed from each energy isolating device by the employee who applied the device.

LOTO Procedure for Electrical Plug-Type Equipment

This procedure covers all Electrical Plug-Type Equipment such as Battery Chargers, some Product Pumps, Office Equipment, Powered Hand Tools, Powered Bench Tools, Lathes, Fans, etc.

When working on, repairing, or adjusting the above equipment, the following procedures must be utilized to prevent accidental or sudden startup:

1. Unplug Electrical Equipment from wall socket or in-line socket.
2. Attach "Do Not Operate" Tag and Plug Box & Lock on end of power cord.
3. An exception is granted to not lock & tag the plug if the cord & plug remain in the exclusive control of the Employee working on, adjusting or inspecting the equipment.
4. Test Equipment to assure power source has been removed by depressing the "Start" or "On" Switch.
5. Perform required operations.
6. Replace all guards removed.
7. Remove Lock & Plug Box and Tag.



Lockout/Tagout - Energy Control Program

8. Inspect power cord and socket before plugging equipment into power source. Any defects must be repaired before placing the equipment back in service.

NOTE: Occasionally used equipment may be unplugged from power source when not in use.

LOTO Procedures Involving More Than One Employee

In the preceding SOPs, if more than one Employee is assigned to a task requiring a lock and tag out, each must also place his or her own lock and tag on the energy isolating device(s). When multiple crews, crafts, departments, etc. are involved, an authorized employee will be designated to coordinate affected work forces and ensure continuity of protection.

Management's Removal of Lock and Tag Out

Only the Employee that locks and tags out machinery, equipment or processes may remove his/her lock and tag. However, should the Employee leave the facility before removing his/her lock and tag, the Maintenance Manager may remove the lock and tag. The Maintenance Manager must be assured that all tools have been removed, all guards have been replaced and all Employees are free from any hazard before the lock and tag are removed and the machinery, equipment or process are returned to service. Notification of the employee who placed the lock is required prior to lock removal.

Sub-Contractors.

Sub-contractors, working on company property and equipment must use this Lockout - Tagout procedure while servicing or maintaining equipment, machinery or processes.

Machinery and Equipment

The machinery and equipment at this company that fall under the Control of Hazardous Energy Standard includes the following:

1. Electrical (See our Electrical Safety Plan)
2. Machinery (All jobsite machinery)
3. Lockout is the preferred method of isolating machines or equipment from energy sources. Tagout is to be performed instead of lockout only when there is no way to lockout a machine.



Lockout/Tagout - Energy Control Program

4. Affected employees are notified when any machine is to be locked out.
5. All machinery and equipment, that has electrical, steam, hydraulic, tension, gravity, etc., as power sources must follow the shutdown, isolation, blocking and securing procedures for lockout/tagout.
6. When machinery is worked on, either in our shop, yard, or on the jobsite, we must secure and isolate all power sources first. After this is accomplished it is imperative that machinery be properly blocked and cribbed, when employees will be working under equipment, or under hydraulic lifting devices. When this type of work is being performed there shall always be two employees present.
7. All locking and tagging of electrical equipment shall follow the guidelines as established and stated in our electrical safety programs.

Periodic Inspection

A periodic inspection is done at least annually, looking at the energy control procedures performed to ensure that the procedure and requirements of the standard are being followed. This inspection is performed by our Safety Director and documented in the safety records.

Administrative Duties

The Safety Director has the overall responsibility for coordinating safety and health programs in this company. This is the person having overall responsibility for the Lockout/Tagout Program. The Safety Director will review and update the program, as necessary. Copies of the written program may be obtained from the Safety Director, and copies are maintained at the office.



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MACHINE & TOOL SAFETY PROCEDURES

Purpose

It is the policy of this Company to permit only trained and authorized employees to operate machinery or tools at any time. This policy is applicable to both daily operators of machinery and tools and those who only occasionally have cause to use machinery or tools.

List of Machinery and Tools

The machinery and tools used by employees of this Company include the following:

1. Hammers, wrenches, screwdrivers and other common hand tools.
2. Power saws, circular table saws, jig saws, reciprocating saws, miters, radial arm saws, grinders, drills, cover drills, air and gas charged nailers, impact wrenches, staplers and other common power tools.
3. Concrete saws (handheld), air compressor compactors and jackhammers.
4. 30"-36" portable fans, two way radios, pressure washers and miscellaneous tools normal to the construction industry.
5. Extension ladders.

Pre-Operational Procedures

1. Hand tools must be inspected prior to use to ensure that:
 - a. For tools with jaws, jaws are not sprung to the point of slippage.
 - b. For impact tools, they are free of mushroom heads.
 - c. For tools with wooden handles, the handles are free of splinters or cracks and are tight in the tool.
 - d. The tool is otherwise safe for use.
2. Any machine or power-operated tool part, function, or process which may cause injury must be guarded. Ensure that all permanent guards are securely attached in good working order and all removable guards are in place on the machine or power tool before starting use. Guards must meet these minimum general requirements:
 - a. **Prevent contact** - The guard must prevent hands, arms, or any part of the body or clothing from making contact with dangerous moving parts of the machine or power tool.



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MACHINE & TOOL SAFETY PROCEDURES

- b. **Secure** - Guards should not be easy to remove or alter. Guards and safety devices should be made of durable material that will withstand the conditions of normal use. They must be firmly secured to the machine or power tool.
 - c. **Protect from falling objects** - The guard should ensure that no objects can fall into moving parts of the machine or power tool.
 - d. **Create no new hazards** - If a guard creates a hazard of its own such as shear point, a jagged edge, or an unfinished surface which can cause a laceration, then do not use the piece of machinery or tool. The edges of guards, for instance, should be rolled or bolted in such a way that they eliminate sharp edges.
3. If a guard is defective, damaged, or in any way does not meet the requirements of these procedures, do not use the machine, but immediately notify the Equipment Manager.
4. Where the operation of a machine or accidental contact with it can injure you or others in the vicinity, the hazard must be either controlled or eliminated.
5. Locate and wear necessary and appropriate Personal Protective Equipment (PPE) for use with the machinery or tool before beginning use. This may include safety glasses, respirator, etc.
6. Ensure that the area in which you are working is well-lit, dry and clean before beginning work. Sawdust, paper and oily rags are a fire hazard and can damage your machinery and tools.
7. Dress right. Change clothing or take off jewelry that could become entangled in the machinery or tools you are to use.
8. Tools are to be installed or repaired only by qualified personnel. Employees are to notify their supervisor if they think machinery or a tool is in need of any type of repair.
9. If a lock or tag is in place on a piece of machinery, do not remove it and do not use that machinery.



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MACHINE & TOOL SAFETY PROCEDURES

Operating Procedures

1. Do not remove a guard for any reason while operating any piece of machinery or any power tool.
2. Do not remove any necessary Personal Protective Equipment (PPE) while the machinery or tool is in use.
3. Pay constant attention to the work at hand. Do not focus on anything else. If distracted or unable to focus on the work with the machinery or tool, stop work with that machinery or tool.
4. Upon finishing with a tool or machine, do basic maintenance for it. Keep it sharp, oiled and stored properly, as appropriate. Regularly inspect all machinery, tools, cords and accessories. Repair or replace problem tools immediately and report it to your immediate supervisor and the Equipment Manager.
5. Always use the proper piece of machinery or tools for the job.
6. Keep electric cables and cords clean and free from kinks. Never carry a power tool by its cord.



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OSHA INSPECTION PROTOCOL

OSHA INSPECTION PRIORITIES:

OSHA seeks to focus its inspection resources on the most hazardous workplaces in the following order of priority:

1. Imminent danger situations – hazards that could cause death or serious physical harm receive top priority. Compliance officers will ask employers to correct these hazards immediately or remove endangered employees.
2. Severe injuries and illnesses—employers must report:
 - a. All work-related fatalities within 8 hours.
 - b. All work-related inpatient hospitalizations, amputations, or losses of an eye within 24 hours.
3. Worker Complaints—allegations of hazards or violations also receive a high priority. Employees may request anonymity when they file complaints.
4. Referrals of hazards from other federal, state or local agencies, individuals, organizations or the media receive consideration for inspection.
5. Targeted inspections—inspections aimed at specific high-hazard industries or individual workplaces that have experienced high rates of injuries and illnesses also receive priority.
6. Follow-up inspections—checks for abatement of violations cited during previous inspections are also conducted by the agency in certain circumstances.

Phone/Fax Investigations

OSHA carefully prioritizes all complaints it receives based on their severity. For lower-priority hazards, with permission of a complainant, OSHA may telephone the employer to describe safety and health concerns, following up with a fax providing details on alleged safety and health hazards. The employer must respond in writing within five (5) working days, identifying any problems found and noting corrective actions taken or planned. If the response is adequate and the complainant is satisfied with the response, OSHA generally will not conduct an on-site inspection.

On-Site Inspections

OSHA has the authority to enter, without delay, and at reasonable times, any construction site to perform an inspection.



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OSHA INSPECTION PROTOCOL

Immediately call the office when OSHA shows up on the job-site. Someone from the office may come out to assist with the inspection, but OSHA cannot be delayed over one hour.

1. OSHA Compliance Officers must show their credentials.
 - a. A Compliance Officer carries U.S. Department of Labor credentials with a photograph and serial number.
 - b. Compliance Officers are not allowed to collect a penalty at the time of the inspection.
 - c. If you desire you may call the local office to make sure that this individual is indeed a Compliance Officer.
2. Opening Conference
 - a. The compliance officer will explain the purpose and scope of the inspection, walk around procedures, employee representation and employee interviews.
 - b. The employer may select a representative to accompany the compliance officer.
 - c. An authorized representative of the employees, also has the right to go along.
3. Inspection Process
 - a. Following the opening conference, the compliance officer and the representatives will walk through the portions of the workplace covered by the inspection.
 - b. The compliance officer will review worksite injury and illness records and the posting of the official OSHA poster.
 - The compliance officer may also ask to review the Company Safety Program and training records.
 - c. The compliance officer will point out unsafe work conditions.
 - Correct all problems immediately, and make necessary documentation.
 - d. The compliance officer may take pictures, notes, and instrument readings as necessary.
 - Take the same pictures that the compliance officer does (and at different angles) and make notes of everything discussed.
 - e. The compliance officer may talk to employees during the inspection process.
4. Closing Conference
 - a. OSHA will discuss all unsafe conditions and will indicate all apparent violations for which a citation may be issued.
 - No specific penalties will be discussed.
 - b. You will be informed of your appeal rights.



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OSHA INSPECTION PROTOCOL

- c. You will be given a copy of “*Employer Rights and Responsibilities Following an OSHA Inspection*”, with an explanation of what is covered.
 - You should produce records showing compliance efforts.
 - You should discuss disciplinary action you have taken for safety violations, and be able to produce documentation.

Inspection Results

When an inspector finds violations of OSHA standards or serious hazards, OSHA may issue citations and fines.

1. OSHA must issue a citation and proposed penalty within six months of the violation’s occurrence.
2. Citations describe OSHA requirements allegedly violated, list any proposed penalties, and give a deadline for correcting the alleged hazards.
 - a. Violations must be abated as soon as possible.
 - b. The citation must be posted at the job for three days, or until the violation is abated, whichever is longer.
 - c. An informal conference must be requested within 15 working days of receipt of the certified letter from OSHA.
3. Violations are categorized as:
 - a. Willful
 - Violation in which the employer either knowingly failed to comply with a legal requirement (purposeful disregard) or acted with plain indifference to employee safety.
 - b. Serious
 - Violation exists when the workplace hazard could cause an accident or illness that would most likely result in death or serious physical harm, unless the employer did not know or could not have known of the violation.
 - c. Other-than-serious
 - A violation that has a direct relationship to job safety and health, but is not serious in nature
 - d. De minimis
 - Technical violations of OSHA rules that do not affect employee safety or health. These violations do not result in citations or fines.
 - e. Failure to abate
 - Employers cited for violations are given a date by which they must remedy the issue. Failing to do so by the specified date is considered a failure to



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OSHA INSPECTION PROTOCOL

abate the prior violation, and it poses a daily fine beyond the abatement date.

- f. Repeated
 - Violations occur when employers have been cited for a violation that is the same or highly similar to a previous citation they received within the past five years.

Citation Schedule

Type of Violation	Penalty
Serious Other-Than-Serious Posting Requirements	\$13,494 per violation
Failure to Abate	\$13,494 per day beyond the abatement date
Willful or Repeated	\$134,937 per violation

Penalty Adjustments

Penalties may be adjusted downward based upon such factors as company size, good faith, and violation history.

1. History Reduction
 - a. An employer who has been inspected by OSHA within the previous five years and has not been issued any serious, willful, repeat, or failure-to-abate citations will receive a 10 percent reduction for history.
2. Good Faith
 - a. A 15 percent penalty reduction is permitted in recognition of an employer's effort to implement an effective workplace safety and health program.
 - b. Employers must have a safety and health program in place to get any good faith reduction.
 - c. Good faith reductions are not allowed in the cases of high gravity serious, willful, repeat, or failure-to-abate violations.
3. Size Reduction
 - a. Penalty reduction structure based on the size of employers for those with less than 250 employees.
 - No size reduction will be applied for employers with 251 or more employees.



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Company Size Penalty Reductions								
Employees	< 10	11-20	21-30	31-40	41-50	51-100	101-250	251 +
Reduction	80%	60%	50%	40%	30%	20%	10%	0%

OSHA Office Contact Information

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PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM

Purpose

The purpose of this “Personal Protective Equipment” (**PPE**) Program is to document the measures in place and PPE in use at our Company work sites. PPE devices are not to be relied on as the only means to provide protection against hazards, but are used in conjunction with guards, engineering controls, and sound construction practices. If possible, hazards will be abated first through engineering controls, secondly through administrative procedures, and finally with PPE to provide protection against hazards which cannot reasonably be abated otherwise.

PPE Selection Guidelines

The general procedures used by this Company for the selection of protective equipment are to:

1. Become familiar with the potential hazards and the type of Personal Protective Equipment (PPE) that is available, and what they can do through a written and certified hazard assessment.
2. Compare the hazards associated with the environment.
3. Select the PPE which ensures a level of protection greater than the minimum required to protect employees from the hazards and fits the ANSI standards specified for that particular type of exposure.
4. Fit the user with the proper, comfortable, well-fitting protective device and give instructions on care and use of the PPE. It is very important that the users are aware of all warning labels for and limitations of their PPE.

It is the responsibility of the Supervisor to re-assess the work site hazard situation as necessary, to identify and evaluate new equipment and processes, to review accident records, and re-evaluate the suitability of previously selected PPE.

Elements which should be considered in the **re-assessment** include:

- Adequacy of PPE program
- Accidents and illness experience
- Levels of exposure
- Adequacy of equipment selection
- Number of person-hours that workers wear various protective ensembles
- Adequacy of training/fitting of PPE
- Program costs
- The adequacy of program records
- Recommendation for program improvement and modification



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PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM

- Coordination with overall safety and health program

Cleaning and Maintenance

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. The Company is responsible for ensuring compliance with cleaning responsibilities by employees.

If PPE is for general use, the Supervisor has the responsibility for cleaning and maintenance. If the piece of PPE is in need of repair or replacement it is the responsibility of the employee to bring it to the immediate attention of the Supervisor. It is against work rules to use a piece of PPE equipment that is in disrepair or not able to perform its intended function.

Contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

Employee-Owned Equipment

It is Company policy that we provide suitable PPE to employees to protect them from all hazards present at Company work sites, except for safety footwear, which is to be provided by the employee and deemed adequate. However, in situations where employees choose to provide their own PPE in lieu of company-provided PPE, it is the Company's responsibility to ensure that such PPE is adequate, properly maintained, and cleaned as necessary to ensure its safety and effectiveness.

To ensure the safety and effectiveness of employee-provided PPE, any employee using his or her own PPE is required to present it to the Supervisor for initial inspection before first using it, then to bring it back to the Supervisor for weekly or daily inspection, depending on the type of PPE and level of usage of it at the work site. The frequency of inspection required will be designated by the Supervisor at the initial inspection.

PPE-Specific Information

Foot Protection-Safety Shoes

It is the policy of the Company that as a condition of employment, all regular full-time, part-time, and temporary employees working at our Company's work sites and/ or job assignments are required to wear boots to help prevent foot injuries, ankle injuries, slips, and falls. Such footwear is to be provided by the employee.



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PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM

Head Protection - Hard Hats

It is the policy of the Company that as a condition of employment, all regular full-time, part-time, and temporary employees working at our Company's work sites, and/ or job assignments, are required to wear hard hats to help prevent head injuries. Such head gear must meet ANSI standards for protective head protection. Subcontractors are required to wear hard hats as well and it is their responsibility to ensure the employee reports to his assignment at this Company wearing approved hard hats.

High-Visibility Clothing

It is the policy of the Company that as a condition of employment, all regular full-time, part-time, and temporary employees working at our Company's work sites, and/ or job assignments, are required to wear high-visibility clothing (vests/shirts) while working in areas with construction and/or pedestrian vehicle traffic. Such gear must meet ANSI standards for high visibility clothing, which requires garments to be made with reflective materials. Subcontractors are required to wear high-visibility clothing as well and it is their responsibility to ensure the employee reports to their assignment at this Company wearing approved high visibility clothing.

On work sites with no construction and/or pedestrian vehicle traffic hazards, safety yellow clothing without reflective materials may be worn in lieu of ANSI high-visibility clothing.

An exemption to this policy is at the request of a client that high visibility clothing not be worn in unique work sites (e.g. active patient care areas in healthcare facilities). If a client requests that high-visibility clothing not be worn, standardized, professional attire will be worn by all employees.

Hearing Protection

Hearing protection is not mandatory. Hearing protection should be worn when working with compressed air tools, and other equipment that the employee may consider to be excessively loud. Please advise your Supervisor if you desire to wear hearing protection.

Eye and Face Protection

All employees are required to use eye and face protection provided by the Company, including safety glasses, welding shields, etc., for activities that require such protection. Many activities include this requirement, cutting, grinding, etc. Specific details are given in the PPE training provided to employees.



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PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM

Harnesses and Safety Nets

Harnesses and safety nets will be used as necessary according to the requirements given in 1926.104 and .105 of the OSHA regulations, for work conducted at heights or in situations requiring it.

Employee Training

1. The Supervisor provides training for each employee who is required to use personal protective equipment. Training includes:
 - When PPE is necessary
 - What PPE is necessary
 - How to wear assigned PPE
 - Limitations of PPE
 - The proper care, maintenance, useful life, and disposal of assigned PPE
2. Employees must demonstrate an understanding of the training and the ability to use the PPE properly before they are allowed to perform work requiring the use of the equipment.
3. Employees shall not perform work without wearing appropriate PPE to protect them from the hazards they will encounter in the course of that work.
4. Employees will not wear defective PPE. Any defective PPE will be replaced.
5. If the Supervisor has reason to believe an employee does not have the understanding or skill required; the employee must be retrained. Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used which would render previous training obsolete. Inadequacies in an affected employee's knowledge or use of the assigned PPE may indicate that the employee has not retained the necessary understanding or skills.
6. The Supervisor certifies in writing that the employee has received, and understands the PPE training.

REQUIRED SAFETY APPAREL

These rules have been adopted for your own protection from personal injury:
(Compliance is mandatory)



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1. Wear adequate construction type boots with appropriate soles.
2. Wear gloves when needed.
3. No loose clothing or jewelry is permitted.
4. Approved hard hats must be worn on all job sites.
5. Hearing protection (muffs or plugs) must be worn on all high noise level jobs.
6. Safety vests will be worn whenever you are out of your vehicle and working near live traffic
7. Safety goggles must be worn when hammering, chipping welding, grinding, working in a dusty atmosphere or during other operations where eye injury may result.
8. Shorts, tennis shoes and sleeveless shirts are prohibited on all job sites.



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RESPIRATORY PROTECTION AWARENESS PROGRAM

In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, our primary objective is to prevent atmospheric contamination. **This will be accomplished, as far as feasible, by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, use of wetting methods, etc.).**

When effective engineering controls are not feasible, or while they are being instituted, we will insist upon the use of appropriate respirators according to the OSHA regulations in 29 CFR 1910.134.

This Company will provide our employees with respirators only when needed to protect their health, and when sufficient engineering methods cannot remove the hazard. We will provide respirators that are applicable and suitable for the purpose intended. We will establish and maintain a respiratory protection program that includes the requirements outlined in paragraph (c) of §1910.134.

Where respirator use is not required, but we either provide respirators at the request of employees or permit employees to use their own respirators, we must determine that such respirator use will not in itself create a hazard. If we determine that any voluntary respirator use is permissible, we will provide the respirator users with the information contained in §1910.134, Appendix D, *Information for Employees Using Respirators When Not Required under the Standard*.

In addition, we will establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.

We will not include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).

We will provide respirators, training, and medical evaluations at no cost to the employee, as required.

Voluntary Use of Respirators

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



RESPIRATORY PROTECTION AWARENESS PROGRAM

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.

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

Exposure Evaluation

The greatest exposure to our employees and employees of sub contractors is the exposure to respirable silica. Respirable silica can be present in the following operations:

1. Demolition
2. Cutting, grinding, and breaking of concrete
3. Cutting of masonry block

It is our Company policy to perform all concrete cutting, and masonry block cutting operations through the use of wet cutting methods. It is imperative that all sub contractors also follow this policy.



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Subcontractors

All subcontractors shall be required to comply with the OSHA standard as it relates to respiratory protection, and any silica exposures. It is the subcontractor's responsibility to provide adequate measures to protect their employees against exposure to respirable silica. Adequate engineering methods to reduce the exposure are preferred over the use of respirators. Engineering methods may include wet cutting processes, etc. No employee of any sub-contractor is to be exposed to respirable silica without the proper use of a respirator. Compliance with the OSHA standard in this regard is mandatory. If the employees of any sub contractor use respirators, it is the responsibility of that sub contractor to comply with all OSHA standards in regards to medical evaluations, respirator selection, fit testing, recordkeeping, etc. Sub contractors are also required to properly use respirators for any other work which may require their use. The types of work outside of the silica exposure may include exposure to gases, vapors, mists, etc.

Respirator Selection

Prior to respirator use, we will select and provide our employees an appropriate respirator. This selection will be based on:

1. Identifying and evaluating the respiratory hazard(s) to which our employee is exposed. The evaluation will include:
 - a. A reasonable estimate of employee exposures to respiratory hazard(s),
 - b. An identification of the contaminant's chemical state and physical form.
2. Workplace and user factors that affect respirator performance and reliability.

We will select a NIOSH-certified respirator. The respirator will be used in compliance with the conditions of its certification.

We will select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the employee.

Particulate Protection

For protection against particulates, we will provide:

1. An atmosphere-supplying respirator; or
2. An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air purifying



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respirator equipped with a filter certified for particulates by NIOSH under 42 CFR part 84; or

3. For contaminants consisting primarily of particles with “Mass Median Aero Dynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

Medical Evaluations

Using a respirator may place a physiological burden on our employees that varies with:

1. The type of respirator worn
2. The job and workplace conditions in which the respirator is used
3. The medical status of our employee

Accordingly, this section of our written safety plan specifies the minimum requirements for medical evaluation that we must implement to determine our employee's ability to use a respirator.

We will provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator.

When our employee is no longer required to use a respirator, we will discontinue our employee's medical evaluations.

Medical Evaluation Procedures

We will identify a “Physician or other Licensed Health Care Professional” (PLHCP) to perform medical evaluations using OSHA’s medical questionnaire (§1910.134, Appendix C).

As an alternative we may use an initial medical examination that obtains the same information as the medical questionnaire. The medical evaluation will obtain the information requested by the questionnaire in Sections 1 and 2, Part A.

Follow-up Medical Examination

We will ensure that a follow-up medical examination is provided for an employee who:



RESPIRATORY PROTECTION AWARENESS PROGRAM

1. Gives a positive response to any question among questions 1 through 8 in Section 2, Part A of the questionnaire, or
2. Whose initial medical examination demonstrates the need for a follow-up medical examination.

The follow-up medical examination will include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

Administration of the Medical Questionnaire and Examination

The medical questionnaire and examination will be administered confidentially during our employee's normal working hours, or at a time and place convenient to the employee. We will ensure our employee understands the contents of the questionnaire.

We will provide our employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

Supplemental information for the PLHCP

We will provide the following information to our PLHCP before a recommendation is made concerning our employee's ability to use a respirator:

1. The type and weight of the employee's respirator.
2. The duration and frequency of respirator use.
3. The expected physical work effort.
4. Additional protective clothing and equipment our employee may wear.
5. Temperature and humidity extremes that our employee may encounter.

We will provide our PLHCP with a copy of this written respiratory protection program and a copy of the respiratory standard.

If we replace a PLHCP, we will ensure the new PLHCP gets all previous information on an employee, either by: (1) providing the documents directly to the new PLHCP, or (2) having the documents transferred from the former PLHCP to the new PLHCP.



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Note: According to the OSHA regulations we do not have to have employees medically reevaluated solely because we selected a new PLHCP.

Medical Determination

In determining our employee's ability to use a respirator, we will:

1. Obtain a written recommendation from the PLHCP. The recommendation shall provide only the following information:
2. Any limitations on respirator use related to the medical condition of our employee, or relating to the workplace conditions in which the respirator will be used, including whether or not our employee is medically able to use the respirator.
3. The need, if any, for follow-up medical evaluations.
4. A statement that the PLHCP has provided our employee with a copy of the written recommendation.

If the respirator is a negative pressure respirator, and the PLHCP finds a medical condition that may place our employee's health at increased risk if the respirator is used, we will provide a PAPR if the PLHCP's medical evaluation finds that our employee can use such a respirator.

If a subsequent medical evaluation finds that our employee is medically able to use a negative pressure respirator, then we are no longer required to provide a "Powered-Air Purifying Respirator" (PAPR).

Additional Medical Evaluations

At a minimum, we will provide additional medical evaluations that comply with the OSHA requirements if:

1. An employee reports medical signs or symptoms that are related to the ability to use a respirator.
2. A PLHCP, supervisor, or our program administrator informs us that our employee needs to be reevaluated.



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3. Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation.
4. A change occurs in workplace conditions such as: physical work effort, protective clothing, or temperature, that may result in a substantial increase in the physiological burden placed on an employee.

Fit Testing

Before we require any employee to use a respirator with a negative or positive pressure tight-fitting facepiece, that employee will be fit tested with the same make, model, style, and size of respirator that will be used.

We will ensure that any employee using a tight-fitting facepiece respirator has passed an appropriate "Qualitative Fit Test" (QLFT) or "Quantitative Fit Test" (QNFT).

We will ensure that an employee using a tight-fitting facepiece respirator is fit tested:

1. Prior to initial use of the respirator.
2. Whenever a different respirator facepiece (size, style, model or make) is used.
3. And at least annually thereafter.

We will conduct an additional fit test whenever:

1. Our employee reports physical condition changes that could affect respirator fit,
2. We, the PLHCP, our supervisor, or program administrator, observes changes in our employee's physical condition that could affect respirator fit.

Such conditions could include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

If after passing a QLFT or QNFT, our employee subsequently notifies us, our program administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable, our employee will be given a reasonable opportunity to select a different respirator facepiece and be re-tested.



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The fit test will be administered using the OSHA-accepted QLFT or QNFT protocol found in Appendix A of the respiratory rule.

Fit testing of tight-fitting atmosphere-supplying and powered air-purifying respirators will be accomplished by performing quantitative or qualitative testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

Any modifications to the respirator facepiece for fit testing will be completely removed, and the facepiece restored to NIOSH-approved configuration, before we use that facepiece in the workplace.

Respirator Use

We will establish and implement procedures for the proper use of respirators. The requirements include:

1. Prohibiting conditions that may result in face piece seal leakage.
2. Preventing employees from removing respirators in hazardous environments.
3. Taking actions to ensure continued effective respirator operation throughout the work shift.
4. Establishing procedures for the use of respirators in IDLH atmospheres.

Face Piece Seal Protection

We will not permit respirators with tight-fitting facepieces to be worn by employees who have:

1. Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or
2. Any condition that interferes with the face-to-facepiece seal or valve function.

If an employee wears corrective glasses or goggles or other personal protective equipment, we will ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.



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For all tight-fitting respirators, we will ensure that employees perform a user seal check each time they put on the respirator using procedures:

1. In Appendix B-1 of the OSHA respiratory protection rule, or
2. Recommended by the respirator manufacturer that we demonstrate are as effective as those in Appendix B-1.

Maintenance and Care

We will provide for the cleaning and disinfecting, storage, inspection, and repair of respirators used by our employees.

Cleaning and Disinfecting

We will provide each respirator user with a respirator that is clean, sanitary, and in good working order.

We will ensure that respirators are cleaned and disinfected using the procedures in Appendix B-2 of the respirator rule, or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness.

Our respirators will be cleaned and disinfected at the following intervals:

1. Respirators issued for the exclusive use of an employee will be cleaned and disinfected as often as necessary to remain sanitary.
2. Respirators issued to more than one employee will be cleaned and disinfected before being worn by different individuals.
3. Respirators maintained for emergency use will be cleaned and disinfected after each use.
4. Respirators used in fit testing and training will be cleaned and disinfected after each use.

Storage

We will ensure that respirators are stored as follows:

1. All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.



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2. They will be packed or stored to prevent deformation of the facepiece and exhalation valve.

In addition to the requirements above, emergency respirators will be:

1. Kept accessible to the work area.
2. Stored in compartments or in covers that are clearly marked as containing emergency respirators.
3. Stored in accordance with any applicable manufacturer instructions.

Inspection

We will ensure that respirators are inspected as follows:

1. All respirators used in routine situations will be inspected before each use and during cleaning.
2. All respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations. They will be checked for proper function before and after each use.
3. Emergency escape-only respirators will be inspected before being carried into the workplace for use.

We will ensure that respirator inspections include:

1. A check of respirator function; tightness of connections; and the condition of the various parts including, but not limited to: the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters.
2. A check of elastomeric parts for pliability and signs of deterioration.

Repairs

We will ensure that respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:



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1. Repairs or adjustments to respirators will be made only by employees appropriately trained to perform such operations and will use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
2. Repairs will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.

Training

We will provide effective training to our employees who are required to use respirators. Our training will be comprehensive, understandable, and recur annually, and more often if necessary. We will provide required training prior to employees using their respirator for work.

If we have employees who wear respirators when not required by the OSHA regulation or by this company to do so, we will provide them with the basic information on respirators in §1910.134, Appendix D.

At a minimum, we will ensure that each employee knows:

1. Why their respirator is necessary and how improper fit, usage, or maintenance can compromise its protective effect.
2. What the limitations and capabilities of the respirator are.
3. How to inspect, put on and remove, use, and check the seals of the respirator.
4. What the procedures are for maintenance and storage of their respirator.
5. How to recognize medical signs and symptoms that may limit or prevent the effective use of their respirator.
6. The general requirements of the OSHA respiratory protection rule.

We will conduct our training in a manner that is understandable to our employees. If we are able to demonstrate that a new employee has received training within the last 12 months that addresses the elements specified in §1910.134(k)(1)(i) through (vii), that employee will not be required to repeat the training provided that, as required by paragraph (k)(1), we can demonstrate knowledge of those element(s). Any training that



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is not repeated initially will be provided no later than 12 months from the date of the previous training.

Retraining will be administered annually, and when the following situations occur:

1. Changes in the worksite, or the type of respirator, render previous training obsolete.
2. Inadequacies in our employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill.
3. Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Program Evaluation

It is inherent in respirator use that problems with protection, irritation, breathing resistance, comfort, and other respirator-related factors occasionally arise in most respirator protection programs. Although it is not possible to eliminate all problems associated with respirator use, we try to eliminate as many problems as possible to improve respiratory protection and encourage employee acceptance and safe use of respirators. By having our program administrator, (Our Safety Director), thoroughly evaluate and, as necessary, revise our Respiratory Protection Program, we can eliminate problems effectively.

At our company, program evaluation, is performed by our Safety Director, involves the following:

1. Conducting evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.
2. Regularly consulting employees required to use respirators to assess their views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected. Factors to assess include, but are not limited to:
 - a. Respirator fit (including the ability to use the respirator without interfering with effective workplace performance).
 - b. Appropriate respirator selection for the hazards to which the employee is exposed.



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- c. Proper respirator use under the workplace conditions the employee encounters.
- d. Proper respirator maintenance.

We will conduct evaluations of our worksites to ensure that the written respiratory protection program is being properly implemented and continues to be effective.

We will consult employees to ensure they are using their respirators properly.

We will conduct evaluations of the workplace as necessary to ensure that the provisions of our current written program are being effectively implemented and that it continues to be effective.

Continuing Respirator Effectiveness

Appropriate surveillance must 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.

- 1. Ensure that employees leave the respirator use area:
 - a. To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or
 - b. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or
 - c. To replace the respirator or the filter, cartridge, or canister elements.
- 2. If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, replace or repair the respirator before allowing the employee to return to the work area.

Procedures for IDLH Atmospheres

Ensure that:

- 1. One employee or, when needed, more than one employee is located outside the IDLH atmosphere;
- 2. Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;



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3. The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
4. The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;
5. The employer or designee authorized to do so by the company, once notified, provides necessary assistance appropriate to the situation;
6. Employee(s) located outside the IDLH atmospheres are equipped with:
7. Pressure demand or other positive pressure self-contained breathing apparatuses (SCBAs), or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either:
8. 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; or
9. Equivalent means for rescue where retrieval equipment is not required under the bullet item above this one.

Air Quality Procedures

When atmosphere-supplying respirators are being used to protect employees it is essential to ensure that the air being breathed is of sufficiently high quality. Our company's procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators include coverage of the following OSHA requirements:

Compressed Air, Compressed Oxygen, Liquid Air, and Liquid Oxygen Used for Respirators

1. Compressed and liquid oxygen must meet the United States Pharmacopoeia Requirements for medical or breathing oxygen.
2. Compressed breathing air must meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

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3. Oxygen content (v/v) of 19.5-23.5%;
4. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
5. Carbon monoxide (CO) content of 10 parts per million (ppm) or less;
6. Carbon dioxide content of 1,000 ppm or less; and
7. Lack of a noticeable odor.
8. Ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.
9. Ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

Cylinders Used to Supply Breathing Air to Respirators

1. Cylinders must be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR 173 and 178).
2. Cylinders of purchased breathing air must have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
3. The moisture content in the cylinder must not exceed a dew point of -50 deg. F (-45.6 deg. C) at 1 atmosphere pressure.

Compressors

Ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:

1. Prevent entry of contaminated air into the air-supply system;
2. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 deg. C) below the ambient temperature;



RESPIRATORY PROTECTION AWARENESS PROGRAM

3. Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters must be maintained and replaced or refurbished periodically following the manufacturer's instructions; and
4. Have a tag containing the most recent change date and the signature of the person authorized by our company to perform the change. The tag must be maintained at the compressor.
5. For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
6. For oil-lubricated compressors, use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply must be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

Breathing Air Couplings

Ensure that breathing air couplings are incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance must be introduced into breathing air lines.

Breathing Gas Containers

Use breathing gas containers marked in accordance with the NIOSH respirator certification standard, 42 CFR 84.

Filters, Cartridges, and Canisters

Ensure that all filters, cartridges and canisters used in the workplace are labeled and color-coded with the NIOSH approval label and that the label is not removed and remains legible.

Recordkeeping

We will establish and retain written information regarding medical evaluations, fit testing, and the respirator program. This information will:

1. Facilitate employee involvement in the respirator program.
2. Assist us in auditing the adequacy of the program.
3. Provide a record for compliance determinations by OSHA.



RESPIRATORY PROTECTION AWARENESS PROGRAM

Medical evaluation

Records of medical evaluations required by this section will be retained and made available in accordance with 29 CFR 1910.1020.

Fit Testing

We will establish a record of the qualitative and quantitative fit tests given to an employee including:

1. The name or identification of the employee tested.
2. Type of fit test performed.
3. Specific make, model, style, and size of respirator tested.
4. Date of test.
5. The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTS.

Fit test records will be retained for respirator users until the next fit test is administered.

A written copy of the current respirator program will be retained by the employer.

Written materials required to be retained under this paragraph will be made available upon request to affected employees.



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RESPIRABLE CRYSTALLINE SILICA PROGRAM

Purpose

This Respirable Crystalline Silica Program was developed to prevent employee exposure to hazardous levels of Respirable Crystalline Silica that could result through construction activities or nearby construction activities occurring on worksites. Respirable Crystalline Silica exposure at hazardous levels can lead to lung cancer, silicosis, chronic obstructive pulmonary disease, and kidney disease. It is intended to meet the requirements of the Respirable Crystalline Silica Construction Standard established by OSHA

All work involving chipping, cutting, drilling, grinding, or similar activities on materials containing Crystalline Silica can lead to the release of respirable-sized particles of Crystalline Silica. Crystalline Silica is a basic component of soil, sand, granite and many other minerals. Quartz is the most common form of Crystalline Silica. Many materials found on construction sites include Crystalline Silica; including but not limited to – cement, concrete, asphalt, pre-formed structures (inlets, pipe, etc.) and others. Consequently, this program has been developed to address and control these potential exposures to prevent our employees from experiencing the effects of occupational illnesses related to Respirable Crystalline Silica exposure.

Exposure Control Methods

When possible and applicable, this Company will conduct activities with potential Silica exposure to be consistent with OSHA’s Construction Standard Table 1. Supervisors will ensure each employee under their supervision and engaged in a task identified on OSHA’s Construction Standard Table 1 have fully and properly implemented the engineering controls, work practices, and respiratory protection specified for the task on Table 1, unless the Company has assessed and limited the exposure of the employee to Respirable Crystalline Silica in accordance with the Alternative Exposure Control Methods Section of this program.

Table 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
1	Stationary masonry saws	<ul style="list-style-type: none"> Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with 	None	None



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Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
		manufacturer's instructions to minimize dust emissions.		
2a	Handheld power saws (any blade diameter) when used outdoors	<ul style="list-style-type: none"> Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
2b	Handheld power saws (any blade diameter) when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
3	Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less) for tasks performed outdoors only	<ul style="list-style-type: none"> Use saw equipped with commercially available dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency. 	None	None
4a	Walk-behind saws when used outdoors	<ul style="list-style-type: none"> Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
4b	Walk-behind saws when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
5	Drivable saws for tasks performed outdoors only	<ul style="list-style-type: none"> Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
6	Rig-mounted core saws	<ul style="list-style-type: none"> Use tool equipped with integrated water 	None	None



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Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
	or drills	<ul style="list-style-type: none"> delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 		
7	Handheld and stand-mounted drills (including impact and rotary hammer drills)	<ul style="list-style-type: none"> Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes. 	None	None
8	Dowel drilling rigs for concrete for tasks performed outdoors only	<ul style="list-style-type: none"> Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes. 	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
9a	Vehicle-mounted drilling rigs for rock and concrete	<ul style="list-style-type: none"> Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector. 	None	None
9b	Vehicle-mounted drilling rigs for rock and concrete	<ul style="list-style-type: none"> Operate from within an enclosed cab and use water for dust suppression on drill bit. 	None	None
10a	Jackhammers and handheld powered chipping tools when used outdoors	<ul style="list-style-type: none"> Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. 	None	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
10b	Jackhammers and handheld powered chipping tools when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. 	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
10c	Jackhammers and	<ul style="list-style-type: none"> Use tool equipped with commercially available 	None	N95 (or



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Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
	handheld powered chipping tools when used outdoors	<ul style="list-style-type: none"> shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. 		Greater Efficiency) Filtering Facepiece or Half Mask
10d	Jackhammers and handheld powered chipping tools when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. 	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
11	Handheld grinders for mortar removal (i.e., tuckpointing)	<ul style="list-style-type: none"> Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. 	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask	Powered Air-Purifying Respirator (PAPR) with P100 Filters
12a	Handheld grinders for uses other than mortar removal for tasks performed outdoors only	<ul style="list-style-type: none"> Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
12b	Handheld grinders for uses other than mortar removal when used outdoors	<ul style="list-style-type: none"> Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism 	None	None



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Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
12c	Handheld grinders for uses other than mortar removal when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. 	None	N95 (or Greater Efficiency) Filtering Facepiece or Half Mask
13a	Walk-behind milling machines and floor grinders	<ul style="list-style-type: none"> Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
13b	Walk-behind milling machines and floor grinders	<ul style="list-style-type: none"> Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes. 	None	None
14	Small drivable milling machines (less than half-lane)	<ul style="list-style-type: none"> Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. 	None	None
15a	Large drivable milling machines (half-lane and larger) for cuts of any depth on asphalt only	<ul style="list-style-type: none"> Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions. 	None	None
15b	Large drivable milling machines (half-lane and larger) for cuts of four inches in depth or	<ul style="list-style-type: none"> Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. 	None	None



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Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
	less on any substrate	<ul style="list-style-type: none"> Operate and maintain machine to minimize dust emissions. 		
15c	Large drivable milling machines (half-lane and larger) for cuts of four inches in depth or less on any substrate	<ul style="list-style-type: none"> Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. 	None	None
16	Crushing machines	<ul style="list-style-type: none"> Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station. 	None	None
17a	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	<ul style="list-style-type: none"> Operate equipment from within an enclosed cab. 	None	None
17b	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	<ul style="list-style-type: none"> When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions. 	None	None
18a	Heavy equipment and utility vehicles for tasks such as grading and excavating but not	<ul style="list-style-type: none"> Apply water and/or dust suppressants as necessary to minimize dust emissions. 	None	None



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Construction Task or Equipment Operation		Engineering and Work Practice Control Methods	Required Respiratory Protection	
			≤ 4 hours/shift	>4 hours/shift
	including demolishing, abrading, or fracturing silica-containing materials			
18b	Heavy equipment and utility vehicles for tasks such as grading and excavating but not including demolishing, abrading, or fracturing silica-containing materials	<ul style="list-style-type: none"> When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab. 	None	None

Alternative Exposure Control Methods

Employers that conduct tasks not listed in Table 1 or do not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1 of the specified exposure control methods approach, must follow the alternative exposure control methods approach. The alternative exposure control methods approach involves assessing employee exposure to respirable crystalline silica, and limiting exposure to the permissible exposure level, PEL, using feasible engineering and work practice control methods, and respiratory protection when necessary.

Exposure Assessment

When following alternative exposure control methods, the Company must assess the 8-hour TWA exposure for 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 as an 8-hour TWA. The purposes of assessing employee exposures include:

1. Identifying where exposures are occurring;
2. Helping the employer select control methods and make sure those methods are effective;
3. Preventing employees from being exposed above the PEL;
4. Providing employees with information about their exposure levels; and



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5. Allowing the employer to give the physician or other licensed healthcare provider performing medical examinations information about employee exposures.

When assessing exposures, the Company may choose between a performance option, or scheduled monitoring.

1. Performance Option – the Company will 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.
2. Scheduled Monitoring Option:
 - a. The Company will 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, and in each work area.
 - b. If initial monitoring indicates that employee exposures are below the Action Level, the Company will probably discontinue monitoring for those employees whose exposures are represented by such monitoring.
 - c. Where the most recent exposure monitoring indicates that employee exposures are at or above the Action Level, but at or below the PEL, the Company will repeat such monitoring within six months of the most recent monitoring.
 - d. Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the Company will repeat such monitoring within three months of the most recent monitoring.
 - e. Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the Company shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken 7 or more days apart, are below the action level, at which time the Company may discontinue monitoring for those employees whose exposures are represented by such monitoring.

The Company will notify each affected employee of the results of the exposure assessment within 5 working days of completing the assessment. The Company will either notify each employee in writing or post the results in a location that all affected employees can access.



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Methods of Compliance

If the Company chooses to follow alternative exposure control methods, the Company must comply with the methods of compliance requirements of the silica standard. The methods of compliance section of the standard requires employers to protect employees following the hierarchy of controls, which relies on engineering and work practice controls for reducing exposures and allows for respirator use, in addition to those controls, only when feasible engineering controls cannot reduce exposures to acceptable levels.

Employers must use engineering and work practice controls to reduce and keep employee exposure to respirable crystalline silica to or below the PEL of 50 µg/m³, unless the employer can demonstrate that such controls are not feasible. If feasible engineering and work practice controls are not able to reduce employee exposures to or below the PEL, employers must still use feasible controls to reduce exposures to the lowest possible level and then use respiratory protection along with those controls.

1. Engineering controls eliminate or reduce exposure to a chemical or physical hazard through the use or substitution of engineered machinery or equipment. The main types of engineering controls for silica are:
 - a. Wet methods involve applying water or foam at the point of dust generation to keep dust from getting into the air. An example is an integrated water delivery system on a stationary masonry saw.
 - b. Local exhaust ventilation removes dust by capturing it at or near the point where it is created. An example is a dust collector for a handheld grinder.
 - c. Isolation separates employees from the dust source by containing the dust or isolating employees. An example is a properly ventilated cab on heavy equipment.
2. Work practice controls: involve performing a task in a way that reduces the likelihood or levels of exposure. Work practice controls are often used with engineering controls to protect employees. Examples of work practice controls include:
 - a. Inspecting and maintaining controls to prevent or fix malfunctions that would result in increased exposures;
 - b. Making sure that nozzles spray water at the point of dust generation for wet method controls;
 - c. Making sure that hoses are not kinked on a tool used with a dust collector;
 - d. Wetting down silica dust before sweeping it up; and



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- e. Scheduling work so that tasks that involve high exposures are performed when no other employees are in the area.
3. Under the hierarchy of controls, respirators can be used as a method to protect employees that are exposed to respirable crystalline silica. If respirators are worn to protect employees from silica hazards, the Respiratory Protection Program must be adhered to for respirator use.

Medical Surveillance

Medical surveillance will be made available for each employee who will be required to use a respirator for 30 or more days per year due to their Respirable Crystalline Silica exposure. The employee will be subject to all examinations deemed necessary under the OSHA Respirable Crystalline Silica Standard.

Housekeeping

When cleaning up dust that could contribute to employee exposure to respirable crystalline silica, the Company must:

1. Not allow dry brushing or dry sweeping, unless methods such as wet sweeping and HEPA-filtered vacuuming are not feasible;
2. Not allow cleaning of surfaces or clothing with compressed air, unless the compressed air is used together with a ventilation system that effectively captures the dust cloud or no other cleaning method is feasible



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RETURN-TO-WORK PROGRAM

Purpose

The purpose of this Return-to-Work Program is to help enable healthy recovery and resumption of full capabilities by injured or ill employees whose injury or illness initially restricts their ability to perform their normal job duties. Employees are the Company's most important asset, and the company strives to ensure the best possible safety, health, and performance for every employee.

Initial Return-To-Work

At the time the Safety Director is made aware of an employee's restricted status, the following steps shall be taken:

1. Request the diagnosing physician to submit in writing exact medical restrictions on the patient.
2. Upon receipt of that written restriction summary, send a copy to the insurance carrier and the employee's supervisor.
3. Request the employee's supervisor to determine an alternate duty assignment based on the written restrictions.
4. Contact the employee and inform him or her about the alternate duty assignment within his or her capability based on medical restrictions. Explain this Return-To-Work Program to the employee and how he or she will benefit by participating in it.
 - a. In workers' compensation cases, inform the employee he or she is required to return to work and begin these alternate duties.
 - b. In the case of personal injury or illness unrelated to work, inform the employee of their option to return and assume these alternate duties at this time. (This is not an open-ended offer. If the employee in this case refuses initially, he or she may not be able to return on the same conditions later, because the offered duties may have been assumed by someone else.)
5. If a workers' compensation case employee does not return as requested, repeat contact and reiterate request.



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RETURN-TO-WORK PROGRAM

Periodic Reassessments

Once the employee is situated in an alternate duty assignment, the diagnosing doctor should make periodic written reassessments as to employee restrictions to be sent to the Safety Director. These reassessments are to be done in periods no longer than a month apart.

As the reassessments indicate increased health, the supervisor should be informed that the employee should assume more and more duties of his or her original job at time of injury/illness.

Resumption of Original Job

When written assessments indicate the employee is able to resume normal duties of original job at time of injury, the Safety Director shall inform the employee and have the employee do so.



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SCAFFOLDING PROCEDURES

Purpose

It is the purpose of this Company in issuing these procedures to further ensure a safe workplace based on the following formal, written procedures for scaffold work.

These procedures will be reviewed and updated as needed to comply with new OSHA regulations, new best practices in scaffolding, and as business practices demand.

Application

This general scaffold plan applies to:

1. All employees who perform work while on a scaffold.
2. All employees who are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds.
3. All company scaffolds on sites where this company is doing work.

Specific Procedures

In addition to the general procedures in this written safety plan, there are procedures that apply to specific types of scaffolds. The safety rules for these specific types of scaffolds are found in 1926.452.

General Procedures

The following general procedures apply to all scaffold and aerial lift operations for this Company.

Capacity

Taking into account the OSHA rules we must apply and the engineering/manufacturing requirements of our scaffolds, the following rules apply.

1. Each scaffold and scaffold component we use will support, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
2. When we use non-adjustable suspension scaffolds, each suspension rope, including connecting hardware, will support, without failure, at least six times the maximum intended load applied or transmitted to that rope.



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SCAFFOLDING PROCEDURES

Platform Construction

This section reflects the procedures and safety requirements we will use to construct our scaffold platforms. Included here is a description of the type(s) of scaffold(s) being erected, planking used, walkways required for each scaffold erected, fall protection used (guardrails or personal fall arrest), and other requirements for platform construction.

The following safety rules apply for this scaffold platform construction:

1. Each scaffold plank will be installed so that the space between adjacent planks and the space between the platform and uprights is no more than one inch wide. If, in certain situations, we need to make this space wider, we will attach our demonstration as Attachment.
2. Except for outrigger scaffolds (3 inches) and plastering and lathing operations (18 inches), the front edge of all platforms will not be more than 14 inches from the face of the work, unless we have a guardrail or personal fall arrest system in place that meets regulations.

Supported Scaffolds

Supported scaffolds with a height to base width ratio of more than four to one (4:1) must be restrained from tipping by guying, tying, bracing, or equivalent means.

Supported scaffold poles, legs, posts, frames, and uprights will always bear on **base plates** and mud sills or other adequate firm foundations.

Suspension Scaffolds

Before a scaffold is used, all direct connections will be evaluated by our competent person. Our competent person will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads that will be imposed.

When winding drum hoists are used on a suspension scaffold, they will never contain less than four wraps of the suspension rope at the lowest point of scaffold travel.

Gaining Access to Scaffolds

We know that getting to the working platform is critical to the safety of our employees. This section outlines the requirements for gaining access to scaffold platforms. Access to scaffolds can include ladders, stair towers, ramps and walkways, integral prefabricated scaffold frames, and direct access from adjacent structures.



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1. Access must not be more than 2 feet above or below the scaffold platforms.
2. Direct access is acceptable when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surfaces.
3. Tubular welded frame scaffolds with horizontal members that are parallel, level, and 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.
4. Utilizing the cross-braces to access scaffolding is prohibited.
5. Employees erecting and dismantling supported scaffolding must have a safe means of access provided when the competent person has determined the feasibility and analyzed the site conditions.

Fall Protection Plan

Fall protection planning is critical to the safety and well-being of our employees. Any employee working on a scaffold more than 10 feet above a lower level will be protected from falls.

This fall protection plan for our working employees is for the following type(s) of scaffolds:

1. [Single - or two - point adjustable suspension scaffold](#) - We will protect each employee on our single - or two - point adjustable suspension scaffolds by a guardrail system and a personal fall arrest system.
2. [Self - contained adjustable scaffold supported by the frame structure](#) - We will protect each employee on our self-contained, frame structure supported, adjustable scaffolds by a guardrail system or personal fall protection.

Falling Object Protection

All employees **must wear hardhats** when working on, assembling, or dismantling scaffolds. This is our primary protection from falling objects. Additionally, we will:

1. Install guardrail systems with toe boards to protect workers of potential falling objects.



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SCAFFOLDING PROCEDURES

2. If toe boards are not installed on scaffolds and there is a potential for falling objects or debris, **barricade the area below the scaffold.**

Using Scaffolds

Site preparation, scaffold erection, fall protection, and gaining access to the working platform is only part of the requirements for scaffold work. While this all takes concentration and safe work practices, the most dangerous time can be when employees are concentrating on their work and not particularly aware of the hazards of working from scaffolds.

It is critical that employees who use scaffolds be trained, among other things, in the recognition of the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.

Our competent person will inspect all scaffolds and scaffold components for visible defects before each work shift, and after any occurrence which could affect a scaffold's structural integrity. However, in addition to that, all users of scaffolds in this Company will know and understand the following safety rules:

1. Scaffolds and scaffold components will never be loaded in excess of their maximum intended loads or rated capacities.
2. Debris must not be allowed to accumulate on platforms.

Prohibited Practices

The following practices will never be tolerated in this Company:

1. Scaffold components manufactured by different manufacturers will never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.
2. Unstable objects will never be used to support scaffolds or platform units. Footings must be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
3. Cross-braces will never be used as a means of access.
4. The use of shore or lean-to scaffolds is prohibited.



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5. No modifications shall be made to any scaffold component or system. (See scaffold modification section)

Duties of Competent and Qualified Persons

When working with scaffolds in this Company there are some tasks that must be done by our competent or a qualified person. By definition they are:

1. 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 authorization** to take prompt corrective measures to eliminate them.
2. 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/her ability to solve or resolve problems related to the subject matter, the work, or the project.

The following tasks will only be done by the person we have deemed competent or qualified to perform.

Competent Person

1. We will not intermix scaffold components manufactured by different manufacturers unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components manufactured by different manufacturers will not be modified in order to intermix them unless our competent person determines the resulting scaffold is structurally sound.
2. Before a suspension scaffold is used, direct connections must be evaluated by our competent person who will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed.
3. Prior to each work shift and after every occurrence which could affect a rope's integrity, suspension scaffold ropes will be inspected by our competent person, Ropes will be replaced if any of the conditions outlined in 1926.451(d)(10) exist.
4. Scaffolds will be erected, moved, dismantled, or altered only under the supervision and direction of a competent person.



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Qualified Person

1. Scaffolds must be designed by a qualified person and shall be constructed and loaded in accordance with that design.
2. Swaged attachments or spliced eyes on wire suspension ropes of suspension scaffolds will not be used unless they are made by the wire rope manufacturer or a qualified person.
3. We will have each employee who performs work while on a scaffold 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.

Employees Who Use Scaffolds

Our employees who perform work on scaffolds will be trained by a qualified person 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 will include the following areas as applicable:

1. The nature of and the correct procedures for dealing with electrical hazards.
2. The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object protection systems used.
3. The proper use of the scaffold, and the proper handling of materials on the scaffold.
4. The maximum intended load and the load-carrying capacities of the scaffold used.
5. Familiarity with tagging system and necessity that all scaffolds be tagged prior to use, and that all scaffolds not approved be tagged appropriately.
6. Any other pertinent requirements of the OSHA rules.



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Employees Who Erect, Disassemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds:

Any employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds will be trained by a competent person to recognize the hazards associated with the work being done. The training will include the following topics as applicable:

1. The nature of scaffold hazards.
2. The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.
3. The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
4. Any other pertinent requirements of this subpart.

Unsafe Equipment

Any scaffold that has any defect shall not be used by any worker. The scaffold shall be appropriately tagged as not in service, and may not be used until it has been repaired or defects corrected.

Scaffold Modifications

No modifications shall be made to any scaffold system that is not approved by the scaffold manufacturer. In no way shall be scaffold frames be cut or altered in any way for use at any of our job sites. Modifications made to scaffold components must be reviewed and certified by a professional engineer prior to use (this will only be approved in rare circumstances).

Any unapproved modifications made to any scaffold components by unqualified individuals will be met with immediate disciplinary action, which may include immediate termination of employment. Disciplinary action will be decided upon by the safety committee in compliance with our written disciplinary guidelines. We waive our duty to provide verbal or written warnings based upon the severity of this safety breach.

Employees Who Need Retraining:

When we have reason to believe that any employees lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, we will insist upon retraining of the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:



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1. Where changes at the worksite present a hazard about which the employee has not been previously trained.
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.
3. Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.



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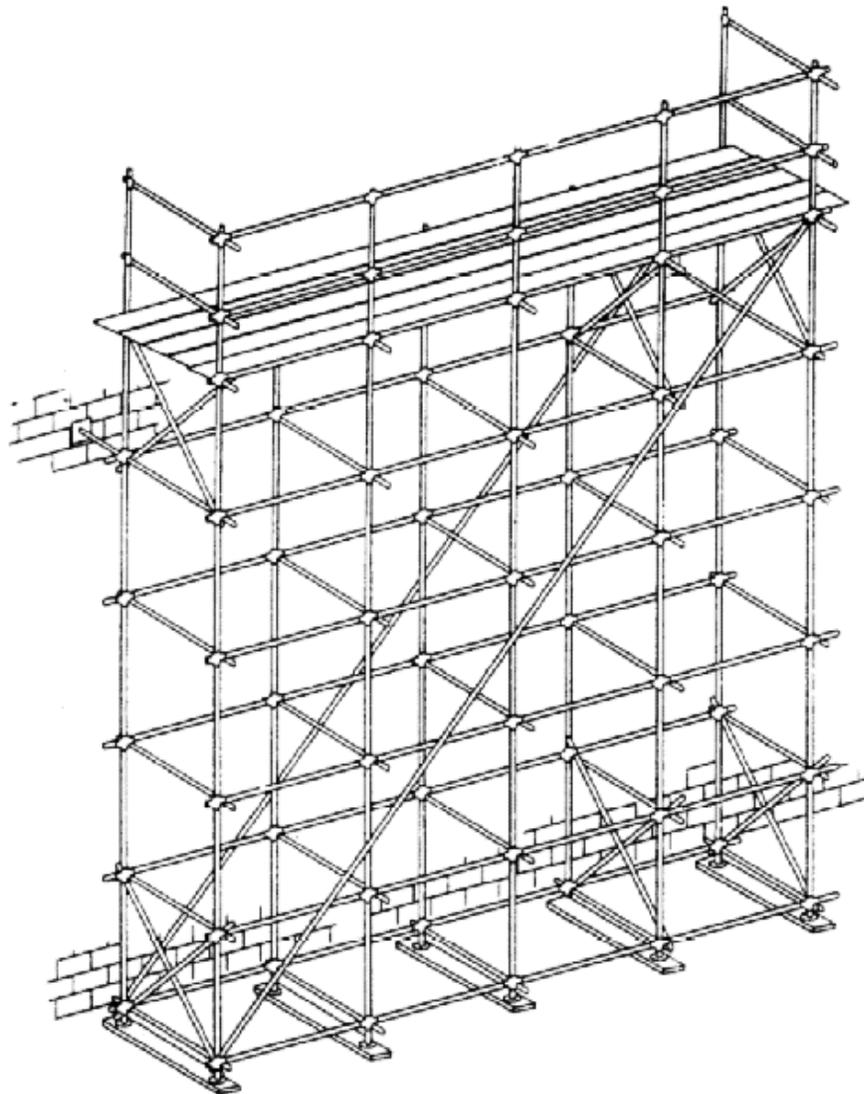
SCAFFOLDING PROCEDURES

Drawings and Illustrations

This Appendix provides drawings of particular types of scaffolds and scaffold components, and graphic illustrations of bracing patterns and tie spacing patterns.

This Appendix is intended to provide visual guidance to assist the user in complying with the requirements of subpart L, part 1926.

BRACING-TUBE & COUPLER





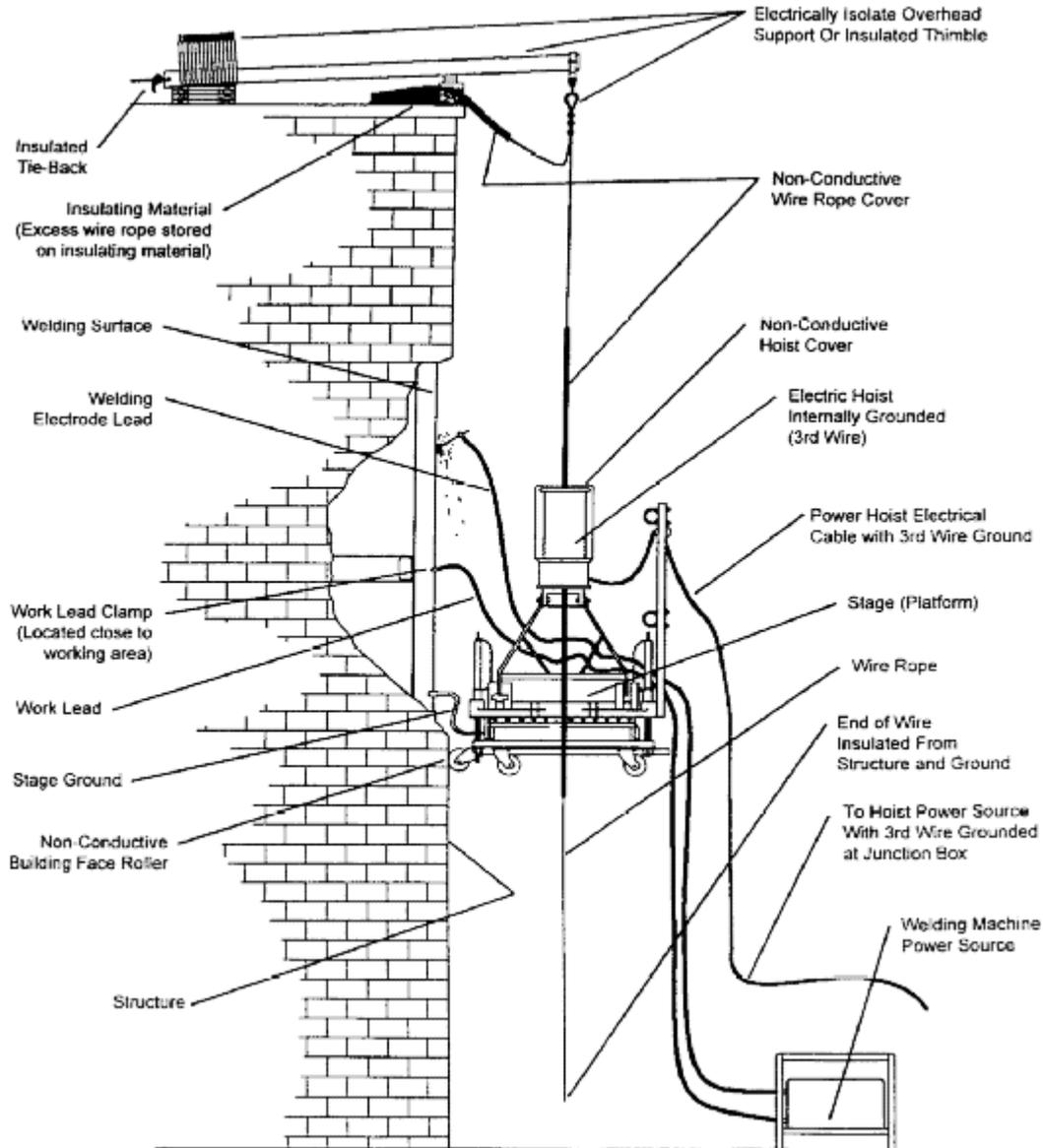
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SUSPENDED SCAFFOLD PLATFORM WELDING PRECAUTIONS



**Hoists Must Be Electronically Isolated From Scaffold
MAXIMUM VERTICAL TIE SPACING
WIDER THAN 3'-0" BASES**

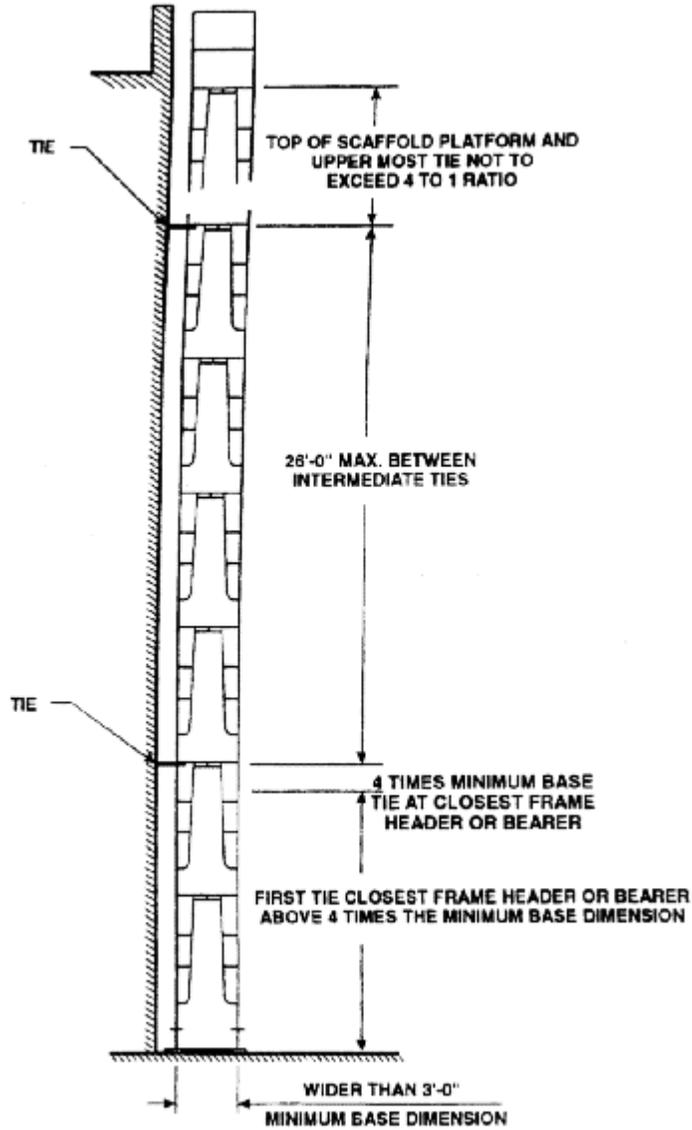


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MAXIMUM VERTICAL TIE SPACING 3'-0" AND NARROWER BASES

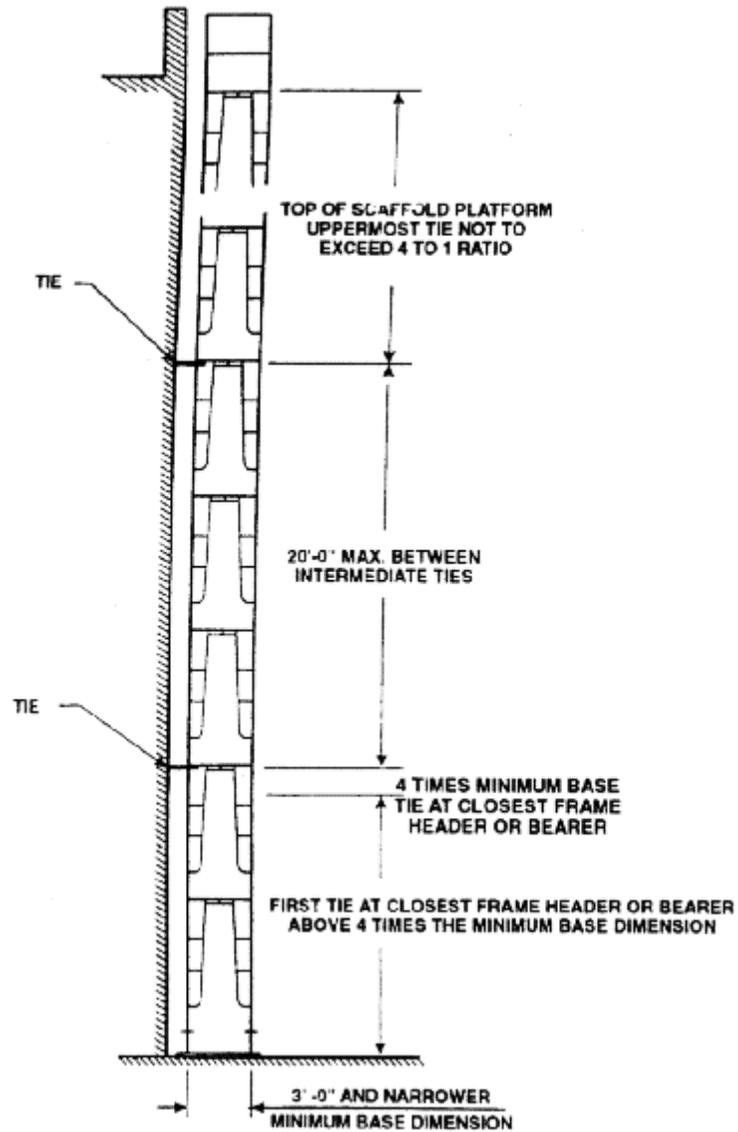


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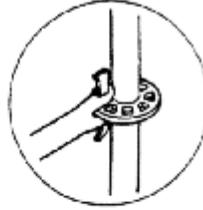
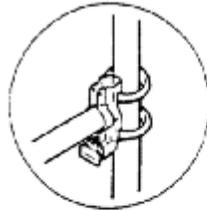
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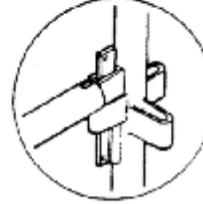
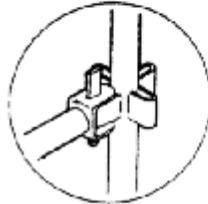
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SCAFFOLDING PROCEDURES

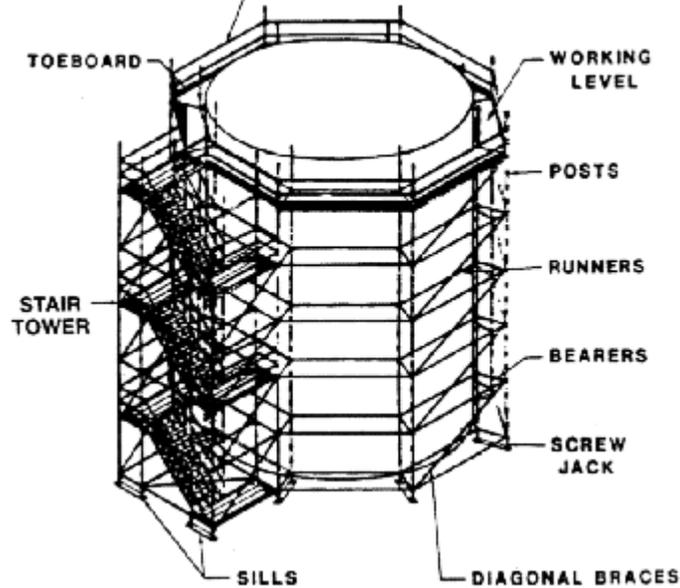
SYSTEM SCAFFOLD



JOINT CONNECTIONS
VARY ACCORDING
TO MANUFACTURER



GUARD RAIL SYSTEM





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SCAFFOLDING PROCEDURES

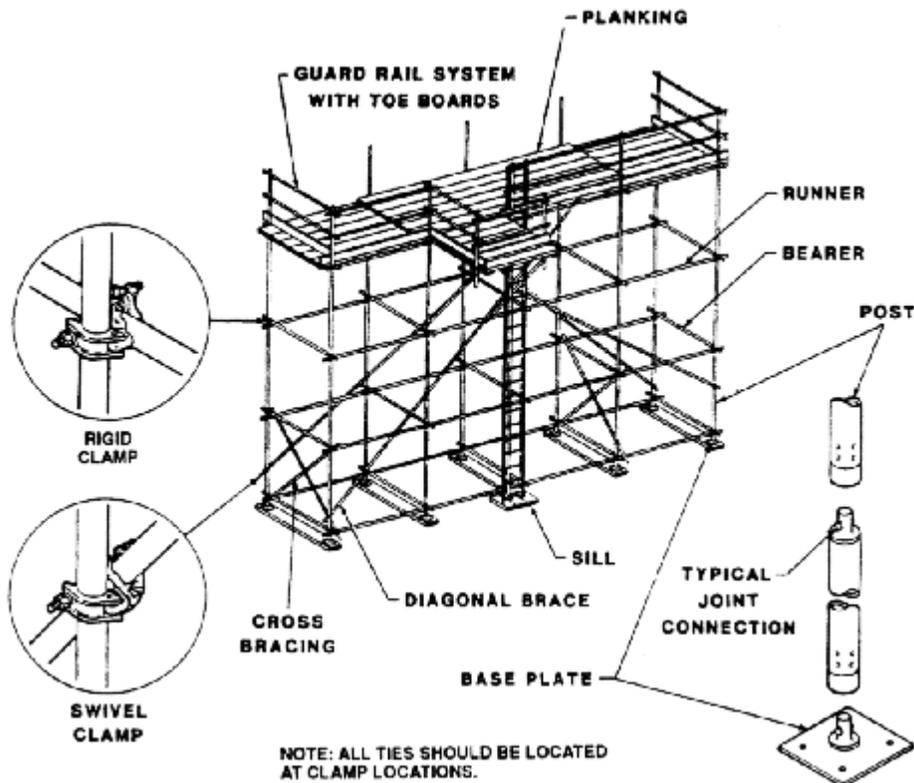
SPIB® DNS IND 65
KD19 S-DRY (7)
SCAFFOLD PLANK

MILL 10
WC LB SEL STR
SCAF PLK
D. FIR S. DRY

Grade stamp courtesy of Southern Pine Inspection Bureau

Grade stamp courtesy of West Coast Lumber Inspection Bureau

TUBE and COUPLER SCAFFOLD





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SCAFFOLDING WORK SURFACES



LAMINATED
VENIER
LUMBER
(LVL)



SOLID
SAWN
LUMBER

SCAFFOLD PLANKS



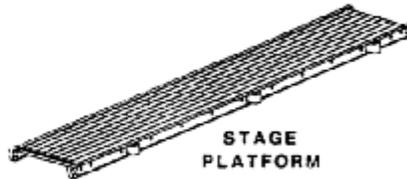
FABRICATED
SCAFFOLD
DECK



FABRICATED
SCAFFOLD
PLANK



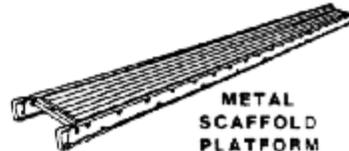
DECORATOR PLANK



STAGE
PLATFORM



WOOD
SCAFFOLD
PLATFORM



METAL
SCAFFOLD
PLATFORM



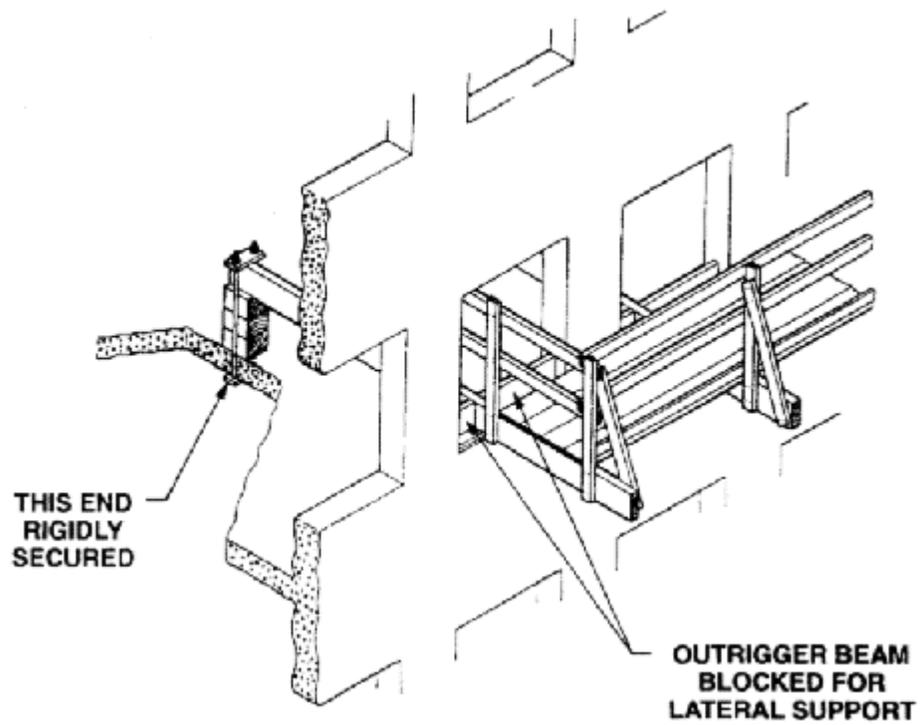
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OUTRIGGER SCAFFOLD





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SPILL PREVENTION/CONTINGENCY PLAN

Purpose

The main purpose of the Plan is to help Ringland-Johnson Construction personnel prepare for and respond quickly and safely to hazardous spill incidents. If implemented appropriately, the plan will ensure an effective, comprehensive response to prevent injury or damage to the construction personnel, public, and environment during the project.

Hazards Assessment

The hazardous materials that may be on site during installation include those usually associated with the operation and maintenance of vehicles and machinery, and include diesel fuel, gasoline, hydraulic fluid, brake fluid, antifreeze, and lubricants. Other materials considered hazardous are chemicals used in portable toilets and the associated human waste. There is also the possibility of encountering buried hazardous or toxic materials during construction operations. Each of these hazards are discussed briefly below.

Vehicle Fluids:

The materials associated with vehicle operation and maintenance are hazardous to humans, wildlife, and sensitive environments. Spills of diesel fuel, gasoline, hydraulic fluid, brake fluid, engine oil, lubricants, etc. are considered serious and emergency response procedures must be initiated. These materials can be toxic to skin, eyes, respiratory system, and internal organs. Toxicity can be transmitted in the form of liquid or vapor. These materials may also be flammable and combustible, and proper precautions must be used in handling spills. Antifreeze, Freon, and other non-petroleum products are also hazardous toxic substances. The same spill prevention and response actions are to be employed with spills of these materials.

Potential sources of spills of vehicle fluids include mobile refueling trucks and construction vehicles and equipment. Potential causes of vehicle fluid spills include: emergency ruptures in fuel tanks or construction equipment; overflow of fuel from the tank during the refueling of equipment; seepage of fuel or lubricants during normal operation or storage; spills of oil or hydraulic fluid, etc. during on-site vehicle and equipment servicing; vehicle accidents; and natural disasters.

Chemical Toilets and Human Waste:

Proper disposal and disinfection of human waste at the construction site is required. Human waste may contain infectious bacteria, pathogens, or other health hazards. Waste must be contained in portable toilets that receive periodic cleaning and disposal of waste. Chemicals used in toilets are also hazardous to wildlife and sensitive



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SPILL PREVENTION/CONTINGENCY PLAN

environments. Portable chemical toilets could overflow if not pumped regularly, or they could spill if dropped or overturned during moving.

Spill Prevention and Containment

The number one defense against spill is prevention. The easiest way to prevent spills is to:

1. Conduct proper vehicle maintenance and inspections;
2. Never place vehicles or equipment in or near sensitive environments,
3. Store all materials in protected areas that are clean and organized following best housekeeping practices.

Vehicle Fluids:

All personnel shall be trained to maintain and inspect their vehicles and equipment. All machinery found to be a potential source of a future spill shall be removed from the construction site and repaired. Vehicles with chronic or continuous leaks must be removed from the construction site and repaired before returning to operations. No leaking of any material from equipment or vehicles will be tolerated on the job site.

Restrictions will be placed on all equipment refueling, servicing, and maintenance supplies and activities. All maintenance materials, oils, grease, lubricants, antifreeze, etc. shall be stored off-site. If they are required during field operations, they shall be placed in a designated area away from site activities and in an approved storage container.

Any fluids drained from the machinery during servicing shall be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If these activities result in damage or accumulation of product on the soil, it must be disposed of as hazardous waste. Under no circumstances shall contaminated soil be added to a spoils pile and transported to a regular disposal site.

Equipment Containment Berm:

Stationary equipment shall have a portable containment berm placed beneath it prior to being put into service. This includes, but is not limited to, generators, compressors, and gas powered pumps. The berm shall be constructed in such a manner as to capture any lost or spilled fluids.



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SPILL PREVENTION/CONTINGENCY PLAN

Spill Containment Measures:

Several measures can be taken to prepare for quick and effective containment of any potential spills prior to undertaking construction activities. First and foremost, each contractor shall keep adequate supplies of spill containment equipment at the construction sites. These kits will contain adequate supplies for any anticipated spills. Other spill containment measures include using drip pans and/or absorbent materials underneath vehicles when servicing or maintenance activities are undertaken.

Emergency Response Procedures

Initial Notification and Activation:

A formal notification process shall be initiated when a spill or potential spill is first observed. Immediate actions are necessary. The first individual who discovers a spill (spill observer) will be responsible for notifying the project supervisor for proper response to the incident.

Specific Response Procedures:

Specific response procedures have been developed for various kinds of spills including vehicle fluid spills, chemical toilet and human waste spills, and discovery of an unknown hazardous material. Some response procedures common to all spills are to keep people away from the spilled material, secure the source of the spill if this can be done safely, and determine the material spilled and the volume, extent, and potential for danger of the spill.

The first step at the discovery of any spill is keep people away from the spilled material. Close off the area, and do not leave the site unattended. Securing the source of the spill is an extremely important step in response activities. However, a source should be secured only if it can be performed safely without risk to human life or health. Steps to be taken to secure the source include turning off machinery, clamping or disabling hoses, etc.

The second step at the discovery of any spill is to fill out the Spill Notification Checklist. Another key element in early response to all spills is determining of the type of material spilled and the volume and extent of the spill. These facts should be determined as soon as possible in order to facilitate planning and initiate proper response operations.



SPILL PREVENTION/CONTINGENCY PLAN

The volume will be needed to evaluate equipment and personnel needs, as well as requirements for storage and disposal of recovered waste. A rough estimate of the spill volume can be generated from visual observation and source identification. Minor spills are those that have the least probability of environmental damage, not necessarily the smallest volume.

Vehicle and Machinery Spills:

Incidents of loss of a petroleum product from equipment or vehicles shall be considered a spill. After the spill has been flagged to warn people to stay away, the volume and extent of the spill estimated, and initial notification procedures accomplished, the spill must be confined. Do not handle materials without wearing protective clothing (i.e. gloves, etc.).

Generally follow the steps listed below:

1. When the spill is discovered, begin making notations on the Spill Notification Checklist.
2. Determine if the Spill Team Response is needed to complete cleanup.
 - a) If the answer is NO, submit incident reports to the RJC Safety Director.
 - b) If the answer is YES, go to step 3.
3. Activate the local spill response team. Generally, these are personnel designated on a construction crew, but the team may be supplemented by other contractor personnel.
4. Determine if additional cleanup contractors are necessary for a major incident.
 - a) If the answer is NO and the incident is determined to be a minor spill, conduct internal cleanup, review and evaluate the cleanup, determine if the cleanup is beyond the local response team ability or equipment; if the answer is NO, complete the cleanup, restore the damaged areas, properly dispose of all waste, and submit incident reports to the RJC Safety Director. If during cleanup the incident is determined to be beyond the abilities of the local response team, hire additional contractors to help with the cleanup.
 - b) If the answer is YES, hire additional contractors to help with the cleanup.
5. Closely monitor all cleanup activities.



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SPILL PREVENTION/CONTINGENCY PLAN

6. Ensure proper disposal of absorbent materials, containers, and soils, as required.
7. Complete the cleanup and restore damaged areas. Cleanup may range from very simple removal of minor spills, to installation of skimmers around large spills or between sensitive areas and spills for longer, prolonged cleanups. Cleanup can be on pavement or on soil surfaces.

Chemical Toilet Spills:

Chemical toilets are self-contained and pose little threat to the construction site. Chemicals used in portable toilets are biodegradable and generally non-toxic to humans. However, they can pose a danger to wildlife and sensitive habitats by virtue of heavy concentration of chemicals and human waste. They shall be pumped out at least one time per week. Toilets shall never be placed in or near an environmentally sensitive area.

In the unlikely event that a portable toilet spills during transport or relocation, the same procedures for other hazardous material spills shall be used. Disposal of absorbent materials shall be handled the same as other spills, with proper disposal by the toilet supply company.

Unknown Hazardous Materials:

There is always a possibility that personnel may unexpectedly encounter a hazardous situation when working in the field. The most likely materials that may be encountered during excavation would be buried underground tanks, utility pipelines, drums, or asbestos pipe.

If there is any doubt regarding the degree of hazard of a particular circumstance and personnel are unsure as to what measures to take, the following steps shall be taken immediately to ensure the health and safety of the personnel involved.

1. STOP WORK IMMEDIATELY.
 - a. Personnel shall remove themselves from the hazard or suspected area.
2. OBTAIN AS MANY DETAILS OF THE SITUATION AS POSSIBLE, WITHOUT ENDANGERING YOURSELF OR OTHERS.
 - a. While obtaining information details:
 - i. Never enter confined spaces (i.e. excavation trench).
 - ii. Do not handle any materials.



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SPILL PREVENTION/CONTINGENCY PLAN

- iii. Extinguish all flames (i.e. welders, torches, cigarettes).
- iv. Do not remove objects from trenches or refill excavated area.
- b. Things to note:
 - i. Site location/address or closest cross-street and station.
 - ii. What was encountered (i.e. tank, drum, pipe, sewage, etc.).
 - iii. Approximate size of object.
 - iv. Odors or any discoloring of soil.
 - v. Material object is made of (i.e. steel, fiberglass, plastic, etc.).
 - vi. Was there or is there a potential for a spill, release, discharge, etc. of toxic or hazardous liquid, gas, vapor, dust, or mist?
 - vii. Estimated amount of chemical released?

3. IF YOU MUST LEAVE THE SITE TO NOTIFY SUPERVISORS:

- a. Appoint personnel to police the site until you return.
- b. Mark off area of concern (i.e. flagging, cones, etc.).
- c. Do not allow anyone to enter the site.

Following these actions, personnel shall be given proper direction from supervisors on how to proceed. By simply removing personnel from the hazard and maintaining good communications, many accidents can be avoided. Remember, if there is any doubt about the safety of on-site employees in a particular circumstance, initiate the proceeding course of action.

Closing of the Spill Incident

Disposal of Waste:

Following the cleanup of a spill, the waste, absorbent materials, protective clothing, and any soil that has been contaminated must be removed to a designated hazardous waste disposal area. It is advisable for contractors to establish a relationship with a disposal facility before an incident occurs. Local landfills may be able to receive some petroleum products. However, it is up to RJC or its subcontractor to perform coordination with landfills or a disposal company. Transporting hazardous waste is regulated by federal and state agencies under the Resource Conservation and Recovery Act (RCRA) and other statutes. The contractor is responsible for the proper disposal of all waste and understanding the responsibilities under federal and state statutes.

Final Reporting:

Spill incidents that require cleanup must be reported on the Spill Notification Checklist. Notification must begin as soon as the incident occurs. The checklist shall be submitted



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SPILL PREVENTION/CONTINGENCY PLAN

to the RJC Safety Director as soon as it is complete. Forms must be submitted no longer than five days after an incident is closed. A copy of the permit or disposal approval and the chain-of-custody for the disposal must be attached to the Spill Notification Checklist. The forms shall be reviewed and filed in the contractor's file. No exceptions will be tolerated.

If a situation arises involving an unknown hazardous material, the Spill Notification Checklist can be used to report the incident. This incident may require a very different approach to removing the hazard, and the contractor may be required to remove the material. The incident must still be reported by the contractor.

Follow-Up Investigation:

A critique following a spill response is beneficial to evaluate the actions taken or omitted. Recommendations and suggested modifications will be made to prepare for the possibility of future spills. Should a contractor have an abnormally high incident of spills, corrective actions may become necessary. Contractors should consider the following examples of questions that are likely to be appropriate at each stage of a critique:

1. **Detection**
 - a. Was the spill detected promptly?
 - b. How was it detected and by whom?
 - c. Could it have been detected earlier? How?
 - d. Are any procedures available to consider which might aid in spill detection?

2. **Notification**
 - a. Were proper procedures followed in notifying the contractors involved and the Owner?
 - b. Agencies?
 - c. Were notifications prompt?
 - d. Was management response appropriate?
 - e. Was the RJC Safety Director notified promptly? If not, why not?

3. **Assessment/Evaluation**
 - a. Was the magnitude of the problem assessed correctly at the start?
 - b. What means were used for this assessment?
 - c. Was there adequate measurement or estimation of the spill volume?
 - d. What was the initial strategy for response to this spill?



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- e. Is the strategy defined in the spill plan?
- f. How did the strategy evolve and change during this spill and how were these changes implemented?
- g. What caused such changes?
- h. Are there improvements needed? More training?

4. Response

- a. What steps were taken to mobilize spill countermeasures?
- b. What resources were mobilized?
- c. Was mobilization prompt?
- d. Could it have been speeded up or should it have been?
- e. How could this be improved?
- f. Were outside spill contractors needed and called in promptly?
- g. Was containment effective and prompt?
- h. How could it have been improved?

5. Command Structure

- a. Who was initially in charge of spill response?
- b. What sort of organization was initially setup?
- c. Was there adequate surveillance?
- d. Were communications adequate?
- e. What improvements are needed?
- f. Is more planning needed?
- g. What are the roles and effects of the various government agencies involved?
- h. Were government agencies adequately informed at all stages?
- i. Were too many agencies involved?
- j. Was there adequate agreement with the government agencies on cleanup criteria?
- k. How was this agreement developed?



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Spill Cleanup Contractors

In the event of an environmental spill, contact a contractor that is qualified in spill cleanup and disposal. The following are local contractors that may be utilized in the event of a spill:

Rock River Environmental Services

5450 Wansford Way # 225

Rockford, IL 61109

Phone: (815) 963-7511

Trans Environmental Ltd

8184 Starwood Drive

Loves Park, IL 61111

Phone: (815) 885-4840



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SPILL PREVENTION/CONTINGENCY PLAN

SPILL NOTIFICATION CHECKLIST

Date: _____ Time: _____

Name: _____ Contractor: _____

Location: _____

Description of Spill (color, length, width, type): _____

Type of Product: _____

Estimated Quantity: _____

Source of Spill (vehicle, machine, etc.): _____

Describe Initial Containment Procedures: _____

Weather Conditions: _____

Note if Spill Reached any Body of Water: _____

Individuals Notified of Spill (include name, company, date, time and response): _____



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STAIRWAYS AND LADDERS WRITTEN PROCEDURES

Purpose

It is this company's purpose in issuing these procedures to further ensure a safe workplace based on the following formal, written procedures for ladder and stairway safety.

These procedures will be reviewed and updated as needed to comply with new OSHA regulations, new best practices in ladders and stairways, and as business practices demand.

Application

This general stairways and ladders plan applies to:

- Requirements for providing ladders and stairways.
- Stairway and ladder use.
- Competent person duties.
- Training requirements.

General Procedures for Stairways and Ladders

This section specifies where stairways and ladders will be provided so our employees will have safe access between working levels.

We provide a stairway or ladder at all places where our employees access different levels of work where the difference in levels is 19 inches or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.

Our employees will not use any spiral stairways that will not eventually be a permanent part of the structure. Spiral stairs have an inherent hazard in that the tread depth is not uniform across the whole width of the tread. This makes for hazardous footing, and could lead to injuries due to slipping or missing a tread completely.

When a ladder provides the only means of access for 25 or more employees, or serves simultaneous two-way traffic, either the ladder will be double-cleated or two or more separate ladders will be provided.

Free passage through personnel points of access to stairways and ladders is critical to the safety of our workers. Therefore:

- When we have one point of access between levels, the access-way: (1) will be kept clear for employee passage, or (2) a second point of access will be



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STAIRWAYS AND LADDERS WRITTEN PROCEDURES

provided. An example would be: erecting a scaffold in a stairway to do finishing work: such a scaffold would block the exit. Therefore, another means of access, such as a ladder, would be provided.

- When a building or structure has two or more points of access between levels, at least one point of access must be kept clear to permit free employee passage.

We will provide and install all required stairway and ladder fall -protection systems, and comply with all other pertinent requirements of the stairways and ladders section (Subpart X) of the OSHA regulations, before our employees begin the work that necessitates these systems.

Stairway Procedures

This section specifies the requirements for all stairways used by this company.

General

Stairs that will not be a permanent part of our project will have a landing at least 30 inches long (in direction of travel) and at least 22 inches wide every 12 feet or less of vertical rise.

Stairs will always be installed between 30 and 50 degrees from the horizontal.

Riser height and tread depth will be uniform, within 1/4 inch, for each flight of stairs. This includes any foundation structure that serves as a tread of the stairway.

We will provide a platform wherever a door or gate opens onto a stairway. The swing of the door or gate will not reduce the effective width of the platform to less than 20 inches.

When we use metal pan landings and metal pan treads they will be secured in place before filling.

All parts of our stairways will be free of hazardous projections, such as protruding nails.

Slippery conditions on stairs will be eliminated before they are used to reach other levels.



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STAIRWAYS AND LADDERS WRITTEN PROCEDURES

Temporary Service (treads and landings used on stairways)

Except during construction, foot traffic is prohibited on stairways with pan stairs that have not received their permanent fillings unless they have been temporarily fitted with wood or other solid material up to the top edge of each pan.

Temporary treads and landings will be replaced when they are worn below the level of the top edge of the pan.

Except during construction, and where permanent treads and landings are to be installed at a later date, skeleton metal stairs will be provided with temporary treads and landings prior to any foot traffic.

Temporary treads and landings will be long enough to cover the entire tread and/or landing area.

Temporary treads will be made of wood or other solid material, and will be the full width and depth of the stair. Stair pans will be filled in completely.

Stair Rails and Handrail

The following OSHA rules set forth this company's requirements for stair rails and handrails.

Stairways having four or more risers or rising more than 30 inches, whichever is less must be equipped with:

1. One stair rail system along each unprotected side or edge.
2. At least one handrail.

On our stairways, the top of the stair rail doubles as the required handrail. Therefore, the height of the top edge will be between 36 and 37 inches from the top of the stair rail to the tread surface. This is measured in line with the face of the riser at the forward edge of the tread.

Winding and spiral stairways will be equipped with a handrail offset to prevent our employees from walking on those portions of the stairways where the treads are less than six inches wide.

The height of our stair rails will be as follows:



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- Stair rails will not be less than 36 inches from the top of the stair rail to the surface of the tread. This measurement is taken in line with the face of the riser at the forward edge of the tread.
- We will place mid rails, screens, mesh, intermediate vertical members (such as balusters), or equivalent structural members between the stairway steps and the top of the stair rail, with the following additional requirements:
 - Mid rails will be located midway between the top of the stair rail and the steps.
 - Screens or mesh will fill the entire opening between top rails and stairway steps.
 - When intermediate vertical members, such as balusters, are used between posts, they will not be more than 19 inches apart.
- Other arrangements of structural members will allow no opening in the system more than 19 inches wide.
- Handrails and the top rails of stair rails will be capable of withstanding, without failure, a force of at least 200 pounds applied within two inches of the top surface, in any downward or outward direction, and at any point along the top edge.
- Failure means load refusal, breakage, or separation of component parts.
- Load refusal is the point where the ultimate strength is exceeded.
- The height of all handrails, and when stair rails double as handrails, the top of the stair rail will be between 30 and 37 inches as measured from the top of the handrail to the surface of the tread in line with the face of the riser at the forward edge of the tread.
- All stair rail systems and handrails will be surfaced so as to prevent: (1) an employee's clothes from being snagged, causing the employee to trip, and (2) to prevent employee injuries from contact with splintered rails.
- Handrails will provide an adequate handhold for any employee grasping them to avoid falling.
- The ends of stair rails and handrails will be constructed so as not to be a projection hazard.
- Handrails that will not be a permanent part of the structure being built will be spaced a minimum of three inches away from walls, stair rails, and other objects.
- Unprotected sides and edges of stairway landings will have a guardrail system that complies with §1926, Subpart M-Fall protection.

Ladder Procedures

The following requirements apply to all (including job-made) ladders used by employees of this company. Ladders shall only be used as designed by the manufacturer.



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General

This section sets forth the general requirements for constructing and equipping ladders.

- **Self-supporting and non self-supporting ladders** will be capable of supporting the following minimum loads without failure:
- At least four times the maximum intended load applied or transmitted to the ladder.
- Except that extra-heavy-duty self-supporting portable metal or reinforced plastic ladders (Type 1A), are required to satisfy a strength factor requirement of 3.3.
- **Fixed ladders** will be capable of supporting the following minimum loads without failure:

At least two loads of 250 pounds each, concentrated between any two consecutive points of attachment, plus other anticipated loads such as those caused by ice buildup, winds, rigging, and impact loads resulting from the use of ladder safety devices.

- Each step or rung-a single concentrated load of a least 250 pounds, applied in the middle of its span.
- Ladder rungs, cleats, and steps will be parallel, level, and uniformly spaced when the ladder is in position for use.

The following three paragraphs set **rung spacing requirements** for company ladders. Measurement is taken between center lines of the rungs, cleats and steps. The rungs, cleats, and steps of:

- Our **portable ladders** (except step stools and wood extension trestle ladders) and fixed ladders (including individual-rung/step ladders) will be spaced not less than 10 nor more than 14 inches apart.
- Our **step stools** will be not less than 8 or more than 12 inches apart.
- The base section of **extension trestle ladders** will be not less than 8 or more than 18 inches apart, as measured between center lines of the rungs, cleats, and steps. The rung spacing on the extension section will be not less than 6 or more than 12 inches.
- The minimum rung/step length (clear distance between side rails) for portable and fixed ladders will be as follows:
- For fixed ladders and individual-rung/step ladders-16 inches.
- For portable ladders-11½ inches.



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- Individual-rang/step ladders will be shaped such that employees' feet cannot slide off the rung ends.
- The rungs and steps of our fixed metal ladders (manufactured after March 15, 1991), and portable metal ladders will be rugated, knurled, dimpled, coated with skid-resistant material or otherwise treated to minimize slipping.
- This company prohibits the tying together of ladder sections to make a longer ladder, unless the sections are designed for such use.
- All stepladders will have metal spreaders or locking devices to keep them in an open position when being used.
- Proper splices are important on all ladders. Therefore, any spliced side rails must be equivalent in strength to a side rail of the same length made of one piece of the same material.

Except when portable ladders are used to gain access to fixed ladders (such as on utility towers, billboards, and other structures where the bottom of the fixed ladder is elevated to limit access), two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders.

When the above provision is used in our company, we will follow the requirements of 29 CFR 1926, Subpart M, to have guardrail systems with toe boards for falling object and overhead protection, on the platform or landing.

- All ladder components will be surfaced so as to prevent injury to our employees from punctures or lacerations, and to prevent snagging of clothing.
- To prohibit covering or painting over any splits or cracks in any wood ladder component that might cause a defect to be undetected by a ladder user, wood ladders will not be coated with any opaque covering, except as necessary for identification or warning labels. Identification or warning labels will be placed on one face only of a side rail.
- For safe foothold purposes, a minimum perpendicular clearance of - seven inches (four and one-half inches for elevator pit ladders) will be maintained between a fixed ladder's rungs, cleats, or steps, and any obstruction behind it.
- A minimum perpendicular clearance of 30 inches will be held between a fixed ladder and any obstructions on the climbing side.



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- When an unavoidable obstruction is encountered, the minimum perpendicular clearance will be reduced to 24 inches provided that a deflection device is installed to guide our employees around the obstruction.
- Through fixed ladders at their point of access/egress will have a step-across distance of not less than seven inches nor more than 12 inches as measured from the centerline of the steps or rungs to the nearest edge of the landing area. If the normal step-across distance exceeds 12 inches, a landing platform will be provided to reduce the distance to the specified limit.
- Fixed ladders that do not have cages or wells will have a minimum of 15 inches of side clearance (from the ladder centerline to the nearest permanent object).
- Fixed ladders will be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of climb is less than 24 feet but the top of the ladder is more than 24 feet above lower levels.
- Where the total length of a climb equals or exceeds 24 feet, fixed ladders will be equipped with either ladder safety devices, self-retracting lifelines, together with rest platforms, at intervals not to exceed 150 feet, or a cage or well with ladder sections offset and landing platforms provided at maximum intervals of 50 feet.
- Cages for fixed ladders will conform to the requirements of §1926.1053(a)(20).
- Wells for fixed ladders will conform to the requirements of §1926.1053(a)(21).
- Ladder safety devices, and related support systems, for fixed ladders will conform to the requirements of §1926.1053(a)(22).
- The mounting of ladder safety devices for fixed ladders will conform to the requirements of §1926.1053(a)(23).
- The side rails of through or side-step fixed ladders will extend 42 inches above the top of the access level or landing platform served by the ladder.
- For a parapet ladder, the access level will be the roof if the parapet is cut to permit passage through the parapet; if the parapet is continuous, the access level will be the top of the parapet.
- For through-fixed-ladder extensions, there will be no steps or rungs. The extension will be flared so the side rails provide between 24 and 30 inches of clearance when ladder safety devices are not provided, and that the extension be flared no more than 36 inches when ladder safety devices are provided.
- For side-step fixed ladder extensions, the side rails and the steps or rungs will be continuous.
- Individual-rang/step ladders, except those covered by manhole covers or hatches, will extend at least 42 inches above access levels or landing platforms or be equipped with either horizontal or vertical grab bars.



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Ladder Use

This section sets forth the requirements this company follows for safe ladder use by our employees. These rules apply to all ladders, including job-made ladders, except as otherwise indicated.

- When **portable ladders** are used for access to an upper landing surface, the ladder side rails will extend at least three feet above the upper landing surface to which the ladder is used to gain access.
- When a three foot extension is not possible because of the ladder's length, it will be secured at the top to a rigid non-deflecting support. Our employees will be provided with a grasping device such as a grab rail to assist them in getting on and off ladders without the three foot extension.

In no case will the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

- Ladders will be maintained free of oil, grease, and other slipping hazards.
- Ladders will not be loaded beyond their maximum intended load, or beyond the manufacturer's rated capacity.
- Ladders will only be used for the purpose for which they were designed.
- The following requirements will be met for the angles at which ladders will be positioned so they are stable when climbed.
- Non-self-supporting ladders will be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- Wood job-made ladders with spliced side rails will be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.
- Fixed ladders will be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder.
- Ladders will be used only on stable and level surfaces unless secured to prevent accidental movement.
- Ladders will not be used on slippery surfaces unless secured or provided with slip-resistant feet.

Slip-resistant feet will not be used as a substitute for care in placing, lashing, or holding a ladder that is used on slippery surfaces.



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- Ladders placed in any location, such as passageways, doorways, or driveways, where they can be moved by workplace activity or traffic, will be secured to prevent accidental movement. Otherwise we will use a barricade to keep the activities or traffic away from the ladder.
- The area around the top and bottom of ladders will be kept clear.
- The top of a non-self-supporting ladder will be placed such that the two side rails are equally supported, or provided with a single support attachment.
- Ladders will not be moved, shifted, or extended while occupied.
- Ladders will have nonconductive side rails if they are used where an employee or the ladder could contact exposed energized electrical equipment.
- The top or top step of a stepladder will not be used as a step.
- Cross-bracing on the rear support section of stepladders will not be used for climbing unless it is designed and recommended for such use by the manufacturer by providing steps for climbing on both the front and rear.
- Portable ladders with structural defects, such as, but not limited to: broken or missing rungs, cleats, steps, broken or split rails, corroded components, or other faulty or defective components, will be immediately pulled from service and marked or tagged with "Do Not Use" or similar language. They will not be used until repaired.
- Fixed ladders with structural defects, such as, but not limited to: broken or missing rungs, cleats, steps, broken or split rails, or corroded components, will be withdrawn from service until repaired. The requirement to withdraw a defective ladder from service is satisfied if the ladder is either:
 - Immediately tagged with "Do Not Use" or similar language.
 - Marked in a manner that readily identifies it as defective.
 - Or blocked (such as with a plywood attachment that spans several rungs).
- Ladder repairs will restore the ladder to a condition meeting its original design criteria, before the ladder is returned to use.
- Single-rail ladders will not be used.

When going up or down a ladder our employees will:

- Face the ladder.
- Use at least one hand to grasp the ladder.
- Not carry any object or load that could cause them to lose balance and fall.



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Appendix A to Subpart X-Ladders

This appendix serves as a non-mandatory guideline for complying with the ladder loading and strength requirements of §1926.1053(a)(1). A ladder designed and built in accordance with the applicable national consensus standards, as set forth below, will be considered to meet the requirements of §1926.1053(a)(1):

- Manufactured portable wood ladders: American National Standards Institute (ANSI) A14.1-1982 - American National Standard for Ladders - Portable Wood - Safety Requirements.
- Manufactured portable metal ladders: ANSI A14.2-1982 - American National Standard for Ladders - Portable Metal - Safety Requirements.
- Manufactured fixed ladders: ANSI A14.3-1984 - American National Standard for Ladders - Fixed - Safety Requirements.
- Job-made ladders: ANSI A14.4-1979 - Safety Requirements for Job-Made Ladders.
- Plastic ladders: ANSI A14.5-1982 - American National Standard for Ladders- Portable Reinforced Plastic - Safety Requirements.

Duties of Our Competent Person

Ladders will be periodically inspected by our competent person for visible defects and after any occurrence that could affect their safe use.

This company will insure that each employee who uses ladders or stairways is trained by a competent person in the areas listed in the training requirements (§1926.1060), as applicable.

Training Requirements

This company understands that it is necessary to, first and foremost, follow the training requirements of §1926.21(b)(2), regarding the hazards addressed in subpart X. That is, to instruct employees in the recognition and avoidance of unsafe conditions and the regulations applicable to their work environment to control or eliminate any hazards or other exposure to illness or injury.

Second of all, we are required to provide a training program for each employee who uses ladders or stairways, as necessary. The training is intended to instruct each employee to recognize and minimize the hazards associated with ladder or stairway use.



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We will ensure that each employee is trained by a competent person in the following areas, as applicable:

- The nature of fall hazards at the employee's worksite.
- The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
- The proper construction, use, placement, and care in handling of all stairways and ladders.
- The maximum intended load-carrying capacities of ladders used.
- The standards contained in 29 CFR 1926, Subpart X.
- Retraining will be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with §1926.1060.



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STEEL ERECTION PLAN

Purpose

Our Company must meet the requirements of OSHA's Steel Erection standard (29 CFR 1926, Subpart R). This Steel Erection Plan for Construction is our Company's policy to protect our employees from the hazards associated with steel erection activities.

Those activities could 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.

Administrative Duties

This written safety plan is kept at the main office.

Controlling Contractor

Each steel erection jobsite has a controlling contractor, and our Company is the controlling contractor for most jobsites. Before starting steel erection we ensure that work is done in accordance with the OSHA guidelines.

Overhead Hoisting Operations

Our Company is concerned for the safety of employees that must work under loads. Prior to the movement of suspended loads, we will pre-plan routes to ensure that no employee is required to work directly below the load except:

1. Employees initially connecting steel, or
2. Employees necessary for the hooking or unhooking of a load.

When an employee must work under a suspended load, the following rules will apply:

Materials being hoisted must be rigged to prevent unintentional displacement; Hooks with self-closing safety latches or their equivalent must be used to prevent components from slipping out of the hook; and all loads must be rigged by a qualified rigger.



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STEEL ERECTION PLAN

Hoisting and Rigging

When our Company is involved in hoisting and rigging operations, we follow the requirements of OSHA's steel erection regulation and the general requirements for cranes in 29 CFR 1926.550, except Section 1926.550(g)(2). Those requirements are a part of the steel erection rule.

Pre-Shift Visual Inspection of Cranes

Prior to every shift, we require the competent person to visually inspect each crane that will be used for steel erection operations on that shift. Our Company's procedures for inspecting a crane prior to a shift are found in our crane safety plan.

Crane and Rigging Operations

The crane operators are responsible for those operations under their direct control. Whenever there is any doubt as to safety, our foremen has the authority to stop and refuse to handle loads until safety has been assured.

A qualified rigger must inspect the rigging prior to each shift in accordance with 29 CFR 1926.251. The headache ball, hook, or load is never used to transport personnel except when using a personnel platform as provided in another section of this written safety plan.

Our Company's crane safety latch policy is that all hooks must have a working safety latch in place at all times (unless the steel erector has a site specific plan that details why this is not feasible, and what safety precautions are being taken).

Structural Steel Assembly

Structural stability will be maintained at all times during the steel erection process.

Walking/Working Surfaces

Because of the possibility of becoming a trip hazard, shear connectors (such as headed steel studs, steel bars, or steel lugs), reinforcing bars, deformed anchors, or threaded studs will not be attached to the top flanges of beams, joists or beam attachments so that they project vertically from or horizontally across the top flange of the member until after the metal decking, or other walking/working surface, has been installed. When we use shear connectors in the construction of composite floors, roofs, and bridge decks, our employees will lay out and install them after the metal decking has been installed, using the metal decking as a working platform. Shear connectors will not be installed from within a controlled decking zone.



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STEEL ERECTION PLAN

Slip Resistance of Skeletal Structural Steel

Our employees will not be permitted to walk the top surface of any structural steel member installed after July 18, 2006 that has been coated with paint or similar material unless we have documentation or certification from the paint manufacturer that the coating has achieved a minimum average slip resistance of .50 using the methods described in the OSHA regulations at 29 CFR 1926.754(c)(3).

Falling Object Protection:

Securing Loose Items Aloft

All materials, equipment, and tools, which are not in use while aloft, will be secured against accidental displacement.

Protection from Falling Objects Other Than Materials Being Hoisted

The controlling contractor has the responsibility of barring other construction processes below steel erection unless overhead protection for the employees below is provided.

Fall Protection:

General Requirements

Except for connectors and employees working in controlled decking zones, any employees engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level will be protected from fall hazards.

Perimeter Safety Cables

On multi-story structures, perimeter safety cables will be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed.

Connectors

Each connector who is on a walking/working surface with an unprotected side or edge more than two stories or 30 feet above a lower level, whichever is less, must be protected from fall hazards.

Controlled Decking Zone (CDZ)

We may establish a controlled decking zone in that area of the structure over 15 and up to 30 feet above a lower level where metal decking is initially being installed and forms the leading edge of a work area.



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Criteria for Fall Protection Equipment

Our guardrail, safety net, personal fall arrest, and positioning device systems, and their components will conform to the criteria in OSHA's fall protection standard at 29 CFR 1926.502.

Perimeter safety cables will meet the criteria for guardrail systems in Section 1926.502. Appendix G to the Steel Erection rule contains the requirements of Section 1926.502.

Training

Our Company follows both the training requirements of the Steel Erection rule and 29 CFR 1926.21, Safety Training and Education. We ensure that steel erection training is provided by a qualified person(s).



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Water Response and Mold Prevention Program (WRMPP)

Purpose and Objectives

The purpose of the Water Response and Mold Prevention Program (WRMPP) is to minimize property damage and liabilities resulting from a water loss or a mold growth condition associated with architectural design, as well as construction processes and procedures performed by Ringland Johnson Construction employees and their subcontractors. Instituting and reinforcing this program will be carried out through a carefully planned and communicated program of safety education, training and informational activities. These activities are conducted to ensure that all employees know their obligations and responsibilities with respect to mold exposures and water damage.

The objectives of the WRMPP are to:

1. Detect water losses and mold growth early to minimize construction material and property damage and liability.
2. Provide guidance for preventing and responding to moisture/ water or mold growth conditions; and
3. Outline the minimum required procedures for responding to a moisture/ water or mold growth condition.

Application

This water response and mold prevention program is applicable to all projects. All work pertaining to Ringland Johnson Construction Projects. Once built, the systems under the control of facility owners (current and previous), such as existing heating, ventilation, and air- conditioning (BY AC) or elevator systems are the owners' responsibility.

Managing Risk: Key Program Components

1. A written WRMPP document
2. Assignment of responsible parties for job functions within the WRMPP
3. Proactive planning and management of projects and subcontractors



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Water Response and Mold Prevention Program (WRMPP)

4. A preventive maintenance and inspection program
5. Established procedures to minimize potential moisture / water intrusions
6. Proper documentation of a moisture/ water condition or mold growth
7. Guidelines for response to a moisture/ water condition
8. Identification of mold growth and determination of the extent of damage
9. Guidelines for remediation of mold- containing building materials
10. Training objectives and goals
11. Communication with interested parties during and following a moisture/ water condition or mold growth

Building Construction and the Indoor Environment

Since the late 1960's, changes in building construction practices have led to decreased natural air infiltration and air exchange rates so that air pollutants within buildings may not be diluted or removal as rapidly. Furthermore, these building construction changes tend to increase average relative humidity indoors.

The indoor environment in any building is a result of the interaction between the site, climate, building system (original design and later modifications in the structure and mechanical systems), construction techniques, contaminant sources (building materials and furnishings, moisture content, processes and activities within the building, and outdoor sources), and building occupants. Indoor air contaminants, such as mold can originate within the building or be drawn in from outdoors.

Mold as Fungi

Fungi include mold, yeast, mildew, as well as the morels, mushrooms, rusts, and smuts. Fungi live in the soil, on plants and on dead or decaying matter. Fungal spores can almost always be found in the outdoor environment. In indoor environments, fungi can grow on numerous sites. All fungi, including mold, produce spores to reproduce, just as some plants produce seeds. Spore sizes can range from less than 2 *um* to more than 100 *um* (1 *um* = 10⁻⁶ meters or 1/25,000 of an inch). Fungal spores, found in both



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indoor and outdoor air, settle on indoor and outdoor surfaces. In order to grow, mold and all fungi have two key requirements: food and water. All fungi feed on organic, carbon sources, such as starchy pastes used with wallpaper, cellulose in paper and many building materials (wood, canvas, drywall, paper sheathing, etc.) keratin from animal skin scales and human fingernails and toenails, human skin cells, and lignin in wood. In addition, they must have water to promote growth.

Fungal Growth in Buildings and Structures

Some species of fungi can grow on dampened building materials in as little as 48 hours and following a water event. If building materials are dried out in less than 48 hours from the time they are first wetted, the probability of fungal growth decreases greatly.

The following are parameters that promote fungal growth:

1. Moisture content of building materials greater than 12%
2. Relative humidity in air or within a structure greater than 60%
3. Temperature between 40°F and 100°F
4. Poor air circulation

Prevention of Fungal Growth on Building Materials

Two keys to preventing fungal growth within buildings or on building materials are:

1. Control of moisture by reducing moisture / water from potential sources of release, and
2. Rapid response to a moisture/ water release condition once it has been discovered.

Once a moisture/ water condition is observed or reported, immediate action should be taken to inspect the area to determine the source, quickly eliminate additional moisture, water and dry the dampened or wet building materials.



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Liability and Risk Posed by Subcontractors

Some liability and risk is posed by subcontractors bringing building materials onsite or working with wet building materials. To ensure that subcontractors understand that the prevention of mold growth must be conscious and an ongoing component of the building process: "All subcontractors must ensure that any worker performing activities on a project understands the importance of communicating water release. Furthermore, subcontractors shall ensure that building materials brought onsite are free from unusual moisture and all mold growth. Any materials abnormally wet, or exhibiting signs of mold growth should not be used until dried, treated or replaced."

Where is the water coming from?

There may be several different indications of water intrusion- discoloration of materials, failure of bonding of materials, visible accumulation of water, or the growth of mold or mildew. When discovered, the obvious question is, "Where's this coming from?"

A hole in the roof will allow rain to enter, but rain is not the only problem, and draining is not the only route. The water can be white (potable), gray (drainage) or black (sewage), and quality can change as it migrates through the structure — white rain becomes gray drainage as it soaks through insulation and wallboard.

Water may be from rain, snow, ground water, or condensation from the air. It may be from building plumbing systems, HVAC systems, refrigeration, cooking, manufacturing processes, or building amenities (fountains, pools, indoor foliage). It may be an everyday exposure, or purely seasonal. Simply occupying a building will change the moisture content. People exhale water vapor into the air they breathe. While this is a minor issue for 20 people, an arena holding 10,000 people is a different matter.

Ground Water Assessment

Pre-existing water conditions must be assessed **BEFORE** the start of construction, as well as during the life of the project. By early recognition, you may avoid significant problems with water.

Prevention/ Control

Determine the current water table, and expected seasonal changes in the table. High water tables can result in walls damaged by hydrostatic force, as well as seepage. If high water tables will impede construction, how will they be managed? De-watering, pumps, and cofferdams all require planning for proper installation and use. Natural springs, streams, and ponds must be included in your planning.



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What route will storm water follow at the current grading of land, and at the finished grade? Temporary dikes, catch ponds or erosion control may be needed. Will large areas be paved and reduce absorption of rainfall? Does the grade promote movement away from the structure, or toward it?

Exterior Insulation Finish Systems (EIFS)

Whether pronounced EEIFS or EYE-Fs, this popular building system has been in the news a great deal. This cladding product is relatively inexpensive, goes on quickly, looks great and has been blamed in thousands of water damage claims.

In brief, water that penetrates past the surface coatings can be wicked into the cloths under layer. The surface coating may limit moisture evaporation, and retained water may produce major damage to the structure.

EIFS can be barrier systems that keep out all water, or they can manage systems that let water out when it does get in. With either type, the potential for water intrusion from several sources should be addressed. These sources include: Improperly sealed wall openings, improperly coated surfaces and damaged surfaces.

Prevention/Control

The EIFS contractor should be listed as an approved applicator by the manufacturer of that product. The contract should specify the type and make of the EIFS to be installed, and should include architectural details, placement of impact resistant mesh, and should assign responsibilities for flashing and caulking of ANY wall penetration through EIFS. Change of any materials should be documented in writing. Wall penetrations will include doors and windows, or course, but may also include minor items. This includes phone lines, A/C coolant lines, cable TV cables, hose bibs, etc. Failure to seal these penetrations per the maker's specifications has been involved in a large percentage of EIFS failures.

A key inspection point is the fitting and attachment of the underlying insulation board. Some boards have grooves on the building side, and may require a chamfer at the top edge, etc. Again, see that the manufacturer's instructions are followed precisely.

The application of surface sealants should be inspected, to include ground clearance, horizontal returns under a vertical surface, etc. Final inspections should take into account such points as placement of landscaping sprinklers, depth of mulch beds, etc. that can contribute to water intrusion.

Finally, have documentation that the owner has received the manufacturer's instructions on sealant application and maintenance/repair instructions.



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Water Response and Mold Prevention Program (WRMPP)

Roofing

Whether the roof is shingle, shake, concrete/clay tile, membrane, metal, or built-up roof, the roof is the first line of defense against water. No roof can support water indefinitely. The roof is intended to MOVE water to the sides of the building. Few roofs can work with only roofing materials, they also require flashing, drains and gutters.

Prevention/Control

A key element is selection of a qualified subcontractor who is experienced in installation of the particular type of roofing system selected. Consider their track record, certifications and trade association memberships.

Underlayment, whether felt or other material, must be properly installed. An underlayment that is cut short or has gaps will fail early. Inspect the placement before the final layers conceal it.

Any roof penetration needs to be properly flashed. Whether sheet metal or plastic vents, power cables, A/C lines, hatches, skylights, etc., all will probably need flashing.

Since water flows downhill, downhill should be off the structure. Failing to provide sufficient slope to insure drainage can cause ponding, which may lead to catastrophic collapse from the weight of accumulated water. While checking slopes, check the condition of drain points on the roof. If they are blocked by asphalt, soda cans or construction trash, they will not work properly. If gutters are needed, check the discharge points to see that released water will move away from the structure and will not create a hole or puddle on the high side of the building.

A roof that can be damaged from foot traffic may require pathway pads. Air handling units that need service, lubing, or filter changes are a sure sign that people will walk on that roof.

Document that the owner has received instruction on the care and maintenance of the roof. This should include timely removal (by the owner) of leaves and debris that can clog gutters and drains.

Special attention and planning is needed when an existing roof is “opened”, either for remodeling, or replacement of the roof itself. Weather resistant coverings should be available for protection from inclement weather during the work. These may include tarps, poly sheeting, etc., but may also require channeling/ barrier devices (like sandbags) to turn flowing water away from openings. Dry out/air out wetted surfaces before re-roofing over them. Some roof systems can be tested by electronic means. This can help ensure that seams are complete and intact. Your contract and specs



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should address testing, whether by the installer or third party where appropriate, and there should be documentation of testing.

Plumbing systems

One study indicated that more than one-fifth of building water problems involved plumbing and drain systems.

Prevention/Control

Redundancy is the key. If water escapes from a fixture, where will it go? Through an unsealed joint and into building materials? If an A/C condensate line clogs, is the water going to run into the computer room?

Supply lines and drain lines, as well as fixtures, should be installed strictly per building code. But codes vary with geography, and should be considered a minimum standard. In some cases, you will want to follow a stricter standard than code minimums.

Contracts should address materials and fixtures, and require written approval of changes. The installer should have a quality assurance program in place to verify correct and adequate connections of fixtures and joints. But don't overlook hangers or supports for piping. If they sag, the drain may now be uphill. Is there documentation of hydrostatic pressure testing of supply piping?

Are master shut-off valves properly marked, and is there documentation that the owner's reps have been shown their location?

There must be a means of providing adequate heat during freezing weather once water lines have been filled. Fire protection lines, including fire sprinkler lines, will usually be charged as early as possible, before other construction is complete. A sprinkler head damaged during construction will spray an average of 30 gallons of water per minute until the supply valve is closed and a drain valve opened. Spare heads and sprinkler jacks should be on hand to limit water damage, and return systems to service promptly. In addition, know the location of sprinkler control and drain valves.

Curtain Walls

Lightweight exterior cladding of glass/metal, stone, etc, curtain walls may offer several routes for water intrusion.



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Prevention/Control

A curtain wall may be a relatively small, one or two-story cladding for the ends of a structure, or it may be the entire skin of a high-rise building. A simple curtain wall may be assembled from factory made panels; a complex one may be custom designed and fabricated. Whatever the source, curtain wall units should be tested to ensure their integrity.

Pre-fab units should be tested to ASTM specifications by their maker. For complex curtain wall designs, you may wish to consider a third party specialist to oversee design and testing.

Curtain walls can be a point of heat loss or gain, as their insulating values may be different from a standard wall. A chilly glass wall that has warm, moist air blowing on it will condense moisture from the air. Air handling system diffuser design and placement should be made with this in mind.

Curtain walls with few or no overhangs/horizontal ledges have a high exposure to “sheeting.” Sheetting is the movement of rain down a surface. If each panel has a ledge, the sheeting water for that panel is diffused or scattered at that ledge. If there are no ledges, all rain from all panels sheets to the bottom of the wall and collects at the attachment point to the structure- increasing the chances of intrusion, and placing greater demands on seals, flashing and caulk.

Curtain walls may flex vertically, depending on their construction and attachment points. This may take the form of an outward bowing of panels between attachment points. Are there specifications for the attachment of panels? Some bolts are intended to be “finger tight”, some “wrench tight” and some for a specified torque, all on the same panel.

Joints that flex may need a higher flexibility caulking to seal them properly.

Finally, the material itself may be subject to water penetration. While glass is waterproof, the glass/metal joint may not be. We consider stone to be waterproof, but one very large building experienced failure of a marble curtain wall. In that case, the marble selected by the designer for its appearance had a very high water absorption rate. Water absorption, combined with a very thin stone panel, resulted in flexing of the wall panels — and failure.

Masonry Walls

Historically, masonry walls were massive structures. Whether stone, brick, or concrete, their mass (1 to 6 feet) made penetration of water very difficult. In addition, the compressive forces of this much weight made water penetration unlikely. Today’s



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masonry units are typically only a fraction as thick, or they may only be a skin over the supporting structure, and can be points for water intrusion.

Prevention/Control

The key is to limit water intrusion, and to drain intrusions that will occur at mortar cracks or bond failures.

The bond between mortar and brick/block/stone is critical. Mortar should be an appropriate mix for the masonry unit used. Different brick or block has differing water absorption rates; the mortar should match the absorption rate of the brick or block. In general, mortar based on Portland cement resists water intrusion more than masonry cement mortar. A location subjected to regular wind-driven rain may require a different grade of mortar than one that is not.

Pay close attention to wall design, and details of openings and wall terminations. If flashings or base flashings are needed, verify they are in place and correctly installed. Are weep holes required, and are they being installed as needed? If gutters/ rain diversions are required to reduce sheeting of water, confirm that they are they in place and properly installed.

Check the quality of mortar bonds; a full thickness bond is relatively impervious to water, but an incompletely filled joint is not. One spectacular building failure was due to construction debris and lunch trash being dumped into spaces that should have been completely filled by mortar.

Building Systems

This section deals with conditions inside the building after construction is complete, and the building occupied. Most buildings will be heated or cooled, but many will also have equipment, decorations, or activities that can greatly affect the indoor environment (e.g., manufacturing processes, tenants, cooking or a greenhouse area or foliage-filled atrium).

Points to consider

Climate systems: Heating and cooling air changes its ability to transport moisture. A/C systems normally require condensation drains for liquid to condense. This condensed water can allow vigorous growth of fungi, which can obstruct air movement through coils and clog drain lines, and has been implicated as a cause of various health related problems. Many coil units have a secondary containment pan to catch overflows, but all will require maintenance by the owner.



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Fuel burning systems: gas, oil or coal, all produce water vapor in flue gasses. However, proper venting will move all flue gasses out of the structure. The decorative gas fireplace added to the boardroom may not have the venting that code requires. Cooking (is there a snack bar in your finished building?) liberates huge quantities of water vapor, as will a laundry operation. Following the current ASHRAE 62 standard — Ventilation for Acceptable Indoor Air Quality — should help control moisture-laden air. If not, moisture will condense on the first cold surface it meets: chilled glass, door or window frames, etc. Does the design provide for adequate make-up or combustion air? If not, it may create negative air pressure in the structure, and it can draw moisture through a floor slab or wall.

Vapor Barriers and Water Proofing

A vapor barrier is used to control the movement of water vapor — either to keep it in the structure (and out of the insulation) or to keep it out of the structure (ground moisture).

Prevention/Control

Two points are key. First, water vapor is not the same as liquid water. The vapor barrier must be appropriate for the job it is given. If you submerge a vapor barrier in water, failure is likely. The barrier must be selected based on the actual working conditions of exposure. If you are dealing with liquid water, then waterproofing should be used. Second, vapor barriers must be intact. Pay special attention to any penetration of a vapor barrier (piping, power lines) to insure the barrier is sealed per the maker's instructions. In addition, how will sections of vapor barrier be joined — by overlap, adhesive or sealant? Is the barrier subject to accidental damage during installation by construction debris in the soil?

Some forms of vapor barriers may be applied much like paint. And like paint, the manufacturer's instructions should be followed exactly: temperature, moisture, curing time between coats, and so on.

Waterproofing is typically installed below grade. Proper planning can help it do its job. Proper grading will divert ground water away from the structure, while improper grading will cause ponding and test the effectiveness of waterproofing. Use of exterior drains, gravel beds, etc., can reduce the demands made on waterproofing. Does the waterproofing extend an adequate height above the soil level? Exposure to the sun's ultraviolet rays can cause early failure in some products. If so, protect the waterproofing by cover materials, or UV protective coatings.



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Finally, have the installers been properly trained? One costly failure of a poly vapor barrier occurred as a result of the installers stapling a product that was meant for adhesive installation. Every staple was a pair of holes that allowed moisture to move.

Caulking

Whether we call it caulk or sealant, it serves the same purpose: to close a flexible gap between building materials, and prevent the movement of air and water. Most caulking does not provide mechanical strength, and an attempt to fix poor construction by caulking is usually doomed to early failure and heavy water intrusion.

Prevention/Control

Caulk should be applied on clean, dry surfaces. Caulk applied over damp surfaces may not only fail, but also trap moisture beneath it. Caulk applied to surfaces treated with water repellents may not adhere, or may first require priming.

Sometimes wider is better. Caulk may flex as much as 40 to 50 percent; a narrow (one-eighth inch) bead will frequently fail if is expected to flex by another one-eighth inch. A one-half inch bead expected to flex the same one-eighth inch does so quite well.

Caulk should be used for a two-surface bond - not three. Caulk can flex less if it's joining the sides and the back. As a general guide, the depth of caulk should be half its width. Shallow gaps can use bond-breaker tape to prevent three-surface bonds. Deeper gaps should use backer rod to fill the excess depth.

Backer rod should be the correct size for the opening, typically 25 percent larger than its gap. Backer rod is compressed, and limits depth of caulking and third surface bonds.

Pick the right product. Is the problem movement of the surfaces, or pure weather resistance? ASTM Spec C920 Class 25 is a high flexibility product; C920 class 12.5 has good weather resistance, but has lower flexibility.

Store the product correctly. Has the product exceeded its shelf life? Was a latex based caulk frozen in storage? Either one will result in early failure.

Apply it at the correct temperature. The manufacturer has specifications on what the product requires. Be willing to change products to meet your climate needs.

Inspect the work. We have a tendency to view caulking as a low priority, low dollar item.

See that applicators are properly trained, properly supervised, and that proper work processes are understood and followed. Simply squirting caulk into the hole until it oozes out is poor quality control.



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Structure Openings

The weakest point of any structure is usually where two different building materials meet. Typically, these will be doors and windows, but can include skylights, sliding doors, vents, etc.

The problem is compounded not only by different materials, but also by mechanical stress. The physical opening and closing of doors produces movement and stress in the frames. The placement may also put doors and windows in the path of sheeting water we mentioned earlier. Doors will also have thresholds that may also be subject to entry of ground water or wind-driven rain.

Prevention/Control

Failure to caulk and seal doors and windows has been a major factor in water claims. In addition to proper caulking, check the mechanical attachment of the unit to the structure. A window frame that moves will eventually break the caulk seal.

Check thresholds for adequate flashing, and vertical offsets between interior and exterior. Many metal thresholds placed on concrete will require a sealant or barrier to prevent water from entering beneath the threshold.

Many factory-built window units have a thin metal strip of nailing tabs. Nailing tabs are not flashing, but a way of attaching the window to the building frame. The window or door may still require flashing.

Finally, check for adequate weather-stripping on doors and windows. The manufacturer of pre-hung units may install this, or it may be job installed.

Renovations

Repairing, updating and remodeling an existing building has its own set of challenges. You may be repairing existing damage or changing or adding building systems.

Prevention/Control

First, document pre-existing conditions. This may include photos, videos and written inspection reports. These should be directed to the owner and architect of record, with a copy maintained in your files.

Second, if the structure is to remain occupied, determine if there are areas or operations that are easily damaged by water. You will need to take special care to limit water intrusion in those areas. Provide for prompt removal of water from accidents or spills with wet vacs, squeegees, etc.



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Summary

Preventing water intrusion is generally not a major undertaking, but rather attention to the small details.

1. COMMUNICATE expectations to all involved — EARLY.
2. DOCUMENT what you do.
3. FOLLOW the maker's instructions.
4. CLOSE ENOUGH is not good enough. Take care of the details, and we will have the best of all worlds: Happy customers and our reputation intact.

Small, “Clean” Water Dry-Out Procedures*

Affected Materials	Actions
Books and papers	<ul style="list-style-type: none">• For non-valuable items, discard books and papers.• Photocopy valuable/important items, discard originals.• Freeze (in frost-free freezer or meat locker) or freeze-dry.
Carpet and backing	<ul style="list-style-type: none">• Remove the water with a water extraction vacuum.• Reduce ambient humidity levels with dehumidifier.
Ceiling tiles	<ul style="list-style-type: none">• Discard and replace.
Concrete or cinder block surfaces	<ul style="list-style-type: none">• Remove the water with a water extraction vacuum.• Accelerate the drying process with dehumidifiers, fans, and/or heaters.



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Hard surface, porous flooring (e.g., linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none">• Vacuum or damp wipe with water and mild detergent; scrub if necessary; and allow to dry.• Dry sub-flooring if necessary.
Insulation	<ul style="list-style-type: none">• Discard and replace.
Non-porous, hard surfaces (e.g., plastics, metals)	<ul style="list-style-type: none">• Vacuum or damp wipe with water and mild detergent; scrub if necessary; and allow to dry.
Upholstered furniture	<ul style="list-style-type: none">• Remove water with a water extraction vacuum.• Accelerate the drying process with dehumidifiers, fans, and/or heaters.• If the piece is valuable, you may wish to consult a restoration/water damage professional who specializes in furniture.
Wallboard (e.g., drywall and gypsum board)	<ul style="list-style-type: none">• May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace.• Ventilate the wall cavity by cutting small holes in the wallboard, if possible.
Window drapes	<ul style="list-style-type: none">• Follow laundering or cleaning instructions recommended by the manufacturer.
Wood surfaces	<ul style="list-style-type: none">• Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying.• Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry.• Wet paneling should be pried away from the wall in order to allow it to dry.



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WELDING AND CUTTING

Purpose

The purpose of this program is to establish the guidelines used while performing welding, cutting, and other hot work activities on the jobsite. Hot work is any type of work that uses an open flame or produces sparks that could start a fire, including:

1. Welding
2. Torching
3. Grinding
4. Cutting metal
5. Brazing

Training

It is the policy of Ringland-Johnson Construction to permit only trained and authorized personnel to operate welding and cutting equipment. Under no circumstances may an employee operate welding or cutting equipment until he/she has successfully completed welding and cutting training.

Employees required to perform fire watch duties, will be properly trained in use of fire extinguishing equipment and understand the emergency response procedures.

Compressed Gas Cylinders

Handling, storage and use of compressed gases around the jobsite represents a number of hazards. Questions should be resolved through supervisors or use of the Compressed Gas Association Pamphlet P-1-1965.

Approved practices include:

1. Keep valve protection cap in place at all times when a cylinder is not in use.
2. When cylinders are hoisted, secure them on a cradle, sling board, or pallet.
3. Move cylinders by tilting and rolling on their bottom edges. Care in handling is required.



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4. Secure cylinders in an upright position at all times, especially when moving them by machine.
5. Use carriers or carts provided for their purpose when cylinders are in use.
6. When in use, isolate cylinders from welding or cutting or suitably shielding. Care will be taken to prevent them from becoming part of an electrical circuit.
7. Maintain a distance of at least 20 feet or provide a non-combustible barrier at least five feet high in separating fuel gas cylinders from oxygen cylinders. This applies to indoor and outdoor storage.
8. The site supervisor will designate:
 - a. Well-ventilated storage areas for cylinders inside buildings. Care will be taken to keep storage areas out of traffic areas or other situations where they could be knocked over, damaged or be tampered with.
 - b. Locations for fuel gas and oxygen manifolds in well-ventilated areas.

Prohibited Practices Include:

1. Use of valve protection caps for lifting cylinders.
2. Use of damaged or defective cylinders. The site supervisor will provide appropriate tags and designate an appropriate storage area for these cylinders.
3. Mixing of gases.
4. Use of a magnet or choker sling when hoisting cylinders.
5. Use of a bar to pry cylinders from frozen ground. Warm, not boiling, water is used to thaw cylinders.
6. Taking oxygen, acetylene or other fuel gas or manifolds with these gases into confined spaces.

Gas Welding and Cutting

Safe Practices in using Compressed Gases and Torches Include:

1. "Cracking" cylinders and attaching regulators according to industry practice.



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2. Putting caps on header hose connections and manifolds when not in use.
3. Keeping all hose, regulator, cylinders, valve protection caps, couplings, apparatus and torch connections free of grease and oil, especially those involving oxygen.
4. Using fuel gas hose and oxygen hose of different colors.
5. Inspections:
 - a. All hose before every shift;
 - b. All torches. Only devices designed for the purpose will be used to clean torch tips.
6. Use only friction lighters to ignite torches.
7. Removal of torches and hoses and positive shut-off of gas sources from confined spaces when leaving a confined space project for any substantial period of time.

Prohibited Practices Include:

1. Interchange of hoses, including use of adapters, between fuel gas and oxygen sources.
2. Placement of anything on or near a manifold or cylinder top that may interfere with the prompt shut-off in case of an emergency.
3. Taping more than four inches out of every 12 inches in joining fuel gas and oxygen hoses.
4. Using defective hose or torches.
5. Use of oxygen for personal cooling, cleaning off of surfaces, ventilation or blowing dust from clothing.

Arc Welding and Cutting

Safe Practices in using Arc Welders Include:

1. Use of holders, cable and other apparatus specifically designed for the purpose, matched to the job and other components and in good repair.



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2. Following Department Of Transportation standards for welding on natural gas pipelines.
3. When leaving electrode holders unattended, electrodes are removed and holders placed so that accident electrical contact is not made.
4. Turning off the arc welding or cutting machine when it is to be left unattended for a substantial period of time or when it is being moved.
5. Immediate reporting of any defective equipment to the site supervisor.
6. Use of non-combustible or flame-proof screens to protect employees and passersby from arc rays wherever practicable.
7. Keeping chlorinated solvents at least 200 feet from an inert-gas metal-arc welder or providing adequate shielding. Surfaces prepared with chlorinated solvents will be thoroughly before welding.

Prohibited Practices Include:

1. Using cables with repairs or splices within 10 feet of the holder that are not equivalent in insulating valued to the original cable.
2. Use of pipelines with flammable gases or liquids or conduits with electrical circuits as ground return.
3. Dipping hot electrode holders into water.

Ventilation

Ventilation is used to control overexposures to the fumes and gases during welding and cutting. Adequate ventilation will keep the fumes and gases from the welder's breathing zone.

Local exhaust ventilation must be used when potentially hazardous materials are being worked on. (Examples of potentially hazardous materials include, but are not limited to, chromium, fluorides, zinc, beryllium, cadmium, lead, and mercury).

Adequate exhaust ventilation must be used when using inert-gas welding, plasma-arc cutting or carbon-arc cutting.



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The metal surface shall be free of all chlorinated solvents during any welding or cutting operations.

Fire Prevention

The site supervisor will use this guide to assess fire hazards at a jobsite.

<u>WHEN</u>	<u>AND</u>	<u>THEN</u>
The object to be welded, cut or treated can be moved.	A fire-resistant, safe workspace is available.	The welding, cutting, brazing or heating must be done in that space.
The object to be welded, cut or heated can be moved.	All fire hazards can be moved to a safe distance.	The welding, cutting, brazing or heating can be done.
The object to be welded, cut or heated cannot be moved.	All the fire hazards cannot be removed.	Guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.
There is a welding, cutting or heating task.	Concentrations of flammable paints, dusts, or other flammable compounds are present.	Welding, cutting, brazing or heating is not allowed.

This Company will provide suitable fire extinguishing equipment based on the site supervisor's assessment of hazards. The site supervisor will ensure the equipment is maintained for immediate use.



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Hot Work Permit

This permit must be completed before hot work begins

Date:	Permit Checklist (Mark each item with a "X" or "N/A")
Hot work location:	<input type="checkbox"/> Flammable and combustible materials within a 35-foot radius of hot work have been removed or covered with fire retardant tarps or metal shields.
Description of hot work:	<input type="checkbox"/> All floors and surfaces within a 35-foot radius of the hot work area have been swept free of combustible dust or debris. <input type="checkbox"/> Any Openings or cracks in the walls, floors, or ducts that are potential travel passages for sparks, heat and flames have been covered.
Name of Hot Work Operator/Company:	<input type="checkbox"/> An operable fire extinguisher is near-by and accessible.
Is a Fire Watch required? <input type="checkbox"/> Yes <input type="checkbox"/> No A Fire Watch should be posted if: <ul style="list-style-type: none">• Combustible materials within a 35-foot radius of hot work cannot be removed.• Wall or floor openings within a 35-foot radius of hot work expose combustible materials in adjacent areas, including concealed spaces in walls or floors.• Combustible materials are adjacent to the opposite side of partitions, walls, ceilings or roofs and are likely to be ignited.• It is deemed necessary by the Permit Authorizing Individual.	<input type="checkbox"/> Sprinkler heads that could be activated by hot work have been covered with a wet rag. <input type="checkbox"/> Smoke detectors in the area of hot work have been covered to prevent false alarms. <input type="checkbox"/> A Fire Watch has been posted, if it is required, during hot work operations and for 30 minutes after work has been completed. If hot work cannot be performed safely, the work shall not be performed until it can be completed safely.
AUTHORIZATION: The information on this permit has been evaluated, the site has been examined and all safety measures are in place.	
Signed: _____ Permit Authorizing Individual	