BjERK BUILDERS, Inc.

# SAFETY POLICY

1383 N. Tech Blvd., Suite 101
Gilbert, AZ 85233
33.374620, -111.833930
Phone: 480-497-2300  Fax: 480-497-9610
www.bjerkbuilders.com

AZ B1-088897, AZ 148730 CR11, NV B2-0055420, NM GB98-406327

*Effective 2024*

PREMIER RISK MANAGEMENT®

BjERK BUILDERS, Inc.

# COMPANY PERSONNEL AND AGENT CONTACTS

| | |
|---|---|
| Responsible Company: | Bjerk Builders<br>1383 N. Tech Blvd., Suite 101<br>Gilbert, AZ 85233<br>Phone: 480-497-2300<br>Fax: 480-497-9610<br>www.bjerkbuilders.com |
| Safety Representative: | Chelsea Wilke<br>602-291-9252<br>chelsea@bjerkbuilders.com |
| RTWP Administrator/<br>RPP Administrator: | Chelsea Wilke<br>602-291-9252<br>chelsea@bjerkbuilders.com |
| Emergency Contact: | Kim Israel<br>818-319-9740<br>kim@bjerkbuilders.com |
| Authorized Agent: | Premier Risk Management<br>4501 North 22nd Street, Suite 190<br>Phoenix, AZ 85016<br>Office: 623-243-7263<br>Toll-free: 1-800-980-RISK<br>www.premierrm.com |

# Acknowledgment of Understanding
# Bjerk Builders Written Compliance Plan

I am aware of the Bjerk Builders formal safety compliance plan which is available for me to read in the business office and I may obtain a copy of the plan from my supervisor with a verbal or written request.

In accordance with 29 U.S.C. § 654, I shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this act applicable to my own actions and conduct. The company has provided training and other information on safe working expectations and a means to seek advice when I am unsure. I shall not attempt any task requiring additional training or willfully create a hazard to my fellow employees or myself. I will report any unsafe condition to my foreman, supervisor, competent person or other member of management upon discovery and not complete any task in an unsafe manner. NO ONE can request I work in an unsafe condition and no employee has the authority to change safe work practice requirements except the president of Bjerk Builders; any such change will be made in writing on the company letterhead and signed by the president of the company.

ALL EMPLOYEES HAVE THE AUTHORITY TO STOP WORK IF THEY RECOGNIZE AN UNSAFE CONDITION IN THE WORK ENVIRONMENT.

I will be provided all personal protective equipment (PPE) required for the safe execution of my work-related tasks. I will not be allowed to work if I arrive without my company-provided PPE. If I lose or damage my PPE, the company reserves the right to replace it at my expense.

In accordance with company policy, I shall forthwith report any injury, illness or other incident that occurs to me or that I witness, regardless of severity, to my supervisor. *Forthwith* is defined as *immediately when it occurs*.

Failure to comply with this requirement may result in no compensation paid and my claim potentially denied.

I understand and agree I am an at-will employee of Bjerk Builders and if I violate any company policy, practice, or procedure, I am subject to disciplinary action up to and including termination.

| EMPLOYEE NAME | SIGNATURE (BLUE INK REQUIRED) | DATE |
|---|---|---|
| MANAGEMENT NAME | SIGNATURE | DATE |

***Sign and return to your supervisor or the business office.***

BjERK BUILDERS, Inc.

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BjERK BUILDERS, Inc.

# INDEX OF ATTACHMENTS



**DO NOT REMOVE THESE ATTACHMENTS FROM THE COMPLIANCE PLAN. THESE DOCUMENTS ARE AVAILABLE AS PDF FORMS ON YOUR COMPANY NETWORK DRIVE. CONTACT YOUR BUSINESS OFFICE FOR ADDITIONAL INFORMATION.**

BjERK BUILDERS, Inc.

# Memorandum from the President

Dear Valued Team Member:

The safety of our employees, subcontractors, suppliers and customers is a priority at Bjerk Builders, hereinafter referred to as “the Company”. Compliance with federal and state laws, rules, and/or regulations’s is the responsibility of each sub-contractor for his/her own employees while working in our work environments.

Working safely is not an option, but a requirement of doing business with the Company, and we anticipate the cooperation of all people associated with our projects.

The safety policy herein governs all operations and constituents of the Company: This written policy is for all Bjerk Builders employees and adherence is a condition of employment. All employees will comply with the requirements of this policy, as well as the safety rules, instructions, and procedures issued by the owners and city, state, county, and federal governments. Failure to do so will result in disciplinary action.

It is a requirement that all subcontractors and vendors hired by the Company comply with this safety policy—collectively, the safety rules, instructions, and procedures issued by the owners and city, state, county, and federal governments. Failure to do so may breach of contract terms.

All visitors to any Company site or operations, 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.

Working safely is everyone’s personal responsibility and, as a member of our team, we expect you will be supportive of the Company safety culture. There will be no compromising on safety, and necessary precautions will be enforced to support a safe environment.

Thank you in advance for your cooperation.

Sincerely,

*Scott Bjerk*

*President, Bjerk Builders*

# Site-Specific Directive

☐ Controlling Contractor ☐ Subcontractor ☐ Vendor ☐ Other: _____

## GENERAL INFORMATION

| COMPANY NAME | PROJECT NAME | PROJECT # |
|---|---|---|
| Bjerk Builders | | |

| PROJECT ADDRESS | CITY | STATE | ZIP |
|---|---|---|---|
| | | | |

| NEAREST MEDICAL FIRST AID CENTER | ADDRESS | CITY | PHONE |
|---|---|---|---|
| | | | |

| NEAREST TRAUMA CENTER (HOSPITAL) | ADDRESS | CITY | PHONE |
|---|---|---|---|
| | | | |

## ACCOUNTABLE PERSONNEL AND AUTHORIZED AGENTS

| PROJECT MANAGER | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| ALTERNATE PROJECT MANAGER | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| SUPERINTENDENT | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| ALTERNATE SUPERINTENDENT | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| COMPETENT PERSON | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| ALTERNATE COMPETENT PERSON | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| SAFETY REPRESENTATIVE | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| RETURN-TO-WORK PROGRAM ADMINISTRATOR | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| RCS ADMINISTRATOR | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| EMERGENCY CONTACT | |
|---|---|
| NAME: | |
| EMAIL: | |
| CELL: | |

| RISK MANAGER | | | | |
|---|---|---|---|---|
| Premier Risk Management | WEB: | www.premierrm.com | PHONE: | 800-980-RISK |

## SITE INFORMATION

| ACCESS/EGRESS POINT(S) FOR ALL EMPLOYEES, SUBCONTRACTORS, AND VENDORS |
|---|
| |

| AUTHORIZED WORK DAYS | AUTHORIZED WORK HOURS |
|---|---|
| | |

## SCOPE OF WORK

| BRIEF DESCRIPTION OF PROJECT |
|---|
| |

### *Engineering Controls and PPE*

- ☐ PFS/guard rails
- ☐ GFCI
- ☐ Hard hats
- ☐ Guard rails
- ☐ Respiratory protection
- ☐ Gloves
- ☐ Trench fence
- ☐ Safety glasses
- ☐ LOTO

### *Identifiable Exposures*

- ☐ Fall-from height
- ☐ Excavation/trenches
- ☐ Ladders
- ☐ Scaffolds
- ☐ Cranes
- ☐ Electric shock
- ☐ Lasers
- ☐ Pedestrians
- ☐ Traffic

### *Other Considerations*

### *Environmental Hazards*

- ☐ Confined Spaces
- ☐ Asbestos
- ☐ Lead
- ☐ Silica Dust

### *Alternate Procedures*

- ☐ Safety monitors
- ☐ Controlled access zone

# Safe Work Practices

## A. GENERAL SAFETY

1. Employees must always be alert for unsafe work methods or unsafe conditions. *Any such condition must be reported to the competent person immediately.*

2. Employees must report all incidents, regardless of severity, to the competent person immediately.

3. All Company work environments are “safety-sensitive”. No one, regardless of position, is authorized to enter a Company work environment if they are impaired to the slightest degree. The use of controlled and/or illegal substances is prohibited by the Company substance prohibition policy. An employee taking prescribed medication altering their capacity to work safely must notify the business office immediately.

4. Horseplay, practical jokes, and sparring will not be tolerated.

5. Employees must comply with warning systems, signs, and tags.

6. Employees must never block emergency response equipment, such as fire extinguishers and first aid kits. Parking vehicles, staging equipment, and storing materials are prohibited in emergency access lanes.

7. Smoking in the work environment is not authorized. Employees may only smoke in designated areas no less than 25 feet from any structure.

8. Employees who are authorized to operate Company-owned equipment will be trained and provide written authorization.

9. The competent person will designate PPE requirements for the work environment. All employees are required to wear (at a minimum) long pants, shirt, hard hat, safety glasses, gloves, and high-visibility clothing.

## B. HOUSEKEEPING

Good housekeeping is not just common sense; it is expected. 29 CFR 1926.25 (a) requires debris be removed during the course of our work. The company restates this as “clean up the mess as you work.” This can be defined in specific terms below:

1. All employees are required to keep their work environments clean and in order at all times.

2. Material and equipment must not be placed in aisles or stairways or in front of exits, emergency showers, or electrical control panels.

3. Tools, equipment, and chemicals will be stored in designated locations when not in use.

4. All materials stored in the work environment will be kept in designated areas. Materials will be stacked and stored in a manner to maintain a safe work environment free of preventable hazards.

5. Employees are required to place all debris in trash containers and empty trash containers into dumpsters.

6. Spills are required to be cleaned up immediately. If the spill requires special handling procedures, employees must notify the competent person immediately.

## C. SLIPS AND FALLS

1. All employees are required to wear appropriate shoes in the work environment. Shoes must meet the requirements of ASTM 2412-18a and ASTM 2413-18.

2. Work environments inherently have unique walking conditions. Employees must not run, walk at an accelerated pace, or put themselves in any awkward position. Control of body movements must be maintained at all times.

3. If a situation requires the use of extension cords, hoses, cables, or any other equipment that poses a tripping hazard, this equipment must stay clear of pedestrian areas whenever possible. Signs or other means must be used to warn employees when tripping hazard is present.

4. When ladders are utilized in the work environment, they must have all manufacturer use and warning labels present. Employees are required to follow established safe work practices provided by the manufacturer. Any employee who has not been trained to safely use a ladder is not permitted to use one.

5. When damp conditions exist, employees must make every effort to dry the floor before continuing work activities. Work must never be done in an unsafe condition.

## D. MATERIAL HANDLING

All employees will encounter the necessity to engage proper material-handling techniques in the work environment. Using the following proper techniques and/or special equipment will expedite the process and prevent injuries:

1. Work must be planned carefully and efficiently to avoid the need to move anything more than is necessary.

2. Employees must not lift materials beyond their own physical capacity and training. In this situation, assistance must be sought, or proper equipment utilized, to move the material. Remember: only trained and authorized employees can operate Company equipment.

3. Gloves must always be utilized when handling materials with recognizable hazards, including, but not limited to, surfaces that are rough, sharp, hot, cold, and potentially harmful by contact.

4. When moving a load, employees must ensure they have visibility of where they are going. Obstructions and tripping hazards on their path must be observed vigilantly. When carrying long objects like pipe or lumber, the leading end must be kept just above head-height.

5. When lifting objects from the floor, employees must kneel on one knee, roll or tip the object onto the other knee, then pull the load next to the stomach and stand up. To set a load down, the reverse procedure must be followed.

## E. FIRE PREVENTION SAFETY

One of the most common and serious emergencies anyone faces is fire. Regardless of how a fire starts, it can destroy an entire work environment and endanger the lives of employees. Therefore, it is imperative to know how to handle all emergencies involving fire.

Firefighting equipment and emergency exits must be kept clear and ready for immediate use. Do not block them with equipment or material. All personnel should be familiar with the location of fire-fighting equipment.

## F. FIRST AID AND MEDICAL SERVICES

The Company has well-defined incident protocols which all employees are required to use and follow. The

protocols are included in this plan and training is completed routinely to communicate the Company's expectations. Compliance with these directives is a requirement of employment with the Company. Some basic guidelines would include the following:

1. All incidents and/or injuries must be reported immediately to the competent person. In accordance with the Company's policy, failure to "forthwith" report an injury can result in denial of workers compensation benefits. "Forthwith" is defined as "immediately."

2. Any employee who utilizes first aid supplies from a Company-supplied first aid kit must immediately notify the competent person or another member of management of the nature of any injury or illness.

3. Employees are required to utilize the Company workers compensation medical network for all work-related injuries and/or illnesses. A list of network physicians' locations, telephone numbers, and addresses is included in the Company incident protocols.

## G. EMERGENCY EVACUATION PROCEDURES

In the event of an emergency requiring the evacuation of the work environment, employees are required to follow the directives of the competent person and leave the area in an orderly fashion reporting to the designated safe assembly area. DO NOT LEAVE the designated safe assembly area until instructed to do so. If an evacuation is ordered, the protocol below must be followed:

1. Work must immediately stop. All tools and equipment must be turned off and the work environment evacuated by the nearest egress point.

2. The competent person will have employees meet at a safe assembly location to conduct head count and report the evacuation to the business office.

## H. PERSONAL PROTECTIVE EQUIPMENT AND PERSONAL HYGIENE

1. The competent person will decide what PPE is required for the work environment above and beyond the basic mandatory PPE worn daily by all employees.

2. Any employee engaged in welding will wear all protective gear required by the manufacturer, ANSI, ASTM, and/or the SDS sheet.

3. If skin comes into contact with a chemical, it must be immediately rinsed and the incident reported to the competent person.

4. Where soap and water are not available in the work environment, suitable means for cleaning hands will be provided (such as antibacterial wipes or gels).

5. All employees are required to wash their hands before smoking, eating, or contacting sensitive body areas (such as eyes) to prevent contamination.

6. All employees are required to wear appropriate shoes in the work environment. Shoes must meet the requirements of ASTM F2412-18a and ASTM F2413-18. Open-toed shoes or tennis shoes are not authorized for Company work environments.

7. When required, respiratory protection equipment will be provided and selected by the competent person. Employees who are authorized to wear respirators in the work environment must be medically cleared by a physician, trained and fit-tested prior to utilizing a respirator.

8. The competent person will select hearing protection for the work environment. Employees who work in areas where noise levels exceed permissable exposure limits will be required to wear hearing protection. In general applications, if communication requires a raised voice, hearing protection must be utilized.

## I. ELECTRICAL SAFETY

Extension cord sets used in Company work environments will be of three-wire type and be designed for extra-hard usage. Cords marked type S, ST, SO, or STO are considered hard service cords and cords marked SJ, SJO, SJT or SJTO are considered junior hard service cords. Light duty extension cords are not authorized for use.

The following electrical safety protocol must be obeyed at all times:

1. Only qualified, trained and authorized employees of the Company may work on electrical equipment.

2. In accordance with Title 29 CFR 1926 Subpart K, the Company's policy is simple: we do not work on energized circuits. With this in mind, we do understand that there are certain work processes where qualified electricians will need to work on equipment that is energized. These situations are very rare and we will follow established company protocols to determine the necessity of these requests. NFPA 70E protocols will be used for this process. If a request to complete energized work is submitted for approval, the property, and/or equipment owner must make the written request in accordance with NFPA 70E. They must detail the life safety and/or testing procedure that requires the equipment and/or circuit to remain energized. The Company's energized work permit process requires six specific levels of approval before the work process can begin. Signatures that are required include, but are not limited to, client representative requesting work, facility's manger/owner, project manager, GC safety manager, GC project superintendent and the director of field operations.

3. All portable and stationary power tools will be properly grounded during use and shall be equipped with a three-pronged plug or be double-insulated. GFCI is the primary protection system for the Company.

4. Extension cords cannot be used as an alternative to permanent wiring. Prior to use, extension cords will be inspected for damage. Cords with damaged ends, frays or cuts in the exterior sheathing, evidence of crush or over-stretching, or excessive twisting will be removed from worksite.

## J. HAND AND POWER TOOLS

All tools brought into the work environment must have the approval of the competent person. Employees will use all tools for their intended purpose and in accordance with the manufacturer's safe use instructions. Tools will not be modified and safety systems designed by the manufacturer must be attached and used.

The protocol listed below must be followed when using hand and power tools:

1. All cutting tools must be kept in good working order and sharp. They must be stored in the correct scabbard, not in pockets. All cutting tools must be stored in accordance with the manufacturer's safe use instructions.

2. The heads of striking tools must be kept dressed without mushroom or other deformities.

3. All hand tools will be inspected prior to use and removed from service if deemed unsafe.

4. Employees will not use handheld files without a proper handle attached.

5. Cords for all electric power tools will be of a three-prong design or double-insulted. Cords will be checked at the start of each shift for defect and safe operation. Tools found in need of repair will be removed from service until repaired at a qualified facility. Manufacturer labels must be in place and legible.

6. Employees must verify the location of all water, electrical, gas lines, and other utilities prior to drilling or cutting into any wall or surface.

7. Circular saws will not be used unless all safety guards are in serviceable and working condition. Safety devices will not be modified or bypassed.

8. Powder-actuated tools will not be used on any surface when there are employees on the other side. All employees in the area must be aware of any powder-actuated tools in use and utilize protection against potential injury from flying fasteners or debris. Employees authorized to use powder-actuated fasteners must possess a valid operator license.

9. When tools are not in use, they will be properly stored to prevent unauthorized use and damage. Employees are not authorized to use tools if they are not familiar with or have not received training to operate them.

10. Employees are not authorized to raise or lower tools using the power cord assemblies.

## K. HAZARD COMMUNICATION PROGRAM

The Company will maintain a chemical inventory list of all hazardous chemicals known to be present in the workplace. Safety data sheets from the manufacturer are available online. Employees will have a list of all chemicals present in their environment available for immediate review. Should a copy of the applicable SDS be needed, the information will be accessible via telephone, computer, and/or fax machine.

Listed below is the mandatory protocol for hazard communication:

1. Employees can seek SDS information from the competent person in their work environment. The information is available to them as needed, without barriers.

2. All employees will be trained prior to entering the work environment and/or being tasked with non-routine processes or introduced to new products. Employees are not authorized to utilize any product they are not trained to use.

3. Employees must follow the manufacturer’s safe use instructions found on the product label and/or the SDS.

4. All products used by the Company must be stored in accordance with the manufacturer’s instructions.

5. Employees who are using corrosive products must be aware of the closest emergency shower and eye wash station.

6. Employees are required to use the PPE identified by the manufacturer for safe use. The Company will provide all required PPE at no cost to the employee.

7. Employees will consult the competent person, manufacturer’s label, and/or the SDS for proper disposal instructions. The Company makes every effort to recycle all product containers.

*Section 1:*

***See Attachment 14 "Incident Protocols"***

# Company Safety Commitment

For a safety program to be effective, it is vital that rules be established, monitored by responsible individuals, and implemented at all levels of employment.

## MISSION STATEMENT

The Leadership of Bjerk Builders, hereinafter the Company, is committed to providing employees with a safe and healthful workplace and to comply with all requirements and/or intent of federal and state rules and regulations. Management participation is vital to the success of our safety efforts and asserts the following commitments:

1. It is the policy of the Company to provide a place of employment reasonably free from hazards that may cause illness, injury, or death to our employees. We will work proactively to maintain compliance with the Occupational Safety and Health Act of 1970; 29 USC 654; SEC. 5. Duties and all applicable State and local regulations covering business related activities.

2. It is also the Company's policy to establish an effective and continuous safety program incorporating educational and monitoring procedures to teach safety protocols, maintain standards, and correct deficiencies to yield a safe working environment. We will develop and implement safe work practices designed for the protection of our employees and facilities. The Company may have contractual obligations exceeding minimum regulatory and internal policies; employees will be familiarized with and required to comply with any such additional safety requirements.

All company supervisors and employees, including the competent person and/or authorized personnel, are responsible for the enforcement of safety policies and practices. They must ensure the following:

1. Employees under their charge are trained in the appropriate safety procedures, including chemical-specific training as required. Individual safety files are maintained at the business office for all employees.

2. They follow the procedures outlined in the incident protocols (See "Incident Protocols" on Page 203) if an incident or work-related injury or health problem occurs in their area of responsibility.

3. Equipment and property within their area of responsibility are maintained in a safe and hazard-free condition.

Employees shall be trained on the hazards of the worksite prior to commencing work. If anyone has any questions, STOP and seek a member of management, including but not limited to a supervisor, foreman, or superintendent, to get clarification.

No employee of the Company may alter, modify, or in any way change any equipment without the express written consent of the manufacturer of the equipment. Further, no employee of the Company has authorization to modify or change safety policies and/or directives without the expressed written permission of the President of the Company.

## COMPANY SAFETY PRINCIPLES

We believe the safety of our employees is of the utmost importance, along with quality, production, and cost control. Maintenance of safe operating procedures at all times is of both monetary and human value, with the human value being far greater to the Company, the employee, and the community. The following principles support this philosophy:

1. All injuries and incidents are preventable through establishment of and compliance with safe work procedures.

2. The prevention of bodily injury and safeguarding of health are the first considerations in all worksite actions and are the responsibility of every employee at every level.

3. These written safety plans describe the safe work practices and procedures for all work environments. They are an essential element of the overall Company's safety program.

4. All employees at every level are responsible for knowing and following the safety practices contained and described in this written safety plan.

## SUPERVISOR RESPONSIBILITY

Supervisors are defined in this manual as those who supervise or direct other employees. They include competent persons, supervisors, lead persons, and foremen. The duties of the supervisor are the key to incident prevention and have a vital role in creating and maintaining interest in the Company's risk mitigation efforts.

Their responsibilities include, but are not limited to, the following:

1. Daily supervision of the work environment and work progress.

2. Knowledge of Company policies and/or procedures for safe work practices and incident protocols.

3. Leading by example and complying with all safety rules, regulations and instructions applicable to their work environment and work behaviors.

4. Utilizing the company "corrective action plan" when necessary as a behavioral correction tool for the enforcement of safe work practices.

5. Orientation of all new employees assigned to their work environment prior to allowing them to engage in work activities.

6. Routine and reasonable inspections of work environments, equipment, and other recognizable unsafe conditions throughout the workday. Prompt corrective action to address any noted deficiencies.

7. Strict adherence to the Company's prohibition of the use of any substance that could impair the judgment and safe work procedures in the work environment. Removal from the work environment of any recognizably impaired employee who appears to be under the influence of controlled and/or over the counter substances.

8. Follow up on all work-related incidents to ensure employees receive necessary care, review of incident investigation for corrective action, ensure compliance with the Company's post incident substance testing requirements and the Return-To-Work Program.

9. Ensure the availability of personal protective equipment, fire extinguishers, and any other required safety equipment.

10. Advising all employees of the Company's incident protocols to include the workers compensation medical provider network, closest hospital to the work environment, and any other necessary emergency procedures.

11. Routinely complete work environment safety meetings with all employees.

## EMPLOYEE RESPONSIBILITY

In accordance with the Occupational Safety and Health Act of 1970; 29 USC 654; SEC. 5. Duties, each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant

to this Act which are applicable to his own actions and conduct. Therefore, it is a condition of employment that each employee, regardless of their position, comply with all policies, procedures and verbal directives regarding safe work practices.

Employees should remember the following key points to assist them with their compliance obligations:

1. All work-related injuries and illnesses must be reported immediately to the competent person; there are no exceptions. The competent person will decide the correct course of action relative to the incident and ensure prompt medical attention is provided without delay when necessary.

2. All employees, when required and as directed, will wear personal protective equipment while in the work environment. This includes but is not limited to, hard hat, safety glasses, gloves, appropriate foot wear, reflective clothing, hearing protection and respiratory protection. The competent person will identify all required PPE for the work environment.

3. Manufacturer installed safety devices will be in operable condition and not bypassed, removed or otherwise modified for any reason. Any equipment found in an unsafe condition will be tagged and removed from the work environment.

4. All employees have the authority to stop work when they recognize an unsafe condition. All unsafe conditions and/or other safety concerns must be reported to the competent person immediately and all work must stop until the unsafe condition is abated. Failure to follow all safety policies, procedures, and directives will result in corrective action to include, but not limited to, immediate termination of employment and/or removal from the work environment.

## SUBCONTRACTOR GENERAL REQUIREMENTS

All subcontractors, their competent person, and their employees are responsible for their conduct and the overall safety of their work environment.

1. Subcontractors will have available for review a copy of their site-specific safety plan. The plan will provide instruction to their employees on safe work practices associated with their work environment, identification of recognized and/or anticipated hazards, a list of required PPE, and a list of hazardous chemicals they will be using, storing, or leaving in the work environment as part of the work process. Subcontractors' site-specific safety plan must meet or exceed that of the Company in all areas of recognizable hazards. When subject areas differ, the respective competent person of each will determine authority and guidance to follow.

2. All subcontractors must provide access to SDSs for their employees and all other employees who request information related to hazardous substances they are using, storing, or leaving in the work environment as part of the work process.

3. Subcontractors will train their employees on the recognition and avoidance of hazards before introducing them into a Company work environment. Training records will be available for review upon request.

4. All subcontractors will have a competent person on site when their employees are engaged in work activities.

5. A completed JHA (Job Hazard Analysis) will be maintained and updated as necessary by the subcontractor's designated competent person.

6. Subcontractors will investigate all incidents in a timely manner, regardless of severity, and provide upon request a written report identifying the root cause of the incident and procedures to mitigate or reduce the likelihood of a reoccurrence.

## WORK ENVIRONMENT INSPECTION

The routine inspection of all Company work environments is an important component of our risk mitigation efforts. The purpose of these inspections is to identify potential deficiencies in the work environment related to engineering, policies and procedures, training and employee safe work practices.

The Company outsources the formal inspection process to Premier Risk Management. Their team will routinely complete unannounced inspections and when deficiencies are noted the Company will take prompt action to correct these conditions. Occasionally a condition may arise that cannot be readily abated. If this occurs all employees will be removed from the environment until the deficiency is successfully abated.

In addition to the formal inspection process, all competent persons will routinely walk the work environment to ensure there are no recognizable unsafe conditions.

## ABATEMENT PROCEDURES

All employees, regardless of position, have the authority to stop all work when they recognize an unsafe condition in the work environment. All unsafe conditions must be reported immediately to the competent person, superintendent, supervisor, foreman, and/or other member of the leadership team.

Unsafe conditions can also be reported anonymously by contacting the business office and Premier Risk Management. Contact information for the business office and Premier Risk Management is on Page 1 of this plan.

## INCIDENT AND INJURY PROTOCOLS

The Company has well-defined incident protocols with which all employees are required to comply. These protocols are included in this plan and training is completed routinely to communicate the Company's expectations. Compliance with these directives is a requirement of employment with the Company.

The Company will complete incident investigations and document all findings for training and loss control purposes. In certain circumstances the Company will contact Premier Risk Management to request a formal investigation of an incident. The purpose of most investigations is to identify potential deficiencies in safe work practices and/or engineering controls. Once identified, the Company can take prompt corrective action to reduce the probability of a repeat injury and/or loss. Disciplinary action will result if the investigation reveals an employee violated a Company policy, procedure, or safe work practice and was directly associated with the incident.

Every employee has a prominent role in assisting with the incident investigation. Employee participation is anticipated and expected when working with the Company's investigation team after an injury, illness, or other loss. All incidents, regardless of nature, will be investigated promptly. This is essential to preserving as much of the conditions at the scene as possible and ensures witnesses can provide more accurate details.

All incidents, regardless of severity, must be forthwith reported to the business office; forthwith is defined as immediately. Management will determine the necessity and type of investigation required then implement protocols accordingly.

## COMPETENT PERSON'S RESPONSIBILITY TO RECOGNIZE AND PENALIZE VIOLATORS OF SAFETY POLICIES

The competent person is directly responsible for the enforcement of all company safety policies and practices at the Company's worksites and premises. They must ensure employees under their direct supervision are trained in appropriate safety practices and procedures and follow safe work practices at all times.

If an employee is found to be violating safe work practices or procedures, the competent person is responsible for

stopping work, assessing employee's ability to complete the task safely, reinforcing the correct method of work, and issuing the appropriate disciplinary actions/documentaion.

Discipline will depend on the severity of the safety rule infraction and can range from a verbal reprimand or warning to suspension or even dismissal. (See explanation of penalty system for noncompliance with company rules and policies found on Page 20)

## COMPANY SAFETY INCENTIVE PROGRAM

The Company may institute a safety incentive program to acknowledge employees that go above and beyond the safety requirements set forth in these safety policies. A portion of each employee's salary is for working in a safe manner and following all company and regulatory safety policies.

Bjerk Builders will manage the safety incentive program for the company. Should an employee be discovered going above and beyond the requirements of the company and regulatory agency in regards to safety, he or she will be formally recognized.

## INTENT TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS

The Company will comply with all "Environmental, Health and Safety (EHS)" and security laws and regulations, including, but not limited to the following sources:

- the Occupational Safety and Health Administration (OSHA)
- the Environmental Protection Agency (EPA)
- the Department of Transportation (DOT)
- all applicable City, County, and State safety and health regulatory agencies

## POLICY STATEMENT FOR THE RETURN-TO-WORK PROCESS

The Company is committed to providing and promoting a safe and healthy workplace for our employees. Preventing incidents, injuries, and illnesses is our primary objective.

When an employee is injured on the job, the Company will use our Return-To-Work Process (RTWP) to assist the employee in returning to work as soon as medically feasible. We will arrange for immediate, appropriate medical attention for employees who are injured on the job. We will attempt to create opportunities for them to return to a safe, transitional work assignment as soon as medically possible. We will use the Company modified-duty policy when feasiblee to ensure workers return to work as soon as possible.

The process may have different names (return-to-work program, modified work program, transitional work); however, our goal remains the same — to return injured employees to safe work.

Our ultimate goal is to return our injured employees to their original jobs. If an injured employee is unable to perform all the tasks for the original job, the Company will make every effort to provide a transitional work assignment commensurate with the injured worker's capabilities. All employees are required to sign an acknowledgment of and participate in the Company's RTWP as a condition of employment.

The success of this process involves the combined efforts of management, employees and our workers' compensation insurance carrier.

## RETURN-TO-WORK PROCESS AND PROCEDURES

The following is the Company's return-to-work process.

1. The incident occurs.

2. The employee involved immediately reports the incident (and injury) to the competent person.

3. If the employee is injured, determine the level of injury and provide for appropriate medical treatment (first aid, occupational/industrial health clinic, urgent care, or emergency care).

4. If the injury is life-threatening or critical, initiate emergency medical treatment (call 911 and/or provide CPR as appropriate).

5. If the injury is not life-threatening, send the injured employee to one of the Company's designated Preferred Care Network (PCN) providers or occupational health clinic for an evaluation and/or treatment.

6. Conduct post-incident drug and alcohol testing (within 24 hours of the first report).

7. If the injury occurs after clinic hours, contact the clinic and speak with the physician on call for triage assistance and guidance. Make arrangements for drug and alcohol testing (within 24 hours of the first report). Have the injured worker follow-up with the occupational health clinic the next business day.

8. Conduct a thorough incident investigation to determine the cause of the incident and complete a Company investigation report and/or a Company incident report form.

The business office will:

1. Obtain the opinion of the evaluating/treating physician on the injured employee's ability to return to work, and forward all required information to the competent person.

2. Review the work status of the injured employee with the competent person.

3. The business office will inform the claims adjuster of the work status.

4. When required, employee will be scheduled for an IME (independent medical evaluation) of the Company's choosing.

5. When the treating physician or IME physician releases the employee to return to regular work without any restrictions, return the injured employee to his or her pre-incident position and tasks.

6. If the employee is released to return to work with restrictions, the business office will determine if the injured employee is able to return to his/her pre-injury position and tasks with the restrictions and necessary accomodations. Accomodations of the restrictitions may result in a transitional work assignment.

7. Determine what the work schedule will be, what the rate of pay will be, to whom the injured employee will report and period of transitional work assignment. These expectations will be communicated to the injured employee. The injured worker will sign a modified duty letter and a copy of this will remain in the business office for future reference.

8. The business office will notify the competent person if the injured employee refuses a transitional work assignment.

9. The injured employee's work status will be reviewed after each evaluation by the treating and/or independent physician to determine the appropriate level of transitional work tasks.

## EXPLANATION OF THE PENALTY SYSTEM FOR NONCOMPLIANCE WITH COMPANY POLICIES AND PROCEDURES, INCLUDING SUBCONTRACTORS AND VENDORS

Violation of any company safety rule or policy shall result in disciplinary action of the involved employees. Below is a list of possible disciplinary actions. Depending on the severity of the incident, any or all of these steps may be skipped, resulting in immediate termination of employment.

- **Verbal Reprimand:** An informal discussion of the incorrect behavior should take place as soon as possible after the competent person has knowledge of the safety misconduct.
- **Written Reprimand:** A written form documenting the safety misconduct shall be presented to the employee and placed in the employee's personnel file.
- **Suspension:** A period of time for which the employee is removed from the work place, not allowed to attend work, and not paid.
- **Dismissal/Termination of Employment:** The permanent separation of an employee from the company, initiated for disciplinary reasons or safety misconduct.

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/policy itself and not necessarily its end result that is the subject of the discipline.

## CORRECTIVE ACTION FORM

See "Corrective Action Form" on Page 184.

A corrective action form will be completed by the competent person, supervisor, or other authorized person for each violation regardless of severity. These forms are tools that, when utilized correctly, will provide valuable information to the employee regarding behaviors and/or actions that must be corrected to ensure compliance with the Company's safe work requirements.

Each completed form must include three basic components:

1. the reason for corrective action
2. the level of corrective action
3. the next corrective actions to be taken upon additional violations of company policies and procedures.

*Section 2:*

# Aerial Lifts

In accordance with 29CFR Subpart L, this section applies to aerial lifts to include vehicle-mounted aerial devices used to elevate personnel to jobsites above ground: extensible boom platforms, aerial ladders, articulating boom platforms, vertical towers, and any combination of such devices.

Aerial lifts, including extensible boom platforms, aerial ladders, and articulating boom platforms shall be used in accordance with 29CFR 1926.453.

Operators shall be authorized by the Company in writing, designated in writing, and available for inspection upon request. Only authorized persons shall be allowed to operate aerial lifts, per 1926.32(d). Bjerk Builders reserves the right to prohibit any person from operating an aerial lift at their sole discretion.

Lift controls shall be tested each day prior to use to determine such controls are in safe working condition.

Employees shall always stand firmly on the floor of the basket and not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

Employees must wear a fall restraint system at all times when working from and when moving an aerial lift. The restraint system consisting of a harness and tether must restrain the employee inside the basket/bucket. To conform with this standard, employees shall not use a self-retracting lifeline/lanyard arresting device.

Tying off to an adjacent pole, structure, or equipment while working from an aerial lift is prohibited.

Field modifications are strictly prohibited unless the modification has been certified in writing by the manufacturer or by any other equivalent entity.

Operators shall adhere to safe operational guidelines and follow all manufacturer’s instructions, including, but not limited to, speed, weight, fall protection, load-carrying capacity, and movement.

*Section 3:*

# Bloodborne/Airborne Pathogens

## PURPOSE

Employees throughout the construction industry are sometimes called upon to perform many tasks. The purpose of this plan is to detail those procedures to be followed in the event an employee comes in contact with body fluids from another individual. When a friend or co-worker becomes ill or injured in the workplace, it is human nature to want to help. Prior to helping, the employee should take a few seconds and assess the situation, thinking about his/her own safety, and then follow the procedures set down in this policy.

## EXPOSURE CONTROL

The Occupational Safety and Health Act (OSHA) 29 CFR 1910.1030 requires each employee exposed to blood or other infectious materials be advised of the hazards associated with exposure to potential bloodborne pathogens and trained on how to guard against them. Instruction must be provided to employees as to the potential risks involved, with training being documented following each session.

Employees shall be allowed access to this bloodborne pathogen safety program and to information regarding any specific tasks in their assigned work areas where they may be exposed to any blood or other bodily fluids at all times. All questions relating to the program should be directed to the Company or their authorized agent.

## EMPLOYEE TRAINING PROGRAM

All new and present employees will be provided with information on the requirements of the bloodborne pathogen safety program, the hazardous tasks present in their workplace, and the potential health risks of these tasks. This requirement must be met through orientation sessions for all new employees prior to assignment to a worksite and through periodic refresher training for all employees thereafter. The information and training shall include identification of the risks and symptoms of exposure to bloodborne pathogens and how to determine the presence of blood or other infectious materials in the workplace. Proactive training must also be included on methods to reduce or prevent the exposure to blood and other infectious materials such as control procedures, work practices, or personal protective equipment. In addition, employees shall be trained in procedures to follow in the event of an exposure to blood or other infectious materials.

When a task involves the handling of blood or other infectious materials, employees must know how those materials are to be contained, labeled, and properly disposed. The necessity for housekeeping and personal hygiene techniques, including hand washing, shall be emphasized. Employees must have the opportunity to ask questions and obtain answers from the trainer who must be knowledgeable in the subject matter.

All containers of blood and other infectious materials shall be properly labeled and controlled until delivered to an authorized disposal facility for incineration or decontamination by legally approved methods. Arrangements may be made with a local hospital to receive and dispose of limited quantities of these regulated wastes in cases of first-aid treatment. The Company's competent person and/or authorized agent shall be responsible for the proper disposal of all regulated wastes generated by the Company.

## HAZARDOUS NON-ROUTINE TASKS AND NEARBY WORK

In the event an employee is assigned to perform a non-routine task or is assigned to work in an area where a non-routine task is being performed, the employee will be given additional information and training related to the hazard that may be encountered in the non-routine task. This information and training will be provided as described elsewhere in this program by the first-line supervisors, the Company's competent person, or a trainer who must be

knowledgeable in this subject. The information will include the task's specific hazards, controls, and required types of personal protective equipment. Additional information shall include directions on how to use the equipment, the nature of other work being performed in or near the non-routine task, and any emergency procedures required for the task.

## UNIVERSAL PRECAUTIONS

To ensure employees who work on tasks involving an exposure to blood and other infectious materials are afforded the greatest protection available, the following policy has been established:

1. Prior to starting work on any task involving blood or other bodily fluids (including, but not limited to, cleanup of cuts, vomitus, etc.), the Company's competent person and/or authorized agent will be notified, and all employees will review these safety precautions. Universal precautions shall be observed. This means treating all blood and other bodily fluids as contagious. Particular attention shall be given to contaminated sharp objects that may penetrate the skin, including, but not limited to, needles, broken glass, the exposed ends of wires, the edge of a metal stud, etc. Safe work practices and engineering controls shall be followed diligently, including the provision and use of latex gloves, masks and eye protection, gowns, aprons, or specialized clothing where required by established safety practices. Hand washing with soap as well as other common hygiene standards shall be taught and strictly adhered to.

2. The employer shall ensure appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite.

3. Trained personnel following approved procedures may clean spills from minor cuts. Tools and any work areas contaminated by blood and other infectious materials shall be cleaned and disinfected with a solution consisting of a 1:10 concentration of chlorine bleach to water. Only trained personnel wearing appropriate personal protective equipment shall perform cleaning tasks.

4. Any blood or bodily fluid amounting to regulated waste shall be marked with a biohazard label and a perimeter established around the area. An outside cleaning agency shall be called to decontaminate the area. OSHA 1910.1030 (3) defines regulated waste as liquid or semi-liquid blood or other potentially infectious materials (bodily fluids) that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed.

## AUDIT AND REVIEW

It will be the responsibility of the Company and/or authorized agent to review this entire bloodborne pathogen safety program at least annually. The Company's competent person shall revise and update the material contained herein to reflect all changes in the management, disposal, storage and handling of blood and other infectious materials generated at any workplace. It will be the further responsibility of the competent person to periodically audit procedures in use on tasks identified as exposing employees to blood and other infectious materials so that they meet the requirements as set forth in the written company safety policies.

## HEPATITIS "B" VACCINATION

Hepatitis "B" vaccinations shall be made available to all employees who have an occupational exposure to blood or other infectious materials within 10 working days of assignment, at no cost, at a reasonable time and place. Vaccinations shall be administered under the supervision of a licensed physician or health care professional, according to the latest recommendations of the U. S. Public Health Service (USPHS). Prescreening may not be required as a condition of receiving the vaccine. Employees must sign a declination form if they choose not to be vaccinated. However, they may at a later time opt to receive the vaccine at no cost. Should booster doses be recommended by the USPHS, they will be offered to those employees affected by the exposure.

## POST-EXPOSURE EVALUATION AND FOLLOW-UP

Vaccinations and follow-up evaluations must be made available to all employees who have had an exposure incident at no cost to the employee. An accredited laboratory shall conduct any laboratory test. Follow-up procedures shall include a confidential medical evaluation documenting the circumstances of the exposure, identification and testing of the source if feasible, testing of the exposed employee's blood (with the employee's consent), post-exposure prophylaxis counseling, and evaluation of reported illnesses. Health care professionals shall be provided with all specific information to facilitate the evaluation and their written opinion on the need for hepatitis "B" vaccination following the exposure. Information such as the employee's ability to receive the hepatitis "B" vaccine must be supplied to the employer.

***All diagnoses shall remain confidential.***

## RECORDKEEPING

Medical records shall be maintained for each employee with occupational exposure to blood and other infectious materials for the duration of employment plus an additional 30 years. Medical records shall be made available to employees upon formal request.

*Section 4:*

# Compressed Gas

***This plan is adopted in accordance with 29 Code of Federal Regulation and other applicable standards. Compressed Gas Association Pamphlet P-1 and periodic revisions thereto are incorporated by reference.***

Compressed gases present unique hazards; inert and non-flammable gases (e.g., nitrogen, helium) may displace air, resulting in an oxygen-deficient atmosphere. Using corrosive, reactive and toxic gases poses chemical hazards, while flammable gases pose fire and explosion hazards. A gas may have multiple hazards, such as hydrogen chloride, which is both corrosive and toxic.

Compressed gas cylinders will be visually inspected to ensure they are in a safe condition. Visual and other inspections will be conducted in accordance with the Hazardous Materials Regulations of the Department of Transportation (49CFR Parts 171-179 and 14CFR Part 103.) Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets P-1.

## SAFE USE

There are simple guidelines all employees should follow when working with compressed gas: Never use a hammer or wrench to open cylinder valves.

1. Only trained and authorized employees of the Company will work with compressed gas.
2. When opening a valve always stand to the side of the outlet.
3. Employees of the Company are not authorized to refill cylinders and/or change their contents.
4. Gas cylinders will not be used for any purpose other than the transportation and supply of gas.
5. Employees are not authorized to repair or alter cylinders or regulators.
6. Never tamper with or disable safety relief valves on cylinders.
7. Empty cylinders will be stored separate from full cylinders and returned to a pre-approved vendor for maintenance and refilling.
8. Never use lubrication of any kind on valve assemblies, regulators or cylinders.
9. Never strike an electric arc on a cylinder.
10. Cylinders will remain securely stored with valve caps when not in use.
11. When cylinder caps are stuck and not easily removed, tools will not be used to remove them. Cylinders will be tagged “DO NOT USE” and placed in storage for return to vendor.
12. When cylinders are hoisted, they will be secured on a cradle, sling board, or pallet. They will not be hoisted or transported by means of magnets or choker slings.
13. Never use the protective valve cap for lifting a cylinder.

14. Cylinders will be moved by tilting and rolling on their bottom edges or secured in an approved cart in the upright position. Regulators will be removed, and cylinder caps put in place prior to movement.

15. When powered vehicles are used to transport cylinders, they will be secured in a vertical position.

16. Leaking, damaged or otherwise unsafe cylinders will be removed from service and placed in an area where they do not pose a risk to people and/or property.

## COMPRESSED AIR

Compressed air will not be used for cleaning purposes except where the pressure is reduced to less than 30 pounds per square inch (psi) and effective chip guarding and personal protective equipment is utilized.

## FLAMMABLE GASES

Flammable gases, such as acetylene, butane, ethylene and hydrogen can burn or explode under certain conditions. Acetylene and liquefied gases like propane will be stored in a valve up position unless specifically designed for horizontal use or storage. Before using flammable gases, a job hazard analysis (JHA) and hot work permit must be completed to determine potential ignition or heat sources such as open flames, sparks, static electricity, or excessive heat.

Many flammable compressed gases are heavier than air. If a cylinder leaks in a poorly ventilated area, these gases can settle and collect in sewers, pits, trenches, basements, or other low areas. The gas trail can spread far from the cylinder, make contact with an ignition source and the fire produced can flash back to the cylinder. Competent Persons will routinely evaluate conditions in the work environment and abate potential hazards.

## OXYGEN AND OXIDIZING GASES

Oxygen and other oxidizing gases like nitrous oxide, chlorine, and bromine can burn and destroy skin on contact. Oxidizing gases can also corrode metals. Organic materials such as oil or grease will be kept away from all oxidizing compressed gases. Regulators, tubing or other delivery systems must be cleaned to remove oil and other reducing agents to abate unstable reactions or explosions. Oxidizing gases will be stored in areas constructed of non-combustible and corrosion resistant materials. Employees will follow all storage and use instructions listed on the SDS for compressed gases.

## REACTIVE GASES

Some common reactive gases are acetylene, 1,3-butadiene and methyl acetylene. When these gases are exposed to temperature or pressure increases and/or mechanical shock, they can readily undergo chemical reactions resulting in fire or explosion. Most reactive gases contain inhibitors to reduce potential hazardous reactions; trained and authorized employees must follow all safe use practices when working with these gases.

## STORAGE OF INCOMPATIBLE GASES

All non-compatible gases will be stored in a well-ventilated dry area at least 20 feet from combustible material or other hazardous conditions. A fire wall with a minimum 30-minute rating will be used when the 20-foot separation is not feasible. Cylinders will be secured from tipping, away from elevators, stairs and other areas where employees routinely travel.

## SAFE USE OF REGULATORS AND VALVES

Only trained and authorized employees will attach regulators to cylinders. Appropriate PPE will be worn at all times including, but not limited to, protective eyewear, leather gloves and leather work boots designed for the work

environment. Before attaching a valve and/or regulator to a compressed gas cylinder, authorized employees will consult the SDS and manufacturer instructions for correct procedures and additional requirements.

1. Ensure the valve available is approved for the compressed gas to be used.

2. Always use regulators equipped with pressure relief devices if applicable.

3. Inspect the regulator and cylinder for damage. Any damage or unserviceable condition must be reported, and the equipment removed for service immediately.

4. Make sure the regulator pressure is set to zero by turning the adjusting knob counterclockwise; at least two threads must remain engaged into the regulator body.

5. The outlet valve must be fully closed.

6. Tighten the connection in a counterclockwise direction.

7. Never force the connection; if the connection cannot be completed easily you are using a non-compatible regulator and/or the threads are damaged on the equipment.

8. Secure the regulator to the cylinder using a regulator wrench, an open-end wrench or an adjustable wrench. Do not over-tighten; this will cause a leak.

9. Regulator connections and fittings are designed to connect without using Teflon tape; Teflon tape should only be used on tapered pipe threads where the seal is formed in the thread area.

10. If the regulator assembly requires gaskets, inspect them for wear and/or contamination and replace every time the cylinder is changed out.

11. To check for leaks, use a diluted soap solution to check for leaks where the valve attaches to the cylinder and around all other thread connections. If leaks are discovered, depressurize, tighten, and then recheck the connections. Use only approved solutions for this process.

12. Once the leak check is completed, open the cylinder valve slowly in a counterclockwise direction, 1/8 turn. The high-pressure gauge should rise to full cylinder pressure.

13. Turn the regulator's adjusting knob clockwise to the desired delivery pressure while observing the delivery pressure gauge. Do not exceed the maximum delivery pressure for the regulator or the system.

14. Check the system for leaks following instructions in step 10.

15. Open the outlet valve on the regulator to supply gas to the system. Delivery pressure may need some adjustment.

## SHUTDOWN OF CYLINDER WITH A REGULATOR

When gas is not in use, shut it off at the source (cylinder); never use the regulator as a shut-off valve.

For temporary shutdown, less than 30 minutes, close the gas cylinder valve completely. For extended shutdowns, greater than 30 minutes, close the gas cylinder main shutoff valve completely; set the pressure of the regulator to zero leaving at least two threads engaged into the regulator body. If the system has an outlet control valve downstream of the regulator, open the valve and purge gas from the delivery line then close it.

*Section 5:*

# Confined Space

***See Attachment 1 "Confined Space Checklist", Attachment 2 "Confined Space Entry Permit", and Attachment 3 "Confined Space Entry Review Sheet"***

***This plan is developed and implemented in accordance with 29CFR 1926, Subpart AA***

Confined spaces — such as manholes, crawl spaces, tanks and pits — are not designed for continuous occupancy and are difficult to exit in the event of an emergency. People working in confined spaces may face life-threatening hazards including toxic substances, electrocutions, explosions, and asphyxiation. The physical and atmospheric hazards that can be present in these spaces are preventable if addressed prior to entering to perform work.

Many injuries and fatalities occur in confined spaces when unknowing, untrained personnel attempt to rescue someone already in the confined space. Confined spaces can be a hazard to anyone on a jobsite — even those whose work does not involve the confined space — when personnel do not recognize hazards and enter areas they do not belong. Therefore, our Company's policies and procedures focus on communication, assignment of roles and responsibilities, and proper training.

This plan applies to and will be followed by all Company employees and subcontractors of the Company at all Company workplaces. All employees engaged in construction activities at a worksite with one or more confined spaces must follow the policies and procedures set forth in this section.

This section does not apply to excavation and trenching, which is defined and controlled by the "Excavations" section of this plan.

A confined space is a space that an employee can bodily enter to perform work, has limited or restricted means for entrance or exit, and is not designed for continuous employee occupancy.

Entry of a confined space occurs when any part of a person's body passes through an entry or opening into the spaces.

There are two (2) types of confined space: **Non-Permit** and **Permit-Required**.

- A **non-permit confined space** is a confined space that does not contain any hazards capable of causing death or serious physical harm and poses no potential for atmospheric hazards (e.g., toxic fumes asphyxiation, flammable gas or vapors, airborne combustible dust, atmospheric oxygen below 19.5 percent or above 23.5 percent).

- A **permit-required confined space** (also called a permit space) means a confined space that has one or more of the following characteristics: (1) Contains or has a potential to contain a hazardous atmosphere; (2) Contains a material that has the potential for engulfing an entrant; (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; (4) Contains any other recognized serious safety or health hazard.

**IMPORTANT NOTE** — No employee of the Company or employee of any subcontractor of the Company may enter any permit-required confined space on any worksite unless all of the following conditions have been met:

1. The Company has determined entry into the permit space is required to complete the work.

2. The Company has established a site-specific entry plan with a written permit that follows the requirements of this section.

3. Entry can only be made by personnel (employees or subcontractors) who have completed the training required in this section and who have been made aware of the site-specific hazards.

4. Entry can only be made by personnel (employees or subcontractors) whose names the competent person has included on the permit as “authorized entrants” or “rescue personnel”.

Unless the above conditions are met, no individual may enter a permit space for any reason, including inspection.

The following role definitions and assignment of responsibilities apply specifically to work controlled by this “Confined Space” section of the Plan:

- **Host employer** — This is the employer that owns or manages the property where the construction work is taking place. It is the responsibility of the host employer to provide the following information related to all known permit-required confined spaces located within the worksite. All of the following information must be provided to the controlling contractor before work begins at the worksite:
  - The location of each known permit space
  - The hazards or potential hazards in each space or the reason it is a permit space
  - Any precautions the host employer, any previous controlling contractor, or entry employer implemented for the protection of employees in the permit space
- **Controlling contractor** — This is the employer with overall responsibility for construction at the worksite. The controlling contractor must obtain the host employer’s information about the permit space hazards and previous entry operations (as noted above), and must provide information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space. The information that must be passed on by the controlling contractor includes the following:
  - The information received from the host employer
  - Any additional information the controlling contractor possesses regarding any permit-required confined spaces received from other contractors who are working (or will be working) on the site
  - The precautions the host employer, controlling contractor, or other entery employers implemented or will be implementing for the protection of employees in the permit spaces

Note that the controlling contractor also becomes the host employer when he/she is managing the property under construction and has received all the initial information required from the project owner. An example of this would be a new construction project where the general contractor has complete control of the property during construction. When performing construction work at a facility that is in operation and being used by others, the project owner would remain the host employer.

- **Entry contractor** – This is any employer who decides whether or not an employee under his/her direction (including temporary employees) will enter a permit-required confined space.

Depending on the specifics of a particular worksite, the Company may be designated in any, all, or none of these roles.

Before beginning each project, the following requirements must be met:

1. Company will request information related to permit-required confined spaces from host employer and/or controlling contractor.

2. Company will have a competent person conduct a review to determine if any confined spaces exist (or may be created during the project) in which any employees or subcontractors will work. Company will identify each space that is a permit space through consideration and evaluation of the elements of that space, including

testing as necessary. Consideration is to be given to the work to be performed in the space. The space is to be considered a permit-required space even if the only hazard in the space is a hazard created by the work itself (welding or cutting, for example).

3. All of the Company's subcontractors must perform the same review, notifying the Company of any confined spaces in which they will work (or that they will create during the project) and identifying each space that is a permit space through consideration and evaluation (including testing as necessary) of the space's elements. This review must be performed prior to beginning work on the project.

4. Upon completion of the review by the Company and all its subcontractors, the provided information will be aggregated. If any reviews identify a permit space, the information related to that space will be sent to the host employer, the controlling contractor, and all the Company's subcontractors.

During the course of construction, if the Company identifies or receives notice of any previously unidentified permit space, the information will be forwarded in a timely manner to the host employer, the controlling contractor, and all the Company's subcontractors.

If the project does not contain any permit-required confined spaces, identified either through a review noted above or through notification, then no further actions are required. The remainder of this plan does not govern entry into non-permit-required confined spaces.

If one or more permit spaces exist on the worksite, additional actions are required to be taken as follows:

1. The Company's competent person will ensure the spaces have been identified on site through posting a proper danger sign at the space that reads "DANGER — PERMIT-REQUIRED CONFINED SPACE — DO NOT ENTER." The company identifying or creating each permit space is responsible for posting the danger signs; however, the Company will not allow any of its employees or subcontractors to begin work on the site until it has confirmed the danger signs are posted at all identified permit spaces.

2. The site safety plan will be amended to include notice that these permit spaces exist, and entry into a permit space can only be made by authorized entrants or rescue personnel working under a written entry permit and plan.

3. A preconstruction meeting is required and must be attended by the Company's on-site representative and representatives from each of the Company's subcontractors. A notice of permit space and prohibited entry must be completed and given to each of the employer representatives. Each employer must take steps to notify its on-site employees of the permit spaces and enforce policies prohibiting entry by anyone other than authorized employees of the entry contractor.

4. Each entry contractor must develop a site-specific, written entry plan for each space its employees will enter. The plan must conform to the requirements contained in this section.

5. Entry can only be made after a written plan conforming to this section is established and the written permit forms have been completed.

## METHODS FOR DEVELOPING ENTRY PROCEDURES

Each permit-required confined space to be entered by one of the Company's employees or subcontractors must be addressed by a written, site-specific entry plan adhering to this safety plan and 29 CFR1926 Subpart AA. The written plan must be developed by the entry contractor in order to provide safe and acceptable entry into the space. A written entry permit must be maintained at the permit space and available for review by all persons who are assigned an entry role.

Only trained and properly equipped authorized entrants or Rescue personnel are permitted to enter any permit-

required confined space for any reason.

All personnel who will be assigned a role in the entry procedure (entrants, attendants, entry supervisor and rescue personnel) must receive training prior to entry. This training must result in an understanding of the hazards in the permit space and the methods used to isolate, control, or in other ways protect employees from these hazards. Employees who are not authorized to perform entry or rescues shall be trained not to enter and made aware of the dangers of attempting rescues. Each employee must possess the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this standard. Training must be documented and records maintained (including each employee's name, the date of training, and the name[s] of the trainers) by the Company and/or its subcontractors. Retraining will be required any time a new hazard is presented or detected for which previous training was not provided, or anytime an employee's actions indicate inadequacies in the procedures to be followed. Retraining is also required any time there is a deviation from established permit space entry procedures.

The method and requirements for entry can be divided into three categories:

1. Reclassification of the permit-required space to non-permit-required by a competent person after all hazards, including a potentially hazardous atmosphere have been removed without entry into the space

2. Modified permit entry into a space where all physical hazards in the space are eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potentially hazardous atmosphere which can be controlled by forced air ventilation alone

3. Standard permit entry

Regardless of which of these three categories is utilized, a written permit meeting the requirements of this plan must be established and posted at the permit space. Note: as long as a space is classified a permit required space, any inspections or work performed to remove or isolate hazards must be done as a standard or modified permit entry.

## RECLASSIFICATION TO NON PERMIT-REQUIRED

A space classified as a permit-required confined space may only be reclassified as a non-permit confined space when the entry contractor's competent person determines all of the following requirements have been met:

1. The space is being entered by a single entry contractor at one time;

2. The space poses no actual or potentially atmospheric hazard;

3. All hazards within the space have been eliminated or isolated

4. A document certifying the elimination or isolation of all hazards (with the date, location of the space, and signature of the person making this determination) is obtained and made available to each person who will enter the space; and

5. The documentation includes any provisions that must be maintained for the space to stay reclassified, such as lockout/tagout.

The documentation containing the reclassification must be maintained on-site and reviewed by the entry contractor's competent person prior to each entry to ensure all controls are still in place at the time of entry. If the controls are not in place, or if conditions have changed which introduce new hazards into the space, then the reclassification must be canceled immediately and the space treated as a permit-required space.

If reclassification involves the isolation of hazardous energy through lockout/tagout, the following conditions must

be met:

1. The competent person who reclassifies the space must be included in the lockout/tagout of this energy in order to facilitate the prompt return to a permit space if energy is restored.

2. Each entry employee must also lock out / tag out the source of hazardous energy.

For example, if a confined space was classified as a permit space because it contained exposed energized electrical parts or an exposed mechanical hazard, and the source of the energy is later isolated and locked out, that space could be considered for reclassification to non-permit required as long as the energy source remains isolated. If the energy source was later restored, the space would immediately return to a permit space. Keeping the competent person (who signed the reclassification) included in the process of the lockout helps ensure they are aware of the restoration of the hazardous energy.

Note: if ventilation is being used to control the atmosphere, the space cannot be reclassified. Instead, use the modified entry procedures described in the following section.

## MODIFIED PERMIT ENTRY — HAZARDOUS ATMOSPHERE ONLY

If all of the hazards within a confined space can be eliminated or controlled (through lockout/tagout, for example) except for an actual or potentially hazardous atmosphere, that space can be entered using this modified permit entry procedure as long as the actual or potential hazardous atmosphere can be controlled through forced air ventilation alone. Under this modified entry procedure, the requirements for an entry supervisor, entry attendants, and rescue personnel are removed, greatly simplifying the entry process. In order to use this process, the following requirements must be met:

1. All hazards, except for the actual or potential hazardous atmosphere, must be eliminated prior to opening the access to the space.

2. Only one entry contractor is permitted to enter the space at one time. Entry by multiple entry contractors at one time must be done using the standard permit entry procedures.

3. The entrance or access to the space must be guarded by a suitable temporary barrier preventing anyone from falling into or accidentally entering the space and protect the entrants from foreign objects entering the space.

4. Continuous forced air ventilation must be used sufficient to ensure the atmosphere will remain safe during the entry as determined by a competent person.

    a. Direct the air to ventilate the immediate areas where an employee is or will be present within the space and continue until all employees have left the space.

    b. The air supply for the forced air ventilation must come from a clean source and not increase the hazards in the space.

5. Prior to entry, the internal atmosphere must be tested, with a calibrated direct-reading instrument, for oxygen content, flammable gases and vapors, and potentially toxic air contaminants, in that order. Any employee who enters the space or their authorized representative must be provided an opportunity to observe this pre-entry testing.

6. The atmosphere within the space must be continuously monitored unless acceptable justification for periodic monitoring is included in the entry plan.

7. The monitoring equipment must have an alarm to notify all entrants if a specified atmospheric threshold is achieved.

8. A safe means must be provided for entering and exiting the space. If a hoisting system is used, it must be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer in writing prior to use.

9. All entrants must immediately exit the space if a hazard is detected during the entry.

If a hazard is detected during entry, the entrants must immediately exit the space and a competent person must evaluate the space to determine how the hazard developed. The space must then be re-evaluated by the entry contractor's competent person to determine if this modified permit entry is still suitable. If a hazardous atmosphere develops during this procedure, in spite of the forced air ventilation being used, further entry under this modified permit entry procedure is prohibited unless a competent person determines the source of the hazard and documents the its elimination.

## STANDARD PERMIT ENTRY

Any confined space that is designated as a permit space and cannot be reclassified or does not qualify for the modified permit entry procedure described in this plan must follow all the requirements for a standard permit entry, including all provisions contained in 29 CFR196.1204. Note that any confined space classified as permit-required due to the work being conducted in the space (welding or cutting, for example) can only be entered under this standard permit entry procedure when hazardous work is to be performed. In other words, an underground vault that will be entered at different times to conduct different types of work may be entered under the modified permit entry procedures when conducting non-hazardous work, but the full standard permit entry procedures would have to be followed when entering to perform hazardous work such as welding or cutting. In addition, any permit space entered by more than one entry contractor at one time must be entered following these standard permit entry procedures.

A standard permit entry must be conducted under the supervision of a designated entry supervisor. An entry supervisor is a qualified person responsible for determining acceptable entry conditions at a permit space where entry is planned, authorizing entry, overseeing entry operations, and terminating entry. Entrance must be coordinated by the controlling contractor when more than one entry contractor at a time performs entry or entry is performed alongside other activities that could foreseeably result in a hazard in the permit space.

The entry supervisor must sign the permit to authorize each entry into the permit space upon verifying the following:

- All tests specified by the permit have been conducted

- All procedures and equipment specified by the permit are in place

- Rescue services specified in the site-specific entry plan are available

- The means for summoning rescue services are operable, and that the authorized attendant will be notified immediately if the services become unavailable

Under the following circumstances, the entry supervisor must terminate entry and take action as defined below:

- When entry operations covered by the entry permit have been completed, the entry supervisor must cancel the entry permit.

- When a condition prohibited under the entry permit arises in (or near) the permit space and is temporary in nature without affecting the configuration of or creating new hazards in the space, the entry supervisor may either cancel the permit or suspend it and fully reassess the space before allowing reentry.

- When a condition prohibited under the entry permit arises in (or near) the permit space and is *not* temporary in nature, the entry supervisor must cancel the entry permit.

Each standard permit entry space must have an entry attendant assigned to remain outside the space for the duration of the entry operations, or until relieved by another attendant. The entry attendant must be familiar with and understand the hazards faced during entry, including information on the mode, signs or symptoms, and consequences of any hazardous exposures. The attendant must positively identify each authorized entrant prior to entry, maintaining an accurate account of who is in the space at all times. The attendant must also have a means for communicating with entrants at all times in order to continually assess their condition and/or alert them of the need to evacuate.

Additional duties of the entry attendant include:

1. Continually assess the conditions inside and outside the space to determine if it is safe for the entrants to remain in the space.

2. Order the authorized entrants to evacuate the space if any prohibited conditions occur or if any conditions occur inside or outside the space that create a hazard to the entrants.

3. Summon rescue and other emergency services as soon as it is determined the entrants may need assistance to escape from the space.

4. Prohibit unauthorized entrance into the space and notify the entry supervisor in the event prohibited individuals attempt to enter the space.

5. Conduct non-entry rescues in accordance with the site-specific entry plan.

The entry attendant may not perform any duties that might interfere with the their primary duty to assess and protect the authorized entrants, nor may they leave the space for any reason (including to perform an authorized entry rescue) until relieved by another authorized entry attendant. If unable (for any reason) to perform entry attendant duties, the entry attendant must order the evacuation of all entrants.

In most cases, an entry attendant will be assigned to watch over a single permit space. However, an entry attendant may oversee more than one permit space, provided they can effectively perform their duties for each permit space to which they are assigned. If multiple spaces are to be assigned to a single entry attendant, the site-specific entry plan must include the means and procedures enabling the attendant to respond to an emergency affecting one or more of those permit spaces without distraction from their responsibilities to the other permit spaces. The entry attendant may be positioned anywhere outside the permit space as long as their location allows them to perform their duties.

An authorized entrant must be trained in confined space entry and hazard awareness, possessing a familiarity with and understanding of the hazards potentially faced during entry. This includes information about the mode, signs or symptoms, and consequences of the exposure. An authorized agent must also be trained to properly utilize all required equipment and PPE. Each entrant must have a means for communicating with the entry attendant to facilitate continual assessment. Entrants must alert the entry attendant upon detecting any warning sign, symptom of exposure to a dangerous situation, or prohibited condition. Entrants must evacuate immediately under any of the following conditions:

1. An order to evacuate is given by the entry attendant or entry supervisor.

2. Any warning sign or symptom of exposure to a dangerous situation is encountered.

3. A prohibited condition is detected.

4. An evacuation alarm is activated.

## ESTABLISHMENT OF RESCUE PROCEDURES

For all standard permit entries, the site-specific entry plan must establish a means of non-entry rescue, unless retrieval equipment would increase the overall risk of entry or not contribute to the rescue of the entrant. The entry employer must ensure retrieval systems or methods are used whenever an authorized entrant enters a permit space and must confirm, prior to entry, that emergency assistance would be available in the event that non-entry rescue fails. Retrieval systems must meet the following requirements:

1. Each authorized entrant must use a chest or full body harness, with a retrieval line attached either at the center of the entrant's back near shoulder level, above the entrant's head, or at another point established by the employer that presents a profile small enough for the successful removal of the entrant. Wristlets or anklets may be used in lieu of the chest or full body harness if the employer can demonstrate the use of a chest or full body harness is either infeasible or creates a greater hazard and the use of wristlets or anklets is the safest and most effective alternative.

2. The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware rescue is necessary. A mechanical device must be available to retrieve personnel from vertical type permit spaces more than five feet (1.52 meters) deep.

3. Equipment unsuitable for retrieval must not be used, including, but not limited to, retrieval lines that have a reasonable probability of becoming entangled with the retrieval lines used by other authorized entrants and retrieval lines that will not work due to the internal configuration of the permit space.

The entry contractor must designate an entry rescue service whenever non-entry rescue is determined to be infeasible. The entry rescue service must be able to respond to a rescue summons in a timely manner, considering the hazard(s) identified. What will be considered timely will vary according to the specific hazards involved in each entry. For example, a rescue service would be required to be on-site for immediate response to rescue an entrant wearing respiratory protection while working in areas defined as immediately dangerous to life and health (IDLH) atmospheres.

The rescue team must be evaluated and selected based on their proficiency with rescue-related tasks and equipment and for their ability to function appropriately while rescuing entrants from the particular permit space or types of permit spaces identified. Individuals on the rescue team must be equipped for, and proficient in, performing the needed rescue services. Rescue team members must also be made aware of the anticipated hazards and given access to the permit spaces they may be required to enter so they can develop appropriate plans and procedures.

The designated rescue service must be informed of all entry schedules and notify the entry contractor immediately in the event their services become unavailable.

An entry contractor may utilize its own employees as rescue personnel as long as they take the following measures to provide the personnel with training and equipment:

1. Provide each affected employee with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train each affected employee so the employee is proficient in the use of that PPE.

2. Train each affected employee to perform assigned rescue duties.

3. Ensure employees successfully complete the required training and establish the same proficiency as authorized entrants.

4. Train each affected employee in basic first aid and cardiopulmonary resuscitation (CPR).

5. Ensure the availability of at least one member of the rescue team or service holding a current certification in basic first aid and CPR.

6. Ensure affected employees practice making permit space rescues before attempting an actual rescue, at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Practice rescue is not required if an affected employee has properly performed a rescue operation within the last 12 months in the same permit space the authorized entrant will enter, or in a similar permit space. Representative permit spaces must, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

If an injured entrant is exposed to a substance for which a safety data sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information must be made available to the medical facility treating the exposed entrant.

## REQUIREMENTS FOR THE PERMITTING PROCESS

Before entry is authorized, each entry contractor must provide a site-specific entry plan and complete a written permit for each permit space to be entered. The completed permit must be made available at the time of entry to all authorized entrants or their authorized representatives by posting it at the entry portal, or by any other equally effective means, so the entrants can confirm pre-entry preparations have been completed. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit. When work is completed, the entry contractor will cancel the permit. The entry contractor must retain each canceled entry permit for at least one year to facilitate reviews of the permit-required confined space program. Any problems encountered during an entry operation must be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.

Canceled permits shall be reviewed by the entry contractor within one year to evaluate the effectiveness of all aspects of the entry procedures. The Company may perform one annual review of all permits from the previous 12 months to review the overall effectiveness and will modify the plan as needed.

## THE ENTRY PERMIT

The entry permit documenting compliance with this plan and authorizing entry to a permit space must identify the following:

1. The permit space to be entered

2. The purpose of the entry

3. The date and the authorized duration of the entry permit

4. The authorized entrants within the permit space, recorded by name or by such other means (for example, through the use of rosters or tracking systems) as will enable the attendant to determine quickly and accurately — for the duration of the permit — which authorized entrants are inside the permit space

5. Means of detecting an increase in atmospheric hazard levels in the event the ventilation system stops working

6. Each person, by name, currently serving as an attendant

7. The individual, by name, currently serving as entry supervisor and the signature or initials of each entry supervisor who authorizes entry

8. The hazards of the permit space to be entered

9. The measures used to isolate the permit space and to eliminate or control permit space hazards before entry. Such measures may include, but are not limited to, the lockout or tagging of equipment and procedures for purging, inserting, ventilating, and flushing permit spaces

10. The acceptable entry conditions

11. The results of tests and monitoring performed, accompanied by the names or initials of the testers and by an indication of when the tests were performed

12. The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services

13. The communication procedures used by authorized entrants and attendants to maintain contact during the entry

14. Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with the entry plan

15. Any other information necessary, given the circumstances of the particular confined space, to ensure employee safety

16. Any additional permits, such as for hot work, issued to authorize work in the permit space

## TESTING OF ATMOSPHERIC CONDITIONS

Any time a space may pose an actual or potential atmospheric hazard, atmospheric testing and monitoring shall be performed prior to entry and as specified herein. Hazardous gases vary in weight. Therefore, it is necessary to take air samples from the confined space at different levels with properly calibrated equipment. The results of the test shall determine necessary control measures. Required testing shall be based on the anticipated hazards and defined in the site-specific plan.

Only direct reading instruments shall be used when testing the atmosphere. If the atmosphere is deemed oxygen rich, oxygen deficient, or to be otherwise hazardous, employees shall not enter until the appropriate control measures have been taken and the atmosphere is deemed acceptable.

- 19.5% is the minimum acceptable oxygen level for work without an air-supplied respirator.

- Oxygen levels above 23.5% cause flammable and combustible materials to burn violently when ignited.

If oxygen levels fall below 19.5%, the confined space shall be ventilated or air-supplied respirators shall be used. Forced ventilation shall be accomplished with fresh air only. Pure oxygen shall not be used.

If oxygen levels are above 23.5%, similar measures shall be taken until the oxygen levels subside to normal. At no time will anyone enter a confined space with an enriched oxygen atmosphere.

## PROTECTION FROM EXTERNAL HAZARDS

All entrances, holes, etc., shall be adequately marked and barricaded to prevent pedestrians, vehicles, etc. from entering and entrants from being trapped or injured from falling objects or external hazards.

## ACTIVE SEWER PIPE SYSTEM INSPECTIONS

Utilizing a permit, active sewer inspections will be completed only by employees trained in entry procedure. Workers that perform the inspections must follow the exact procedures.

Workers entering into sewers for inspections must use personal monitors with visual and audible alarms. They should continuously test for oxygen levels, combustible gases, hydrogen sulfide, and carbon monoxide. Broad range sensors may also be used to test toxic levels.

Prior to and during entry, communications with weather, fire, and emergency services must be maintained to track surge flow and flooding.

In large bore sewers, workers will be provided with escape self-contained breathing apparatuses (SCBAs), waterproof flashlights, two-way radios, and boats.

*Section 6:*

# Control of Hazardous Energy — Lockout/Tagout

***If any equipment is in need of repairs, stop work immediately. Employees are not authorized to perform repairs and must notify management immediately of the matter.***

## PURPOSE

In accordance with 29 CFR 1926.416 and 417, no work shall be done in close enough proximity to any part of an electric power circuit for an employee to make physical contact with it in the course of work. All employees shall guard against electric shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means.

1. Barriers or other means of guarding must be secured to make sure the workspace for electrical equipment will not be used as a passageway when energized parts of electrical equipment are exposed.

2. Working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a hazard to employees.

3. In existing installations, no changes shall be made by an employee of the Company to the circuit wiring. Management will select a professional electric company should any changes to existing installations be required.

## SCOPE

This program establishes the minimum expectations for all Company employees as it relates to the control of hazardous energy. It is to be used to ensure machines and equipment are isolated from all potentially hazardous energy sources whenever servicing or maintenance activities are in progress. The competent person is responsible for the successful implementation of the LOTO procedure to include the proper selection of appropriate LOTO devices.

## RESPONSIBILITY

1. The Company's designated representative will administer the program for this company. Specific responsibilities include the following:

    a. Provide training for recognition, control, and isolation of hazardous energy, including means and methods of installing and removing lockout/tagout devices.

    b. Maintain a current listing of employees who have completed specific training related to the control of hazardous energy.

    c. Implementation, enforcement, and monitoring of this program.

    d. Maintain an adequate supply of required equipment and "danger" tags for use each time a lockout process is performed.

    e. Conduct routine reviews to identify potential deficiencies in this program.

2. Each competent person is responsible for the effective use of this program in the work environment and ensuring all required procedures are followed in every instance.

3. Each employee is responsible for learning and following the procedures and practices developed under this program. At no time will an employee work on any circuit without being familiar with Company procedures and directly involved in the LOTO procedure.

## BASIC LOCKOUT PRINCIPLES

All circuits that control energy to equipment must be locked out to protect against accidental or inadvertent operation when operation could cause injury to personnel. Locks are to be applied and removed only by the authorized employee who is performing the servicing or maintenance.

No one should attempt to operate locked out equipment.

Lockout devices with an appropriate “danger” warning tag shall be used only for energy control. Prior to the servicing or maintenance of equipment, a locking device and “danger” warning tag will be obtained from the competent person. Each locking device will be keyed differently with no master key or duplicate keys available.

## TRAINING

All employees will receive training on the recognition and avoidance of hazards related to kinetic energy, pneumatic energy, electrical energy, and thermal energy. Competent persons and/or authorized employees will be trained in the recognition of hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods the Company uses to isolate and control energy hazards.

## LOCKOUT

**The competent person must complete a Task Hazard Analysis before beginning any LOTO procedure.**

### *A. SEQUENCE OF LOCKOUT:*

The following are required procedures to be followed for lockout:

1. Notify all affected employees that a lockout procedure is going to be employed.

2. Identify the appropriate switch, valve, etc. that will isolate the energy source.

3. Shut down all machines and/or equipment on the circuit using normal procedures before lockout/tagout procedure is employed.

4. Select the appropriate device and lock the energy source using the Company approved locks and danger tags. Name and phone number of person placing the warning tag shall be documented legibly on the tag.

5. Release, restrain, or dissipate any stored energy.

6. Verify that energy isolation is complete by attempting to start all machinery and/or equipment in the normal manner.

7. After verifying all machinery and/or equipment is successfully isolated, return all operation controls to the “neutral” or “off” position.

### *B. RESTORATION TO NORMAL:*

1. After service or maintenance is complete, clear the area directly adjacent to all machinery and/or equipment.

2. Clear work areas of all tools and repair equipment.

3. Ensure all safety guards have been replaced and all safety interlocks reactivated (if so equipped).

4. Verify the operating controls for all machinery and/or equipment are in the “off” or neutral position.

5. Remove all lockout and tag devices and deactivate the energy isolation devices to restore energy.

6. The competent person will inspect all work to ensure circuits are operating correctly and machinery and/or equipment is in safe working order.

7. Notify affected personnel of restoration to normal.

8. All paperwork, including, but not limited to, the Task Hazard Analysis, will be returned to the business office upon the completion of the project.

## PROGRAM REVIEW

At least annually, a designated representative will verify the effectiveness of the Company LOTO procedures. These evaluations may be carried out through random audits and observations.

The inspector will review the LOTO procedure with all authorized employees and observe the implementation of a LOTO procedure. This review will be documented by the inspector and all results reviewed with the Company in an effort to identify potential deficiencies with the program.

These reviews ensure the LOTO procedures are being properly used and provide a routine evaluation of the continued adherence to Company procedures. Management will ensure the reviews are completed. All deficiencies will be corrected immediately, either by modification of the procedure, retraining of employees, or a combination of both.

## OUTSIDE CONTRACTORS

Outside personnel and/or contractors involved in lockout of equipment or machinery affecting Company employees must submit their energy control procedures, in writing, to the business office. All affected employees and/or contractors must be trained and familiar with the submitted procedure.

In order to protect Company employees, the contractor’s work area will be isolated and access by Company employees restricted.

Outside employees and/or contractors failing to follow safe work practices required by NEC, NFPA, or OSHA will be asked to terminate their work until their program is brought into compliance.

*Section 7:*

# Cranes and Lifting

***See Attachment 5 "Crane Safety Checklist", Attachment 6 "Crane Hand Signals", and Attachment 7 "Crane Lift Plan"***

***This plan is developed and implemented in accordance with 29 CFR 1926, Subpart CC.***

## PURPOSE

Proper procedures must be followed to ensure crane/lifts and lifting devices handle loads properly, safely, and with maximum efficiency. Prior to the selection, delivery, erection, use, or removal of any crane/lift, the competent person shall review this section of the Company's policy with all employees involved in the operations of the crane to ensure and enforce their compliance. The inspection reports for the crane/lifts and lifting devices is simply a measure to ensure a competent, certified person, who shall be the operator, inspects certain items and has the reports readily available with the crane on site. Crane operators, riggers, and signalers must be qualified, with verification of training available upon request.

Rated load capacities, operating instructions, and special hazard warnings shall be conspicuously posted on all equipment and shall be visible to the operator while he/she is at the control station.

## INSPECTION

Cranes requiring assembly on site shall be inspected by an assembly/disassembly director prior to the crane's usage. Any modifications or adjustments made to cranes shall be done and re-inspected by a qualified person before the crane is put into use. Manufacturers' recommended inspections and annual inspections of the crane shall be performed by a qualified person. Shift inspection and monthly inspections shall be conducted by the competent person prior to the use of the crane. These inspections shall be received and reviewed by the Company's competent person prior to its use. All inspections shall meet material-lifting device (e.g., cranes) standards mandated by the manufacturer and OSHA.

Additionally, crane/lift and lifting devices shall be inspected after setup (prior to initial lift), before each shift, and after every malfunction or incident. Daily/annual inspections shall be performed, including (at a minimum) examination of the following items:

1. All control mechanisms for maladjustment interfering with proper operation
2. Ground conditions for outriggers and support of the load being lifted
3. All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter
4. All safety devices for malfunction or defect
5. Deterioration or leakage in air or hydraulic systems
6. Crane hooks with deformation or cracks
7. Sling and choker strands, fraying, or kinking
8. Electrical apparatus malfunction, defect, and signs of excessive wear, dirt, and moisture accumulation
9. Wire rope used to hoist the load

## RIGGING/LIFTING DEVICES

1. Daily visual inspections are required.

2. Monthly documented inspections required.

3. All defective rigging/lifting devices shall be immediately removed from service and destroyed to prevent use. Examples include, but are not limited to:

    a. Frayed nylon rigging
    b. Unraveling stitching
    c. Elongated or deformed devices used to hoist
    d. Missing load rating tags or labels
    e. Burnt nylon rigging
    f. Faded or worn fabric
    g. Kinked cable chokers
    h. Bird caging
    i. Crushed / cut wire cabling

## RECORDKEEPING

In addition to daily, monthly, and annually documented inspection records, all records pertaining to crane/lift inspections shall be kept with the crane/lift or in the Company's workplace field office. Valid certificates of insurance shall be retained on file for each crane on site. If during any safety inspection, the operator or competent person cannot produce the required crane/lift sheets, the crane shall be shut down as soon as possible and inspected.

A copy of certified operator license from an accredited organization must be obtained, validated, and archived for the crane/lift to be operated. Documentation of daily/monthly inspections must be submitted to the Company's business office and made part of the permanent record.

## CRANE SELECTION AND SETUP

The certified operator shall be responsible for selecting a crane/lift of sufficient capacity and with appropriate design features suitable for the intended lift. The operator shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all crane/lift devices and derricks. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a qualified engineer competent in this field. Such determinations shall be appropriately documented and recorded and available at the workplace.

Once the appropriate crane/lift has been selected, the operator shall be responsible for obtaining the proper permits to transport the equipment to the site. The operator shall schedule the delivery of the crane/lift with the competent person and local agencies of jurisdiction over routes of transportation and any utilities that may need to be cleared.

At the site, the certified operator and or assembly/disassembly director shall be responsible for the following:

1. Confirm ground condition assessment determined there are no underground hazards (utilities, vaults, tanks, etc.).

2. The proper placement of the crane/lift in relationship to the load to be handled and the landing area so as to obtain the best-rated lift capacity.

3. Leveling the crane/lift to within one degree of level and reassuring the level a minimum of three times during each eight-hour work shift.

4. The proper placement and use of outriggers for all lifts, except where the manufacturer permits otherwise for assembly of boom only.

5. The determination of stable or unstable ground for footing. Should additional floats, cribbing, timbers, or other structural members be needed, they shall be of proper design and sufficient to uniformly distribute the load.

6. The installation and maintenance of crane/lift swing radius protection.

7. The proper protocol for working around, under, or near overhead power lines in accordance with OSHA's mandates for working near power lines.

## LOAD RATINGS

The operator shall be responsible for determinations regarding the weight of all auxiliary-handling devices, such as hoist blocks, headache balls, and hooks considered part of the total rigging. Additionally, the weight of all items added to the load at the site must be determined and added to the total weight.

NOTE: Some manufacturers require the load cable also be considered as part of the total load weight.

## GROUND STABILITY

The competent person shall request all available information regarding ground conditions and any known underground hazards from the controlling contractor in writing, verbally, or through marking at the lift site. The controlling contractor is responsible for suitable ground conditions for the lifting operations.

One critical factor of proper crane/lift setup is a firm-supporting surface. For maximum capacity, the crane/lift must be level. To maintain a level standing, however, the ground surface must be adequate to support the dynamic load of a working crane/lift. The operator shall consider the following four basic elements:

1. **Total imposed load** — The load on the tires, outrider wheels, or tracks is derived from the sum of the gross weight of the crane/lift and the suspended load. Shock or dynamic (movement) loads (as a result of fast hoisting, lowering, swinging, or wind forces) can exert additional loading. This total load must be considered.

2. **Supporting surface area** — The amount of area in contact with the ground will determine the bearing pressure the crane/lift and load exerts on the soil. When it is determined that the bearing pressure exceeds soil stability, the bearing area of the crane/lift must be increased by the use of cribbing. It is important that cribbing be strong enough to withstand the weight of the crane/lift without major deflection, thus, actually increasing the bearing surface. Cribbing also must be bolted or secured together to prevent slippage and collapsing and be in complete contact with the soil without any voids or unsupportable areas.

3. **Bearing pressure** — The bearing pressure on the corner outrigger is a greater percentage of the total imposed load on that outrigger when the load is moving over that corner outrigger. The percentage on each corner will vary depending on the type of crane/lift and operating radius. A good rule to follow is to assume each corner is carrying 85 percent of the load. An example calculation would be:

   *= Crane and load — 150 tons*
   *= One 2 ft. × 2 ft. float — 4 SF*
   *= Assume 85% of load at corner*
   *= Corner bearing pressure — 31.8 tons/SF*
   *= (150T/4SF × .85 — 31.8T/SF)*

4. **Soil stability** — The bearing pressure, described above, must be compared to the load-bearing qualities of the soil. For descriptive purposes, it is convenient to distinguish between three broad groups of soils, including sand and gravel; fine grained soils, including silts and clays; and organic soils, including peat. Different soil types give different load-bearing pressure. When setting up a machine, the operator should be able to distinguish

between the three groups of soil, the approximate mixture of each, their moisture content, and their depth. The operator must also consider factors such as water tables and distance to excavations, which affect the soil's ability to withstand the pressure without collapsing. Tables are available listing the relative load bearing capabilities of the soil types under static loads. Local building code requirements and the project soil boring logs shall be considered by the operator in evaluating the soil bearing capability prior to erection of a crane/lift.

## OPERATOR QUALIFICATIONS

No one other than the personnel listed below shall be in or on the crane/lift during operations:

1. Only fully certified/qualified personnel shall operate cranes and lifting devices.
2. Only the following shall be recognized as a certification as per OSHA's mandates:
    a. Certified through a nationally recognized accreditation organization
    b. Certified through a company program approved by a nationally recognized accreditation organization
    c. State or local government programs approved by a nationally accreditation organization
    d. Military (only relevant while serving in the military)
3. Inspectors certified and or qualified for crane/lift inspection/assembly.
4. Test and maintenance personnel, when necessary, shall be qualified to perform the repairs or adjustments.

## OPERATING PROCEDURES

1. The operator shall not engage in any practice that may divert his/her attention while engaged in crane/lift operations. The crane/lift shall not be operated by anyone who is physically or mentally unfit or taking prescription drugs that may affect judgment.
2. The operator shall not respond to any signal which is unclear or given by anyone other than the appointed signal man, with the exception of stop signals, which require a response no matter from whom they are received.
3. The operator shall not permit trainees to make initial lifts. The operator shall perform the first lift to determine lift stability, crane/lift function, and safety in general.
4. The operator shall be familiar with the crane/lift and its care, the operator's manual, and load charts. He shall be responsible for notifying his supervisor of any needed adjustments or repairs and logging his findings in the crane/lift log.
5. Upon request, the operator shall demonstrate his ability to determine total load weight and its relationship to the crane/lift load charts.
6. No crane/lift shall be loaded beyond its rated capacity, except for test purposes under controlled circumstances and the direction of qualified personnel.
7. When loads to be handled are limited by structural competence rather than stability, the operator and competent person shall determine concurrently that the weight of the load is known within plus or minus five percent before the load is lifted.
8. Loads shall be attached to the hook by means of slings or other approved devices. No open hooks shall be used for lifts higher than two feet. Hooks used for lifts in excess of two feet shall have hook safety latches or be safety wired to prevent slings from jumping off the hook.
9. The operator shall not suddenly accelerate or decelerate a moving load.
10. Neither the crane/lift nor any part of the load shall contact any obstructions.

11. The operator shall not swing loads over personnel.
12. The operator shall not permit side-loading of booms. Lifts shall be limited to freely suspend loads. Cranes and lifting devices shall not be used to drag loads sideways.
13. The operator shall implement a power line encroachment plan that addresses working within 20 feet of a live power line where a crane could come in contact with the utility.

## QUALIFIED SIGNALERS

In the event that the operator's view is obscured at the point of operation or in the course of swinging the load, or as warranted by any site-specific safety concerns (e.g., overhead power lines), a qualified signaler is needed to properly guide the operator around the hazards. A qualified signaler shall meet the following criteria:

1. Know and understand the signals determined by the operator.
2. Demonstrate competency in using the signals.
3. Have a basic understanding of crane functions and operations.
4. Have passed a verbal or written test plus practical test to show competency in signaling either through the companies own test or a third-party test.

## QUALIFIED RIGGERS

When workers must occupy the fall zone to handle the load, the load must be rigged by a qualified rigger. The qualifications that OSHA mandates are defined below:

> *One who, by possession of a recognized degree, certificate, or professional standing, or, 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*

## TOWER CRANE REQUIREMENTS

Supplemental requirements for tower cranes are in accordance with CFR 29 1926.1435 and must be addressed on each jobsite needing a tower crane. Listed below are the subtitles of the requirements to be reviewed and implemented by the Company, as needed.

1. Foundations and structural supports
2. Design and inspection
3. Plumb tolerance
4. Specification and verification
5. Climbing procedures
6. Host structure strength verification
7. Wind
8. Post-erection load test
9. Monthly inspection
10. Tower mast bolts, upper-most tie-in, braces, floor supports, floor wedges

*Section 8:*

# Driver Safety

*See Attachment 26 "Work Zone Hand Signals" and Attachment 27 "Work Zone Procedures for Hand Signal Devices"*

## INSPECTIONS

It is the responsibility of every driver to perform pre- and post-trip inspections on any company vehicle they operate. This includes towed or trailer units. Operating a vehicle deemed un-drivable due to unsafe mechanical conditions by a mechanic or management will result in disciplinary action to include possible termination of employment.

## LOADS

It is the driver's responsibility to ensure loads on or in their truck are secure before operating any company vehicle on a public highway.

## DRIVERS/PASSENGERS

At no time will anyone under the age of 21 be permitted to operate a company vehicle, without specific prior approval from an authorized agent of the Company.

Driver and all passengers will wear seat belts at all times while any company vehicle is in motion. Passengers shall be permitted only in areas designated for occupancy by the vehicle manufacturer and in accordance with the vehicle's specifications. Only employees of the Company or authorized personnel are permitted to drive or ride in any company vehicle. At no time is any person permitted in the cargo area of a vehicle while the vehicle is in motion on a public roadway.

To drive a company vehicle or personal vehicle on company business, the following requirements must be met:

1. Employee must be authorized by way of job description, title or temporarily for particular company business.

2. Employee must have the appropriate, valid driver's license and must not have more than 14 points (as determined in the "Can't Drive List" on Page 49) during the last 36-month period based on their Department of Motor Vehicle record.

3. Employee must be satisfied that the vehicle is in safe operating condition.

4. Employee must be able to drive the vehicle safely.

5. Employee must comply with city, county, and state safety regulations and the Company's fleet safety rules.

6. Company vehicles are to be used for company business only.

Transporting employees in the cargo area of company trucks will be permitted only in construction zones and under the following conditions:

- They must be employees of the Company who are assigned to the specific project where they are being transported. The employees must be sitting down, with arms and legs completely inside the cargo area.

- Transporting employees in this manner is permitted only within the workplace and not permitted outside the workplace limits at any time.

## TRAFFIC LAWS

It is the responsibility of every driver to know, understand, and comply with all federal, state and local laws governing the operation of motor vehicles. At no time will any employee be allowed to operate a company vehicle if they are not properly licensed to do so. When operating a company vehicle on a workplace, the maximum speed shall be as posted or as reasonable and prudent for conditions.

All violations received while operating a company owned vehicle must be reported to the immediate supervisor as soon as possible following the incident. All collisions, regardless of nature, must be reported. Any violation that could change the status of driver's operator's permit must be reported to the immediate supervisor right away. Failure to do so may result in disciplinary action.

The Company may not represent the employee at fault or pay any fine levied where negligence on their part has contributed, whether wholly or in part, to any collision or citation (e.g., speeding, running a red light, unsafe lane change, failure to signal, or operating under the influence of any mind-altering substance, including prescription drugs).

## DRUGS AND ALCOHOL

All provisions of the drug and alcohol policy apply to this section. At no time will any employee be permitted to operate any company vehicle while under the influence of drugs or alcohol. This includes any mind-altering prescription medication, including medication that may alter or slow the decision-making process, and medication with a warning to not operate heavy machinery while under its influence.

***Anyone found driving a company vehicle while under the influence of any drug or alcohol is subject to immediate termination.***

## COLLISIONS

In the event of a collision, respond with the following actions:

1. Check on welfare of all individuals involved.

2. Render aid if necessary to the best of training and ability.

3. Call for the police and medical help if necessary.

4. Notify the Company business office immediately.

5. Take pictures of location of vehicles, orientation on scene, damage from as many sides/angles as possible. (At minimum, each vehicle has four sides to photograph). Pictures of other driver and their documents should be included if possible.

6. Survey the area for potential witnesses and document name and phone number if possible.

7. Exchange appropriate information with other drivers.

8. Obtain a copy of the police report.

9. Complete a detailed written report and submit necessary information within 12 hours.

*Never admit guilt or discuss the incident with anyone other than an on-duty police officer, the Company management representative, or the authorized agent of the Company.* The Company reserves the right to enforce special condition

mandates as deemed necessary.

## CAN'T DRIVE LIST

The following motor vehicle point system shall be used for purposes of calculating driving record points:

| POINTS | VIOLATIONS |
|---|---|
| 20 each | License suspension |
| 20 each | Criminal traffic conviction, homicide, assault, or felony arising from the operation of a vehicle. |
| 20 each | Driving under the influence (DUI) |
| 20 each | Major violation – e.g., reckless driving, endangering the lives of others, racing, hit and run |
| 6 each | At-fault bodily injuring collisions |
| 10 each | Speeding more than 5 miles per hour over the posted speed limit |
| 5 each | Any "standard" violation (e.g., failure to yield right-of-way, traffic light, stop sign, improper passing, failure to signal, driving too fast for conditions or failure to keep right.) |

Personnel, whose driving records identify them as unacceptable risks according to our insurance carrier, are also prohibited from driving.

Personnel with a driver's license that is not valid, has expired, or has been suspended or revoked are further prohibited from driving any private vehicle onto any Company-owned or operated facility, including temporary construction sites.

Personnel with a to-and-from work permit issued by the Department of Motor Vehicles will be allowed access to designated employee parking.

## COMMERCIAL DRIVER PROGRAM

A CDL (Commercial Driver's License) is required to operate the following:

- A single vehicle with a gross vehicle weight rating (GVWR) of more than 26,000 pounds.
- Any combination of vehicles with gross vehicle weight rating of more than 26,000 pounds.
- A truck with a gross vehicle weight rating of over 26,000 pounds pulling a trailer with a gross vehicle weight rating of over 10,000 pounds.
- Any size vehicle requiring hazardous materials placards.

## HEAVY EQUIPMENT OPERATION

Only trained and authorized personnel shall operate heavy equipment. Before operating or moving such equipment, the operator shall walk around the equipment and familiarize him or herself with any obstacles or hazards. An inspection of the equipment must be performed by the operator and documented before use. When working in an area around pedestrians, the operator shall make eye contact and direct communication with a designated spotter to confirm no one is in the way of the movement. The use of mobile communication devices is prohibited while operating heavy equipment.

## MOBILE TELEPHONES WHILE DRIVING

The Company *prohibits* the use of any mobile telephone while operating a company vehicle unless the device is hands-free and compliant with local motor vehicle laws. **Texting while driving is prohibited.**

## MOTOR VEHICLE SAFETY

The following are safe driving rules, which are included in the Company's safety program:

1. Do not take chances. To arrive safely is more important than to arrive on time.

2. Drivers should be mentally and physically rested and alert prior to each trip.

3. Drinking alcoholic beverages while driving or driving while under the influence of alcohol or restricted drugs is prohibited.

4. Drivers must have a valid driver's license for the type of vehicle to be operated, and keep the license(s) with them at all times when driving.

5. Traffic laws must be obeyed to the standards below:

    a. Speed shall never be faster than a rate consistent with existing speed laws and road, traffic, and weather conditions. Posted speed limits must be obeyed.

    b. Never attempt to exercise the right-of-way; always let the other driver go first.

    c. Keep to the right except when overtaking slow-moving vehicles or when getting into a position to make a left turn.

    d. Never follow another vehicle so closely that it is not possible to make a safe stop under any conditions. Observe timed interval guidelines and suggested following distance.

    e. Turn signals must be used to show where the driver is heading when going into traffic and before every turn or lane change. Remember: signaling an intention neither gives the driver the right-of-way nor guarantees a safe lane change.

    f. Slow down and watch for children in school zones.

6. Vehicles are to be driven by authorized drivers only.

7. Do not give rides to hitchhikers or strangers.

8. Drivers and passengers shall always wear seat belts.

9. Check vehicle daily before each trip, and perform a visual check before each operation of the vehicle. In particluar, check lights, tires, brakes, and steering. An unsafe vehicle should not be operated until repairs are made.

10. Drivers must report all collisions and violations immediately, as required by law and company rules.

## WORK AREA TRAFFIC CONTROL

Construction and maintenance activities on roads and streets often present motorists with unexpected and unusual

situations. Principles and procedures that may enhance the safety of motorists and workers in the work area include the following:

- Traffic and safety should be an integral and high-priority element of every project, from the planning stage through design and construction.
- Traffic should be routed through work areas with geometrics and traffic control devices comparable to those employed for normal highway situations, insofar as possible.
- Traffic movement should be restricted to as little as is practicable.
- Motorists should be guided in a clear and positive manner while approaching and driving through work areas.
- Routine inspection of traffic control elements should be performed to ensure acceptable levels of traffic operations and device maintenance.
- All persons responsible for the development, design, implementation, and inspection of traffic control shall be adequately trained.

## SIGN FUNCTIONS AND DESIGNS

Construction, maintenance, and utility signing makes use of the same three major categories as do other signs; namely regulatory, warning, and guide signs. Many signs other than those developed especially for construction activities will find applications at work zones. Special construction signs follow the same basic standards and shape of all highway signs.

## REGULATORY SIGNS

Regulatory signs impose legal obligations and/or restrictions on all traffic. Therefore, it is essential their use be authorized by the public body or official with jurisdiction over the road system. If operations require regulatory measures different from those normally in effect, the existing permanent regulatory devices must be removed or covered, to be superseded by appropriate temporary regulatory signs authorized by the jurisdiction authority.

Regulatory signs are generally rectangular, with their longer dimension vertical, and carry a black legend and border on a white background, referred to as black on white. There are a few variations to this basic shape and color scheme. For example, the STOP, YIELD, WRONG WAY, and DO NOT ENTER signs are all white on red and have different shapes.

## WARNING SIGNS

Warning signs are used to notify drivers of specific hazards that may be encountered. The basic shape for warning signs is a diamond. There are a few exceptions to this rule where the shape is changed to fit the legend.

For example, the Large Arrow sign is rectangular.

Warning signs used for activities have a black legend and border on an orange background. Existing yellow warning signs already in place within the work area may remain in use, if still applicable.

Additional information, such as advisory speeds and distance information for symbol signs may be shown on a black-on-orange supplemental plate mounted directly below the warning sign.

## GUIDE SIGNS

Guide Signs generally have a rectangular shape with the long dimension horizontal. The basic color for guide signs is white on green.

At construction zones, guide signs may be black on orange to indicate routing changes due to the construction activity. Informational signs which relate to the work being done and detour routes are black on orange.

## REFLECTORIZATION AND ILLUMINATION

All signs used during the hours of darkness shall be reflectorized or illuminated to show approximately the same shape and color day and night. Due to the variable and sometimes unpredictable nature construction operations, it is recommended all construction signs be reflectorized. A material having a smooth, sealed outer surface must be used for reflectorization; painted signs with reflective beads are not acceptable.

## ERECTION OF SIGNS SIGN MOUNTING

At construction sites, signs are often mounted on fixed supports using the same standards employed for permanent signs. At maintenance and utility work areas, signs are commonly mounted on portable supports and may be mounted on vehicles stationed in advance of the work area or moving along with it. When portable supports are used, the bottom of the sign must not be less than one foot above the pavement elevation. Barricades and drums may be used as sign supports in addition to their normal function.

## SIGN PLACEMENT AND SPACING

As a general rule, signs are placed on the right hand side of the road. Where there are two or more lanes in one direction, duplicate signs should be placed opposite each other on both sides of the directional roadway if space is available. Dual installations may also be desirable on single lane ramps when special emphasis is deemed necessary or when the normal right side placement does not provide adequate visibility.

## ENHANCING SIGN TARGET VALUE

The target value of construction signs is greatly enhanced by placing flashing lights immediately above or below the signs. Two Type A flashing lights on each sign are effective for nighttime use. A Type B high intensity flashing light should be used to improve the effectiveness of a sign both day and night.

For maintenance and utility daytime operations, sign target value is increased by attaching orange flags above and to either side of the sign.

## CHANNELIZING DEVICES AND BARRIERS — DEFINITIONS AND FUNCTIONS

The functions of channelizing devices are to warn and alert drivers of hazards created by construction activities in or near the traveled way and to guide and direct drivers safely past the hazards. Channelizing devices should be placed to provide a smooth and gradual transition in moving traffic through the work zone.

Barricades, vertical panels, drums, and cones are the most commonly used channelizing devices. When so used, they are placed in series and perform their function visually.

Barriers, on the other hand, are intended to physically prevent vehicular penetration from the traveled way to areas behind the barrier. They may provide the additional function of channelization.

## DESIGN CHARACTERISTICS AND APPLICATIONS — BARRICADES

Barricades consist of one, two, or three horizontal reflectorized rails and are classified as Type I, Type II, or Type III, respectively. Markings for construction barricades shall be alternate orange and white stripes sloping downward at a 45-degree angle towards the direction to which traffic is to pass. Barricades with stripes that begin at the upper right and slope downward to the lower left are designated as “right” (R) barricades, meaning that they are to be placed on the right side of the traveled way with traffic passing to the left. Conversely, barricades with stripes sloping downward to the right are designated “left” (L).

Type I or II barricades are used where traffic is maintained through a work zone. They may be used either singly or in groups to mark a specific hazard, or they may be used in a series for channelizing traffic. When a road section is closed to traffic, Type III barricades shall be erected at the point of closure. When barricades are used on expressways or other high-speed roadways, they must have a minimum of 270 square inches of reflective area facing traffic.

## VERTICAL PANELS

Vertical panels may be used for channelization and are particularly appropriate for traffic separation or in other locations where lateral space is restricted.

## DRUMS

The drums markings shall be horizontal, with circumferential orange and white reflectorized stripes four to eight inches wide. There shall be at least two orange and two white stripes. If there are non-reflective spaces between the reflectorized stripes, they shall be no more than two inches wide.

Drums are highly visible devices and have a good target value. They give the appearance of being formidable obstacles and, therefore, command the respect of motorists. Plastic drums that are relatively soft when impacted are available. The use of metal drums is not permitted.

## CONES AND TUBES

Traffic cones and tubular markers must be a minimum of 18 inches in height on low-speed roadways. On freeways and other high-speed roadways with a speed of 45 mph or greater and on all roadways at night, minimum 28 inch cones are required.

Cones and tubes are primarily applicable for daytime use at maintenance and utility work areas, but they also are effective for short-term nighttime operations when properly reflectorized.

## REQUIREMENTS FOR NIGHTTIME USE

For nighttime use, all types of channelizing devices must be reflectorized.

When barricades, vertical panels, and drums are used at night, warning lights should be added to increase visibility and attention-getting characteristics. Use flashing lights on devices placed at a point to indicate a hazard. Use steady burn lights when devices are placed in a series for channelization.

When used at night, cones and tubes shall be reflectorized, internally lighted, or equipped with lighting devices.

## BALLASTING

Devices used on high-speed roadways and in other situations where they are susceptible to overturning in the wind should be ballasted with sandbags placed at or near ground level. Bags may be placed on lower parts of the frame

of stays but must not be placed upon any reflectorized panel. Rigid stay bracing to hold the barricade in the open position is prohibited.

Drums may be ballasted with loose sand but not to an extent that would make them hazardous to motorists. Drain holes should be installed to prevent water from accumulating and freezing.

When cones or tubes are used, precautions are necessary to ensure they will not be blown over or displaced. This is particularly critical when these devices are placed immediately adjacent to a lane of moving traffic. In some cases, it may be necessary to double the cones, use special weighted bases, or install weights such as sand bag rings dropped over cones.

In general, cones and tubes are appropriate for maintenance and utility operations, where a crew is on site to maintain the position of the devices. The large channelizing devices are more suitable for construction and other long-term applications, where the site is often unattended for periods of time.

## PORTABLE BARRIERS - BARRIER APPLICATIONS

Barriers are used in work areas to:

- Separate opposing traffic.
- Prevent vehicles from entering especially hazardous areas.
- Provide positive protection for workers.
- Protect roadway elements, such as piers.

The most common barrier used in work zones is the portable concrete barrier, generally referred to as a New Jersey barrier.

A barrier shall not be used for a lane closing taper, as it would provide no recovery area for a vehicle that cannot find a gap in which to merge. For such applications, the lane should first be closed with a taper using a series of channelizing devices along the taper, and then the barrier may be introduced on a short taper.

## BARRIER PLACEMENT

Barriers are designed to accommodate vehicular impacts at small angles, generally at angles of 15 degrees or less. Therefore, barriers should be installed essentially parallel to the direction of traffic and within 12 feet of the traveled way. When these guidelines cannot be met, a line of channelizing devices should be installed to direct traffic away from the barrier.

The individual pieces must be connected or interlocked to act as a continuous chain. They are usually not fastened down, but where some displacement is not acceptable upon impact, they should be bolted to the pavement or locked in place with a thin pavement overlay.

The upstream end of a barrier should be flared away from the adjacent travel lane, or a crash cushion should be installed at the exposed end. A ramped end section may be used only on low speed roadways, as the ramp may cause a vehicle to roll at high speeds.

## TAPER LENGTHS AND DEVICE SPACING TAPER TYPES AND LENGTHS

A taper is placed at an angle with a permanent traffic lane to move traffic out of its normal travel path. There are five type of tapers used at work zones, each having a different criteria.

## MERGING TAPER

A merging taper is used to close a lane on a multi-lane roadway and to direct traffic to merge into the adjacent traffic lane. Adequate length must be provided for motorists to locate a gap in the adjacent traffic stream and to move into it.

The minimum desirable length for this taper should be computed by the formula L=W×S, where the speed is 45 mph or greater. The formula L=W×S2/60 should be used where the speed is 40 mph or less. In either formula, “L” is the taper length in feet; “W” is the width of the offset in feet; or “S” is the posted speed or the off peak 85-percentile speed, preferably the higher value.

## SHIFTING TAPER

A shifting taper is used to move traffic into a different travel way when a merge is not required. The length used is commonly the same as “L” computed in accord with the above formulas, although shorter tapers on the order of 1/2L may be used.

## SHOULDER TAPER

A shoulder taper is used to institute a shoulder closure. A shorter taper is appropriate as compared to lane closure. A length on the order of 1/3L is adequate for freeways and expressways.

## TWO-WAY TRAFFIC TAPER

The two-way traffic taper is used to close off one lane of a two lane two-way roadway, usually under flagger control. The function is to resolve potential head on conflict, and a short taper between 50 and 100 feet long should be used.

## LIGHTING DEVICES — WARNING LIGHTS

Type A low-intensity flashing warning lights are intended to continually warning drivers that they are approaching or proceeding in a hazardous area and are most commonly mounted on barricades, drums, vertical panels, and advanced warning signs.

Type B high-intensity flashing warning lights are normally mounted on advance warning signs, high level warning devices, or independent supports. These lights are effective in daylight as well as at night.

Type C steady-burn lights are used to delineate the edge of the traveled way on tapers, thought work areas, on detour curves, and for other similar situations.

Warning lights are especially useful under adverse weather conditions and on curves and cross streets where headlights may not strike reflective materials.

Flashing lights are effective in attracting a driver’s attention, and therefore, provide an excellent means of identifying a hazard. Flashing lights, however, should never be used for delineation; rather steady burn lights shall be used on barriers, barricades, and other channelizing devices placed in a series for path delineation.

Warning lights shall have a minimum mounting height of 36 inches from the pavement elevation to the bottom of the lens.

## ARROW PANELS

Arrow panels are intended to supplement other warning devices. With their long-range visibility and dynamic action, they provide additional advance warning distance, command attention and present clear directional information.

On high-speed high volume multi-lane roadways, arrow panels should be used for all lane closures. They are also especially useful in mobile and moving operations, except that an indication showing direction shall never be displayed on a lane closure on a two-lane highway.

## WORK ZONE OPERATION FLAGGING

Since flaggers are responsible for motorist and worker safety, and make the greatest number of contacts with the public, it is essential that competent and responsible persons be selected. Each person assigned to this task shall be adequately trained. Training must be completed and certified by a program compliant with local jurisdiction having authority. Assigning untrained employees may be a violation of state law.

For daytime work, the flagger's vest, shirt, or jacket shall be orange, yellow, yellow-green, or a fluorescent version of these colors. For nighttime work, similar outside garments shall be retroreflective. The retroreflective clothing shall be designed to clearly identify the wearer as a person. Garments worn by flaggers shall conform to Part VI of the MUTCD.

Attachment 27 "Work Zone Procedures for Hand Signal Devices" illustrates the proper procedure for the use of work zone hand signal. More specific information on procedures and equipment can be found in the MUTCD 2000 Millennium Edition manual.

Flaggers shall use "Stop/Slow" paddles or signs. The use of hand signals alone is prohibited.

## AUTOMATED FLAGGER

Assistance Devices: Whenever possible, flaggers shall use devices that enable him or her to stand out of the lane of traffic when controlling road users through traffic control zones.

## WORK ZONE INSTALLATION AND REMOVAL

The design and use of all traffic control devices shall conform to Part VI of the MUTCD. Because workers may be in exposed positions while installing warning signs and channelizing devices, work zone traffic control devices must be installed in a well-planned, orderly and expeditious manner. Devices are normally installed in sequence moving downstream with traffic. They are then removed in the reverse order, except that a work vehicle shall not back up in an open lane. Thus, as the final step in the removal procedure, the advance warning signs located upstream of the closure area may be picked up in the direction of traffic.

Upon completion of the installation of modification of a work zone, a competent person should evaluate the effectiveness of the traffic control procedure both daytime and nighttime. A well-trained and knowledgeable person should always supervise installation, maintenance and removal of devices.

## WORK ZONE MAINTENANCE

Inspections shall be performed on a regular periodic basis to assure that traffic control devices are clearly visible and properly positioned. Zones left in place overnight should be inspected during the hours of darkness.

Work zone maintenance activities include servicing equipment, replacing batteries and bulbs in lights, cleaning reflective material and lenses, and repairing or replacing damaged or missing devices.

## WORK ZONE TRAFFIC SUPERVISOR

For each project, a well-trained and knowledgeable individual should be assigned the responsibility for traffic control. On construction projects, the contractor should designate a specific person who can be reached on a 24- hour basis for emergency service.

When the responsibility for maintenance and servicing of traffic controls is subcontracted, an employee of the traffic services company should be so named. Many agencies require that an American Traffic Safety Services Association “Certified Work Zone Traffic Supervisor” be assigned to each project. Such certification requires a prescribed level of training, experience and knowledge of work zone traffic control.

## RECORDKEEPING

Good recordkeeping procedures are important to insure that work is properly performed and to support this position in any subsequent disputes involving payment or liability. Records are needed regarding all office deliveries, work zone installations, modifications or removals and servicing and maintenance activities.

Information to be recorded includes: date, time, weather, location, personnel, equipment used, types and numbers of devices, components replaced, servicing and repair activities. All such appropriate dates should be entered in a neat and orderly manner in diaries, logbooks or forms.

*Section 9:*

# Dust Control

## PURPOSE

The purpose of dust control is to eliminate or control potential fugitive dust generated from construction activities.

Company employees shall remain compliant with the federal, state, county, city and local regulations pertaining to dust control for the state, county, or city applicable to their environment.

## DEFINITIONS

**Basic dust training:** training required for each superintendent or water truck driver on jobsites that are greater than one acre but less than five acres.

**Control measure:** the means by which a contractor will control fugitive dust and track out from areas that are accessible to the general public or outside the property line.

**Daily log:** a written description of the control measures taken on a daily basis. The daily log shall be updated as the work and control measures progress (e.g., *Water truck sprayed 2,000 gallons on northwest corner of jobsite at 6:30 a.m.*). Items such as weather (including wind and rain) shall be documented in the daily log.

**Dust control permit:** a permit issued by the county in which the work is being done. The permit must be issued prior to work commencing. A dust control permit is required on jobsites that are 1/10th of an acre and greater.

**Dust control plan:** a plan, approved by the county in which the work is being done, that details how the contractor will control fugitive dust and track-out.

**Fugitive dust:** the particulate matter, not collected by a capture system, that is entrained in the ambient air caused by human and/or natural activities such as, but not limited to, the movement of soil, vehicles, equipment, blasting, and wind.

**Wind event:** an occurence of the sixty-minute average wind speed exceeding 25 miles per hour, requiring control measures to be taken and all dust-generating operations stopped. A wind event and the control measures in place shall be documented in the daily log.

## POLICY

This policy fixes responsibility for the supervision and enforcement of a dust control system which includes work-site control methods and inspections as well as employee training.

## CONTROL MEASURES

The Company's primary fugitive dust control measure is water. A minimum soil moisture content of 12 percent or a visible crust on the soil shall be maintained on all open storage piles and areas accessible to the general public.

## TRACK-OUT

Track-out into any public roadway or parking lot with public accessibility shall be maintained, in accordance with federal, state, county, city and local regulations. Minimum track-out requirements are 30 feet wide, 3 inches deep, and 50 feet long or the length of the longest truck (whichever is greater). When width or length can not be achieved,

the track-out must cover the surface available.

## BULK MATERIAL-HANDLING

Any bulk material-hauling to and from Company worksites shall maintain the load at least three inches below the freeboard. The highest point of the load must not exceed the height of the bed walls and the load shall be tarped or covered. Any empty bulk material-handling equipment shall be thoroughly cleaned and/or tarped when traveling in areas accessible to the public.

## DOCUMENTATION

The competent person shall maintain a written daily log of the control measures implemented, weather conditions, and any emergency matters which arise during the work shift. The daily log shall be updated no later than the end of shift the same day.

*Section 10:*

# Electrical Safety

## PURPOSE

In accordance with Subpart K, Electrical of 29 CFR 1926, employees shall be protected from electrical hazards by implementing practical safeguards near employees involved in construction work. These safeguards include, but are not limited to, installation safety requirements, safety-related work practices, safety-related maintenance, environmental considerations, and the safety requirements for special equipment.

1. The competent person shall inspect electrical equipment and ensure it is free from recognized hazards that may cause death or serious harm to employees.

2. Only listed, labeled or certified equipment shall be installed and used in accordance with instructions included in the listing, labeling, or certification.

3. All electrical equipment installed shall meet the requirements set forth by the manufacturer, including, but not limited to, clearance space, mounting requirements, and markings.

4. Parts of electrical equipment which in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.

5. Employees of the Company shall use ground fault circuit interrupters to protect employees on construction sites.

6. Tools requiring electrical power, including employee-owned tools, will be inspected by the competent person daily before use. All tools found to be unsafe or needing repair will be removed from service immediately until appropriate repairs are made by qualified technicians.

7. Employees are required to read and follow all manufacturer-required instructions for use.

8. Employees are required to alert the competent person before they introduce a personally owned tool into the work environment. The competent person will decide if the tool meets the minimum requirements to be used in the Company worksite.

***Employees who have the authority to repair electrical equipment will be identified in writing by the president of the Company or his designated representative. As a general rule, employees do not have the authority to alter, change, or in any way modify electrical equipment. Any damage or required changes shall be reported to the competent person immediately.***

## FLEXIBLE CORDS AND CABLES

1. Flexible cords and cables shall be protected from damage. Sharp corners and projections shall be avoided. Flexible cords and cables may pass through doorways or other pinch points if protection is provided to avoid damage.

2. Extension cord sets used with portable electric tools and appliances shall be of three-wire type and designed for extra-hard usage. Cords marked type S, ST, SO, or STO are considered hard service cords and cords marked SJ, SJO, SJT, or SJTO are considered junior hard service cords in accordance with 29 CFR 1926.405.

3. Damaged cords or cables shall not be used. Conditions that qualify as “damage” include, but are not limited to, worn or frayed insulation, melted insulation, missing ground pin, or a damaged strain relief.

4. Extension cords may be hung above by use of tie-wraps. Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

5. Electrical cords shall be used in continuous lengths without splices or tap. Hard service flexible cords #12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath, and usage of the cord. Replacement of the cord or creation of two shorter cords by adding male/female cord ends in lieu of splicing damages may be a safer option.

6. The competent person will remove damaged cords and return them to the business office. Management will decide if repairs are appropriate or if the cord set has reached its maximum safe service life.

7. Extension cords shall not be run through conduit, chase, or other places that make regular inspections of the cord difficult.

## NFPA 70E

The National Fire Protection Association (NFPA) publishes NFPA 70E, Standard for Electrical Safety in the Workplace. This standard was developed at OSHA's request to be compatible with their requirements related to electrical worker safety and is incorporated in the Material Approved for Incorporation by Reference and revisions thereto.

The first edition of NFPA 70E was introduced in 1979 and was developed to address electrical safety requirements for employee workplaces during activities such as installation, operation, maintenance, demolition of electrical conductors, electric equipment, communications, and signaling conductors and equipment.

*OSHA requires electrical equipment to be de-energized before employees begin any work*. However, energized work is permitted if it has been determined that the task to be performed is not feasible in a de-energized state (e.g., voltage testing) or de-energizing introduces increased hazards. Working on energized circuits also has to be approved by an authorized person who accepts responsibility for such decisions. This is documented using an energized electrical work permit (hot work permit). You can find the authorization for this in 29 CFR Part 1910.333. (See Note 1 and Note 2.)

The Company does not recognize the designation of "mission critical" for the purpose of working on energized circuits. If the Company determines energized work will be required and meets the expectations of OSHA and NFPA 70 E, qualified subcontractors must provide a fully executed Energized Work Permit to include, but not be limited to, site specific JHA, emergency action plan, PPE analysis and selection, written task plan, and training verification for employees who will be engaged in the energized work process.

Note 1: Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, and removal of illumination for an area.

Note 2: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

NFPA 70E defines host and subcontractor relationships. The language is intended to define these relationships more directly as they relate to adhering to safety-related work practices. For clarification, a host employer may be a general contractor or a facility owner. The definition does not relieve either the subcontractor or the host from requesting information from the other. Each employer (contractor) must tell the other about any unique or specific hazards associated with the project.

For example, a host contractor or facility owner communicates a specific work request related to electrical improvements. They are required to stipulate that the work must be completed while circuits remain energized

because de-energizing the circuit would interfere with critical communications and other emergency operations at the facility. The qualified electrical contractor will have to demonstrate their familiarity with the hazards associated with working on energized circuits and have the certifications, training, and PPE required to complete the task safely. The host has communicated the necessity for the work, and the subcontractor, aware of the hazards, has accepted the assignment and will complete the work in accordance with safe work practices outlined in 29 CFR Part 1910 and 1926 and NFPA 70E.

NFPA 70E requires the employer to implement and document an overall electrical safety program that directs appropriate activity for the voltage, energy level, and circuit conditions. The hot work permit will be completed and available for review upon request.

*Section 11:*

# Ergonomics

## BACK SAFETY

Back safety awareness is necessary due to the prevalence and severity of back injuries throughout the construction industry. Sprains and strains are the most common causes of lower back pain. Improper lifting, falling, auto incidents, and sports activities can cause back injuries, but of these, lifting improperly is the single largest cause of back pain and injury. Instituting proper lifting techniques and other safety measures will significantly reduce the Company's rate of back injury incidents.

Problems with the lower back are a frequent cause of lost work time and workers' compensation claims. By establishing this written ergonomic safety plan, we create an awareness of the hazard among our employees. Standardizing lifting techniques and specifying alternative material-handling measures when lifting or moving materials by hand will reduce the potential for injury and the Company's back injury incident rate.

## PURPOSE

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

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

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

## AFFECTED EMPLOYEES/AREAS

All employees have job-related duties requiring lifting or some sort of materials handling. All employees are to be trained on and follow the rules of this ergonomic safety plan.

## SAFE LIFTING TECHNIQUES

The following points outline good lifting practices, procedures, and safe lifting techniques. These techniques, when taught to employees, will minimize the risk of back injury and pain. Despite the level of mechanization available today, manual lifting remains an important function; thus, attention must be directed toward safe lifting practices. The basics of proper lifting procedure include the following:

1. Size up the load before lifting. Test by lifting one of the corners or pushing the load. If it feels heavy, awkward, or imbalanced, use a mechanical aid or solicit help from another individual. Do not attempt to lift or move any load heavier than can be safely handled and controlled. At no time shall an employee lift more than 75 pounds by themselves. When in doubt, do not lift alone!

2. BEND AT THE KNEES. It is the single most important aspect of lifting.

3. When performing the lift:
   - › Place feet shoulder-width apart and close to the object. This will facilitate centering the body over the load.
   - › Get a good handhold on the object.

› Lift straight up, smoothly, and let the legs — *not the back* — do the work.

› Avoid overreaching or stretching to pick up or set down a load.

4. Do not twist or turn the body after making the lift.

5. Clear the path before beginning to carry the load.

6. Set the load down properly.

7. Always push. Do not pull the object whenever possible.

8. Change the lifting situation, if possible, to minimize a lifting hazard:

   › If it is an awkward load, find someone to help lift it.

   › In order to achieve a manageable lifting weight, split the load into several smaller ones whenever possible.

   › Avoid lifting from below the knees or above the shoulders when items exceed physical lifting range. Instead, use mechanical aids, position the body so that the object to be moved remains within an acceptable lifting range (between the shoulders and knees), and/or solicit help from coworkers.

## ALTERNATIVE MATERIALS-HANDLING TECHNIQUES

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

1. Hoists
2. Powered industrial trucks
3. Dollies
4. Carts
5. Other mechanical devices or construction equipment available and appropriate for the lift in question

## OTHER SAFE WORK TECHNIQUES

Back pain and injury can occur as a result of other work issues beyond lifting. Avoiding the following issues and improving related work techniques will help lessen the chance of back pain and injury:

1. **Catching objects and working low:** When catching falling or tossed objects, the feet should be firmly planted, back straight, and knees slightly bent. The legs — not back — should absorb the impact. When working on an object that is low to the ground, bend the knees. Keep the back as straight as possible; bending from the waist can lead to back pain. If it is necessary to use the back, keep knees bent and back flat. In both situations, frequent rest breaks are necessary to avoid back fatigue.

2. **Extended sitting/standing:** Certain jobs require long hours of standing or sitting. These conditions can create back trouble. Get up and stretch frequently if required to sit for long periods. If standing, ease the strain on the lower back by changing foot positions often, placing one foot on a rail or ledge. However, keep body weight evenly balanced when standing and don't lean to one side.

3. **Other Material-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 material-handling techniques listed in this ergonomic safety plan.

4. **Housekeeping:** Poor housekeeping, such as slippery floors or ground, crowded work conditions, and tools or extension cords on the working surface can create slip, trip, or fall hazards that can result in back injuries.

5. **Poor Posture at Work:** Be aware of proper posture when sitting, standing, or reclining. When sitting, the knees should be slightly higher than the hips, and the shoulders and upper back should be straight.

6. **Poor lighting:** Poor lighting in the work area can lead to poor work practices that may result in a variety of injuries. Always ensure lighting is adequate for the task at hand, replace burnt out bulbs, and point out hazardous areas to the immediate supervisor. The work area should be adequately lit to perform the work; if it is not, identify deficiencies to the competent person.

## OTHER BACK SAFETY ISSUES

Factors unrelated to work can affect back safety, such as physical condition, posture, athletic activity, home-improvement projects, and stress, described in detail below:

1. **Posture:** Whether the body is standing, sitting, or reclining, posture affects the amount of strain put on the back. The wrong posture increases strain on the back muscles and may bend the spine into positions that cause discomfort and deformity. When standing correctly, the spine has a natural “S” curve. The shoulders make up the upper-back part of the “S,” while the lower curve of the “S” aligns with the pelvis. Good sitting posture should put the knees slightly higher than the hips. The hips should be to the rear of the chair with the lower back not overly arched. Also, the shoulders and upper back should not be rounded.

2. **Poor physical condition:** Your physical condition can lead to back pain. Carrying extra body weight (especially a potbelly) results in extra strain on the spine. It is estimated that every pound gained up front adds 10 pounds of strain on the back. When the body is out of shape, the likelihood of chronic back pain is increased. Lack of exercise plays a major role too, as a sudden strain on generally unused back muscles can lead to severe back pain, particularly when there is a sudden twisting or turning of the back. The Company employees are encouraged to partake in a balanced diet and exercise to help avoid back problems.

3. **Stress:** Stress is another factor that may lead to back pain. In conjunction with general physical condition, stress from work or one’s personal life can cause muscle spasms that affect the spinal nerve network. While a certain amount of stress is normal for everyone, excessive stress can lead to backaches. The solution is a balanced lifestyle that includes time to relax.

4. **Repetitive Trauma:** People often think back injuries result from lifting heavy or awkward objects. Many back injuries, however, do not happen after one single lift but rather as a result of an accumulation of relatively minor strains over time. Back injuries, as with cumulative trauma disorders (CTD), may arise from repeated injuries (although the repetition of low-grade strains usually does not cause CTD’s). As the worker repeats a particular irritating movement, the minor injuries begin to accumulate and weaken affected muscles or ligaments, leading to the gradual development of a more serious injury. Thus, a specific weight-lifting incident may actually have little to do with any single injury. When lifting equipment/materials, always remember to use mechanical aids when appropriate along with good lifting techniques. Use careful forethought and caution when lifting to ensure safety.

**Alcohol and caffeine will promote dehydration, which is a leading cause of muscle strains and sprains. Light stretching exercises prior to each day’s work are recommended for all employees.**

*Section 12:*

# Excavations

***See Attachment 10 "Excavation Checklist," Attachment 11 "Excavation Daily Inspection," and Attachment 23 "Trenching and Excavation by the Numbers"***

***This excavation plan is designed to meet the requirements set forth in 29 CFR 1926.650 through 1926.652, Subpart P Excavations.***

Excavations and trenches present numerous hazards that employees must be trained to recognize. These hazards include, but are not limited to, underground utilities, trench wall collapse, and hazardous air.

## PURPOSE

The Company is dedicated to the protection of its employees from on-the-job injuries. In accordance with 29 U.S.C. 654(b) of the OSH Act of 1970, "each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct." The purpose of this Company excavation plan is to accomplish the following:

1. Supplement the Company's standard safety policy by providing safety standards specifically designed to cover excavations.
2. To confirm each employee is trained and aware of the safety provisions regarding excavations, to be implemented prior to the start of any work involving excavations.

This plan is based on the regulations found in 29 CFR 1926, Subpart P. These regulations focus on such items as locating underground utilities, providing proper access and egress, and trench protection. This plan is designed to assist employees in the recognition of hazards and to establish procedures for preventing excavation incidents from occurring. Each employee will be trained in these procedures and shall strictly adhere to them except when doing so would expose the employee to a greater hazard. If it is determined that implementation of any portion of this excavation safety plan will create a greater hazard to employees, management shall be contacted prior to completing any work. The Company or its designated representative will make the determination on how to safely complete the work.

## APPLICATION

This plan applies to and will be followed by all Company employees and subcontractors of the Company at all company workplaces.

It is the responsibility of the Company to implement this excavation safety plan. The competent person is responsible for daily safety checks and continual observation of all work and the enforcement of all safety policies and procedures. The competent person is also responsible for correcting any unsafe acts or conditions immediately. It is the responsibility of each employee to understand and adhere to the procedures of this plan and to follow the instructions of the competent person. 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.

## DEFINITIONS

In accordance with 29 CFR 1926.650(b), an excavation is any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal. A trench is a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less (measured at the bottom of the excavation), the excavation is also considered a trench.

In accordance with 29 CFR 1926.650(a), excavations are defined to include trenches.

## SPECIFIC EXCAVATION REQUIREMENTS

This specific excavation requirements plan is designed to meet the requirements set forth in 29 CFR 1926.651. All surface encumbrances identified as causing a hazard to employees shall be removed or supported, as necessary, to safeguard employees in accordance with 29 CFR 1926.651(a). In accordance with 29 CFR 1926.651(b), the estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that are to be encountered during excavation work, shall be determined prior to excavating. If the Company requests offset markings, the request shall include that the offset marks are within 25 feet of the actual utility.

Utility companies or owners shall be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility's underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours (unless a longer period is required by state or local law; this period is typically two working days) or establish the exact location of these installations, the employer may proceed with caution. In this case, detection equipment or other acceptable means to locate utility installations must be used. The time frame established for utilities or owners to respond to a utility locate request are set forth in 29 CFR 1926.651(b) (2).

In accordance with 29 CFR 1926.651(b)(3), when excavation operations approach the location of marked underground utility installations, the exact location of the installations shall be determined by safe and acceptable means. The Company requires the use of potholing to locate the exact location of the underground utility.

While the excavation is open, underground installations shall be protected, supported, or removed as necessary to safeguard employees as set forth in 29 CFR 1926.651(b)(4).

## POTHOLING PROCEDURES

- Hand-excavate a minimum width of 2 feet on both sides of utility installation markings to a depth of 2 feet minimum below existing ground.
- Excavate with machine in hand-dug ditch to a maximum depth of 1.5 feet below existing ground.
- Repeat the above steps excavating to the same minimum distance beyond the utility installation markings to a depth of 4 feet minimum below existing ground.
- Excavate with machine in hand-dug ditch to a maximum depth of 3.5 feet below existing ground.
- Continue excavating as detailed above until the utility is located. At depths of 5 feet and below, it shall be necessary to provide trench protection in accordance with 29 CFR 1926 Subpart P.

## ACCESS AND EGRESS

The following access and egress policy is designed to meet the requirements set forth in 29 CFR 1926.651(c) (1).

### *Structural ramps*

A competent person shall design structural ramps that are used solely by employees as a means of access or egress from excavations. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design and constructed in accordance with the design. Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent displacement.

Structural members used for ramps and runways shall be of uniform thickness.

Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.

Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

**Means of egress from trench excavations:** A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for employees.

## EXPOSURE TO VEHICULAR TRAFFIC

In accordance with 29 CFR 1926.651(d), employees exposed to vehicular traffic shall be provided and wear; warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.

## EXPOSURE TO FALLING LOADS

In accordance with 29 CFR 1926.651(e), no employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with 29 CFR 1926.601(b)(6), to provide adequate protection for the operator during loading and unloading operations.

## WARNING SYSTEM FOR MOBILE EQUIPMENT

In accordance with 29 CFR 1926.651(f), when mobile equipment is operated adjacent to an excavation or required to approach the edge of an excavation and the operator does not have a clear and direct view of the edge of the excavation, a warning system — such as barricades, hand or mechanical signals, or stop legs — shall be utilized. If possible, the grade should be away from the excavation.

## HAZARDOUS ATMOSPHERES

In accordance with 29 CFR 1926.651(g) (1), to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements shall apply:

- Where oxygen deficiency (atmospheres containing less than 19.5 perc oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet in depth.

- Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation.

- Adequate precautions — such as providing ventilation — shall be taken to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of the gas.

- When controls used are intended to reduce the level of atmospheric contaminants to acceptable levels, testing

shall be conducted as often as necessary to ensure that the atmosphere remains safe.

## EMERGENCY RESCUE EQUIPMENT

In accordance with 29 CFR 1926.651(g)(2)(i), emergency rescue equipment, such as a breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation.

Employees entering bell-bottom pier holes or other similar deep and confined footing excavations shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.

## PROTECTION FROM HAZARDS ASSOCIATED WITH WATER ACCUMULATION

In accordance with 29 CFR 1926.651(h), employees shall not work in excavations in which there is accumulated water or water is accumulating unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

If water is controlled or prevented from accumulating by the use of water removal equipment, a competent person shall monitor and ensure proper operation of the water removal equipment.

If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person.

## STABILITY OF ADJACENT STRUCTURES

In accordance with 29 CFR 1926.651(i), where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of employees.

Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted except under the following circumstances:

1. A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure.
2. The excavation is in stable rock.
3. A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity.
4. A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.
5. Sidewalks, pavements, and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

## PROTECTION OF EMPLOYEES FROM LOOSE ROCK OR SOIL

In accordance with 29 CFR 1926.651(j)(1), the Company shall provide adequate protection to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided either by placing and keeping such materials or equipment at least two feet (.61 m) from the edge of excavations, 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.

## INSPECTIONS

In accordance with 29 CFR 1926.651(k)(1), daily inspections of excavations, the adjacent areas, and protective systems shall be performed by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

The competent person shall determine what type of soil they are working with during the inspection. The type of soil will determine what type, if any, of trench protection is required. The classification of the soil shall be made based on the results of at least one visual and at least one manual analysis in accordance with Appendix A to Subpart P of 29 CFR 1926. The soil will be classified as solid rock, Type A, Type B or Type C. Such analyses shall be conducted by a competent person using tests described below or other recognized methods of soil classification and testing such as those adopted by the American Society for Testing Materials or the U.S. Department of Agriculture textural classification system.

**Visual and manual analyses:** The visual and manual analyses shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to properly identify the properties, factors, and conditions affecting the classification of the deposits.

**Layered systems:** In a layered system, the system shall be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.

**Reclassification:** If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

**Acceptable visual and manual tests:** Visual analysis, as outlined below, is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.

1. Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of fine-grained

material is cohesive. Soil composed primarily of coarse-grained sand or gravel is granular.

2. Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.

3. Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.

4. Observe the area adjacent to the excavation and the excavation itself for evidence of existing utilities and other underground structures and to identify previously disturbed soil.

5. Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.

6. Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.

7. Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

Manual analysis of soil samples, as outlined below, is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

1. Plasticity: Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8 inch in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a two-inch (50 mm) length of 1/8-inch thread can be held on one end without tearing, the soil is cohesive.

2. Dry strength: If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand, or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.

3. Thumb penetration: The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials [ASTM] Standard designation D2488 - “Standard Recommended Practice for Description of Soils [Visual / Manual Procedure].”) Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.

4. Other strength tests: Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand-operated shear vane.

5. Drying test: The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick (2.54 cm) and six inches (15.24 cm) in diameter until it is thoroughly dry:

    a. If the sample develops cracks as it dries, significant fissures are indicated.

    b. Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break

a sample, the soil has significant cohesive material content. The soil can be classified as an unfissured cohesive material and the unconfined compressive strength should be determined.

c. If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular.

## FALL PROTECTION

In accordance with 29 CFR 1926.651(l), walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails will comply with the requirements set forth in the "Fall Protection" section of this compliance plan and be provided where walkways are 6 feet or more above lower levels. OSHA standard interpretation identifies trenches with a top width greater than 30 inches and 6 feet deep as required to have a walkway with guardrails, less than 30 inches is de minimis and not required.

## PROTECTION OF EMPLOYEES IN EXCAVATIONS

The following policy on protection of employees in excavations is designed to meet the requirements set forth in 29 CFR 1926.652.

Each employee in an excavation shall be protected from cave-ins by an adequate protective system except under the following circumstances:

- Excavations are made entirely in stable rock
- Excavations are less than five feet (1.52 m) in depth and examination of the ground by a competent person provides no indication of a potential cave-in.

Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

## SLOPING AND BENCHING

Sloping and benching systems will be in accordance with 29 CFR 1926.652 Subpart P, Appendix B. The maximum allowable slopes permitted are based on the soil type the excavation is in.

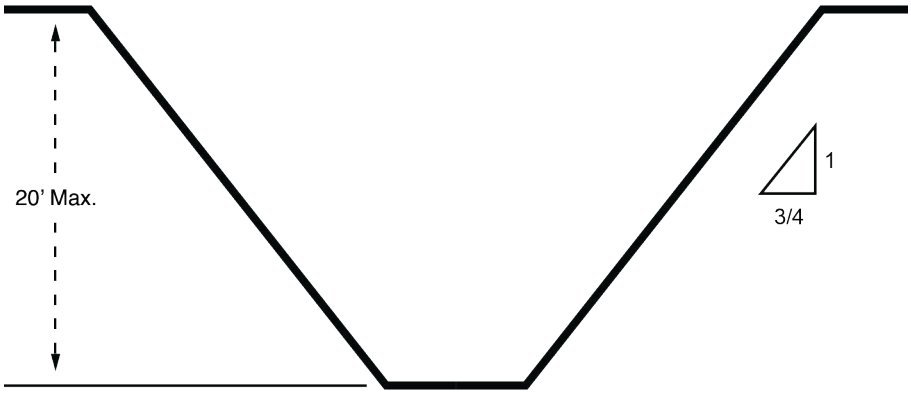
| SOIL TYPE | MAXIMUM ALLOWABLE SLOPE |
|---|---|
| stable rock | vertical walls |
| Type A | ¾:1 (feet in slope to rise) |
| Type B | 1:1 |
| Type C | 1.5:1 |

Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer. Benching is not permitted in Type C soil.

## *Excavation Examples*

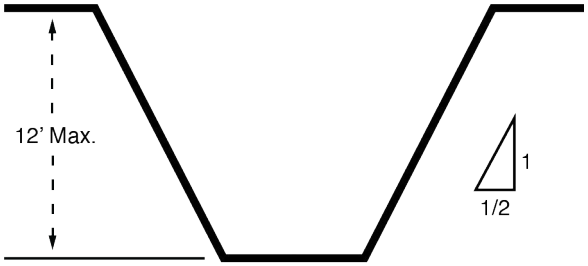
### EXCAVATIONS MADE IN TYPE A SOIL

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



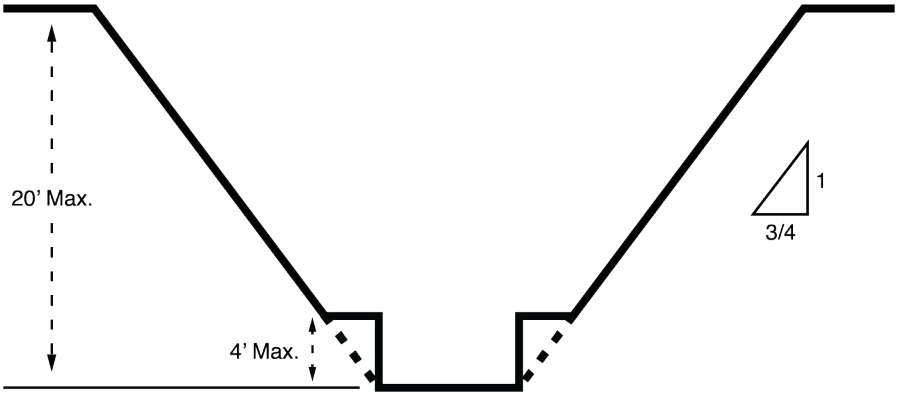

*Simple slope—general*

*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 ½ : 1.*

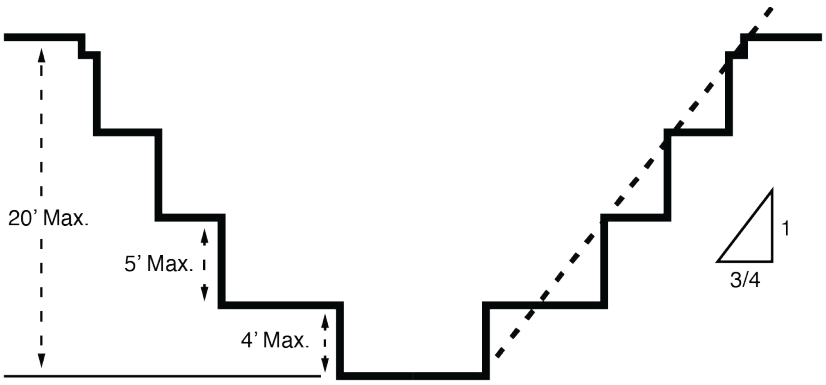



*Simple slope—short term*

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:

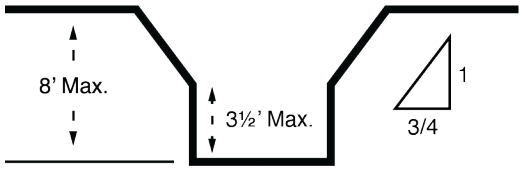



*Simple bench*



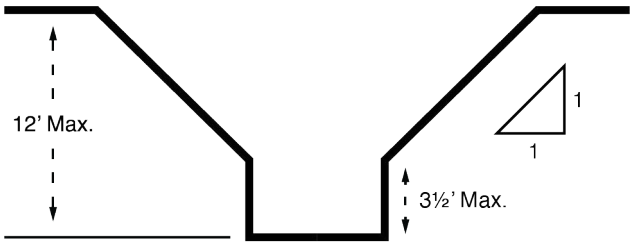

*Multiple bench*

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.



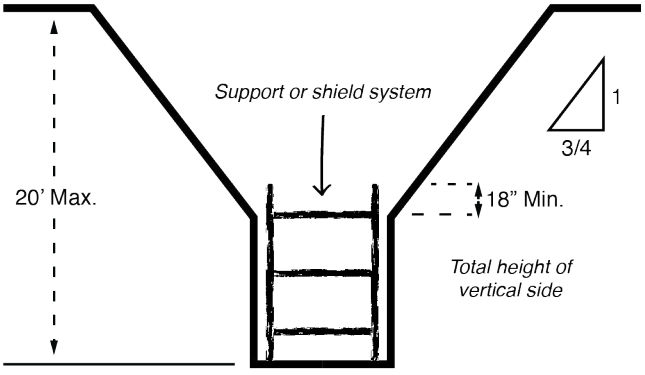

*Unsupported vertically sided lower portion—maximum 8 feet in depth*

All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.




*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 ¾ : 1. The support or shield system must extend at least 18 inches above the top of the vertical side.

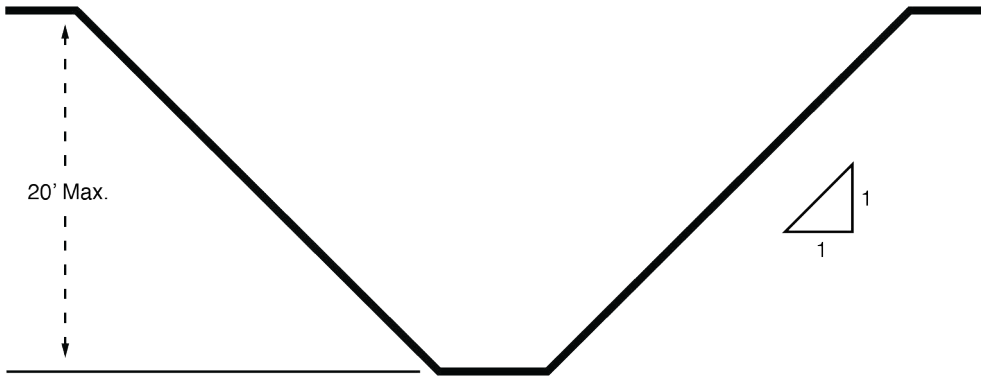



*Supported or shielded vertically sided lower portion*

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).

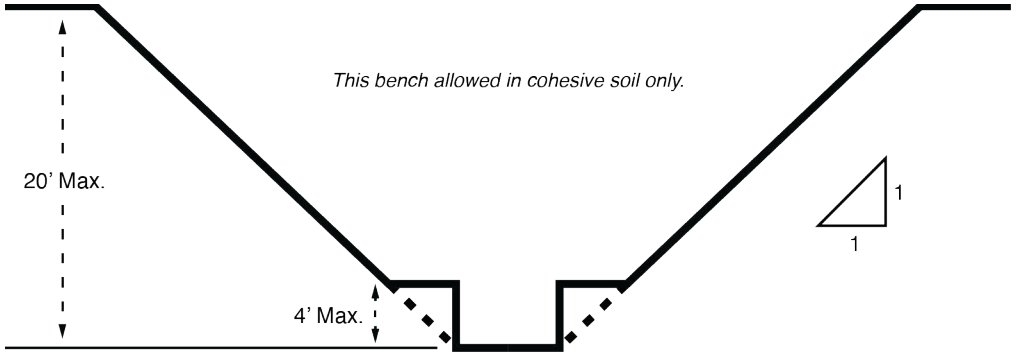
**EXCAVATIONS MADE IN TYPE B SOIL**

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

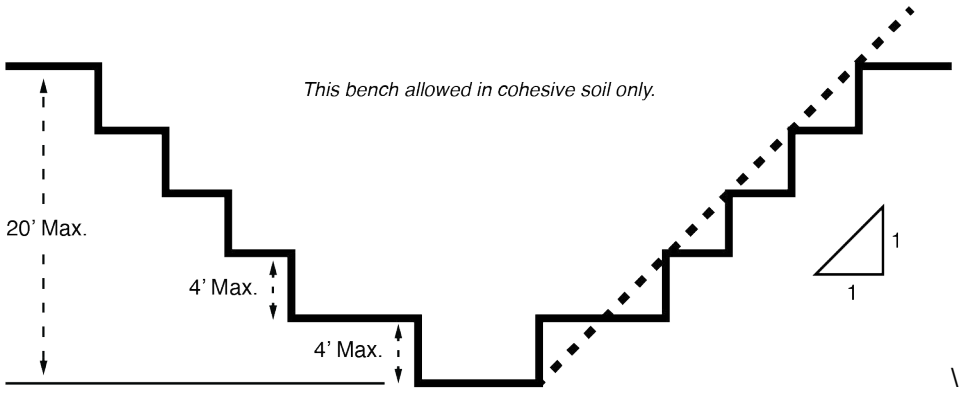



*Simple Slope*

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:

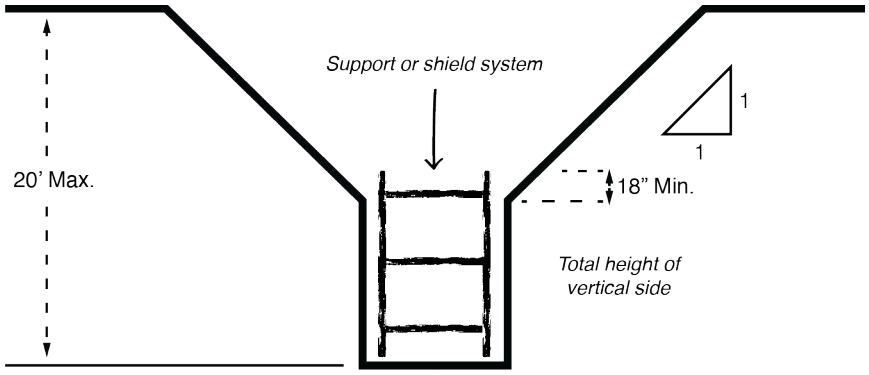



*Single bench*




*Multiple bench*

3. 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.

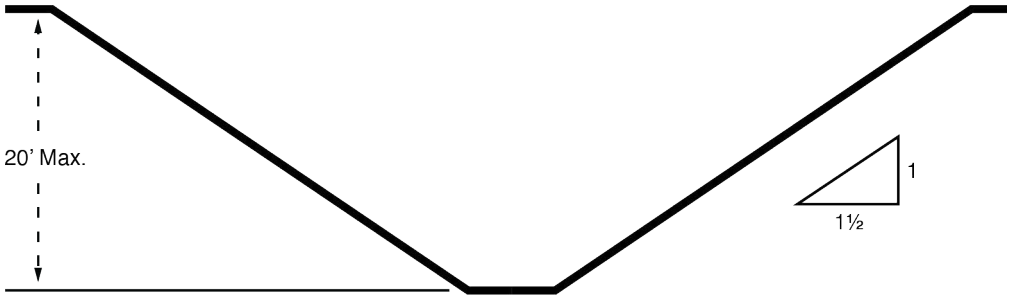



*Vertically-sided lower portion*

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

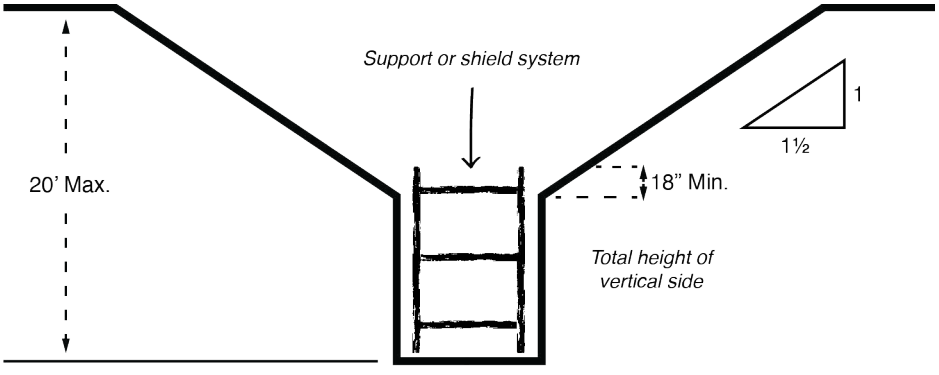
**EXCAVATIONS MADE IN TYPE C SOIL**

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½ : 1.




*Simple slope*

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 1½ : 1.




*Vertically sided lower portion*

## PROTECTIVE SYSTEMS

In accordance with 29 CFR 1926.652(c) designs of support system shields and other protective systems shall be selected and constructed by the Company or the Company's authorized agent. The protective system shall be used in accordance with the manufacturer's recommendation and the manufacturers tabulated data.

## MATERIALS AND EQUIPMENT

In accordance with 29 CFR 1926.652(d), materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.

A registered professional engineer shall design material and equipment used for protective systems for excavations greater than 20 feet deep.

Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer and will prevent employee exposure to hazards.

When material or equipment used for protective systems is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use. If the competent person cannot ensure the material or equipment is able to support the intended loads or otherwise suitable for safe use, then such material or equipment shall be removed from service, evaluated, and approved by a registered professional engineer before being returned to service.

## INSTALLATION AND REMOVAL OF SUPPORT

In accordance with 29 CFR 1926.652(e) (1), members of support systems shall be securely connected together to prevent sliding, falling, kick-outs, or other predictable failure.

Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or being struck by members of the support system.

Individual members of support systems shall not be subjected to loads exceeding that which they are designed to withstand.

Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.

Removal shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.

Backfilling shall progress together with the removal of support systems from excavations.

## ADDITIONAL REQUIREMENTS FOR SUPPORT SYSTEMS FOR TRENCH EXCAVATIONS

In accordance with 29 CFR 1926.652(e) (2), excavation of material to a level no greater than 2 feet (.61 m) below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

Installation of a support system shall be closely coordinated with the excavation of trenches.

Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.

## SHIELD SYSTEMS

The following shield systems policy has been designed to meet the requirements set forth in 29 CFR 1926.652(g).

- Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand.
- Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.
- Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.
- Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.
- Excavations of earth material to a level not greater than two feet (.61 m) below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

## TRAINING PROGRAM

In meeting the training requirements set forth in 29 CFR 1926.21(b) (2), the Company shall have each employee trained in the recognition and avoidance of unsafe conditions and the regulations applicable to excavations and trenches. Employees shall also be trained on how to control or eliminate any recognizable hazards or other exposure to illness or injury associated with excavations and trenches.

Under no circumstances shall an employee be allowed to work on or in excavations or trenches until he/she has successfully completed this Company's training program.

The training program shall include classroom instruction and operational training on the recognition and avoidance of unsafe conditions, unsafe acts, and the regulations applicable to their work environment for any recognizable excavation or trench hazard the employee may encounter on the job. The training program will be supervised by the Company and conducted by a competent person or Company-designated representative qualified in the subject matter.

The competent person will identify all current and new employees who require training and schedule instruction and training for those requiring such training. Training on the above components will occur both in the classroom and at the workplace, as appropriate. Classroom training will cover written policy/procedures on excavations and trenches and include a training presentation on the subject. Workplace instruction will include demonstration of and practice in excavation and trenching safety as it relates to the workplace.

Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of excavations and trenches and the procedures required to minimize the hazards. Employees will be removed from the work environment until they can demonstrate the ability to work safely.

## ENFORCEMENT

Constant awareness of and respect for excavation and trench hazards and compliance with all safety rules are considered conditions of every employee's continued employment with the Company. All supervisory and management personnel reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

## CHANGES TO THE PLAN

The Company will approve any changes to the Plan and shall review this plan annually to determine if additional practices, procedures, or training needs to be implemented. Employees will be notified and retrained, if necessary, in all new procedures and practices.

*Section 13:*

# Fall Protection

***This fall protection plan is designed to meet the requirements set forth in 29 CFR 1926.500, Subpart M – Fall Protection.***

Fall protection is a term used to define any means used to protect workers from falls during work in areas where fall hazards exist. Such areas include leading edges, holes, low- and high-sloped roofs, etc.

In such areas, engineering or design measures are most frequently used to reduce the fall hazards. Where engineering or design measures do not provide sufficient fall protection, the Company will take additional measures, such as the use of guardrails or personal fall arrest systems, to reduce the hazards associated with working at elevated heights.

The effectiveness of a written fall protection plan is dependent on the active support and involvement of all employees. It is intended to assist the employee in implementing a set of procedures to ensure that all work requiring fall protection is carried out safely, therefore minimizing the possibility of injury or harm to the elevated employee and surrounding employees.

The new policy presumes conventional fall protection methods are feasible and do not create a greater hazard. As such, contractors must ensure employees working six feet or more above lower levels use guardrails, safety nets, or personal fall arrest systems. A personal fall arrest system may consist of a full body harness, deceleration device, lanyard, and anchor point. Employers may also consider using other work methods such as having employees work from ladders or aerial lifts. If an employer believes such methods are infeasible for a particular task, then the employer is required to demonstrate the reasons why these methods are infeasible and implement an alternative fall protection program in accordance with 29 CFR 1926.502(k).

“Infeasible” means it is impossible to perform the work using a conventional fall protection system (e.g., guardrail system, safety net system, or personal fall arrest system) or technologically impossible to use any one of these systems to provide fall protection.

Additionally, the use of an effective fall restraint system in lieu of a personal fall arrest system is allowed. To be effective, a fall restraint system must be rigged such that it will prevent a worker from reaching a fall hazard and falling over the edge. A fall restraint system may consist of a full body harness connected to an anchor point by a lanyard of a length that will not allow a worker to physically reach the edge of the surface or other fall hazard.

All fall protection plans must be in writing and site-specific. However, a written plan developed for repeated use for a specific and repetitive construction process will be considered site-specific. The fall protection plan must be available at the worksite. If an alternative method is selected, the written plan must specify the reasons why conventional fall protection methods are infeasible or create a greater hazard.

***Employees must not perform any task at a level of six feet or more above a lower level until the appropriate fall protection systems have been implemented.*** Failure to follow this simple Company policy will lead to disciplinary action up to and including termination of employment.

## PURPOSE

The Company is dedicated to the protection of its employees from on-the-job injuries. In accordance with 29 U.S.C. 654(b) of the OSH Act of 1970, “each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.” The

purpose of this plan is to acheive the following:

1. Supplement the Company's standard safety policy by providing safety standards specifically designed to cover fall protection on each job.

2. Ensure each employee is trained and made aware of the safety provisions, which are to be implemented prior to the start of any work.

This plan is designed to assist employees in the recognition of fall hazards and to establish procedures to prevent falls to lower levels or through holes and openings in walkways/working surfaces. Each employee will be trained in these procedures and shall strictly adhere to them except when doing so would expose the employee to a greater hazard. If an employee determines that implementation of a fall protection system will create a greater hazard, the employee shall contact management prior to completing any work. The Company or its designated representative will make the determination on how to safely complete the work.

Safety policies and procedures on any one project cannot be administered, implemented, monitored and enforced by any one individual. A safe, incident-free work environment can only be accomplished with the involvement of every employee on the project, from the highest position in the Company to the lowest. Each employee should understand and remember the following:

1. Their value to the company

2. Their importance to their family and/or loved ones

3. Cost of incidents (monetary, physical, and emotional)

4. Objective of the safety policy and procedures

5. OSHA standards applicable to them and the Company

6. Their individual role in implementing and monitoring overall compliance of the safety policy and procedures

This allows for a more personal (rather than strictly enforced) approach to compliance through planning, training, understanding and cooperative effort. However, if for any reason an unsafe act persists, strict disciplinary measures will be implemented.

It is the responsibility of the Company to implement this fall protection plan. The competent person is responsible for continual observational safety checks of all work and the enforcement of all safety policies and procedures. The competent person is also 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 competent person. 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. The president of the Company must approve any changes to this fall protection plan.

## WORKPLACE ASSESSMENT AND FALL PROTECTIONS SYSTEM SELECTION

Each competent person must assess the workplace to determine if the surfaces on which employees walk/work have the strength and structural integrity to safely support the intended load of employees, their equipment, and all materials for the intended work. Once the competent person determines the surface is safe, he or she must choose the fall protection system to be implemented. The competent person must make all reasonable efforts to anticipate the hazards to which employees may be exposed in the course of the job. Their assessment should include the following:

1. Inspecting the area to determine recognizable hazards or potential hazards that may arise while working in the

area.

2. Selecting appropriate protection measures and equipment. This information must be communicated to all affected employees who will engage in work-related activities. The competent person must ensure every employee has been trained and understands the fall protection system to be implemented.

3. Methods will be implemented to ensure walking/working surfaces are kept clean and, as much as possible, dry. Where wet processes are required, drainage shall be inspected and approved by the competent person. False floors, platforms, mats, or other dry standing places should be provided when practicable.

The competent person is designated by the Company for each jobsite. A portion of the competent person's duties includes the following:

1. Determine the anchorage points for personal fall protection systems.

2. Give specific and appropriate instructions to each employee on the systems and procedures to be used.

3. Ensure that employees follow procedures given and that they continuously demonstrate comprehension throughout the entire work process.

4. Remove employees who fail to demonstrate the ability to work safely in the work environment.

Where leading edge work is involved or conventional fall protection (e.g., guardrails systems or personal fall arrest systems) either is infeasible or creates a greater hazard in a project, the competent person will document the condition and submit a written plan for alternative fall protection (e.g., warning lines, monitoring systems, controlled access zones) to be implemented. Subpart M of 29 CFR 1926 provides the alternative fall protection methods that may be implemented if the competent person deems the use of traditional fall protection methods infeasible or more hazardous to employees.

## TRAINING PROGRAM

Under no circumstances shall an employee be allowed to work in an area where they might be exposed to fall hazards, perform 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 program shall include classroom instruction and operational training on the recognition and avoidance of unsafe conditions, unsafe acts, and the regulations applicable to their work environment for any recognizable fall hazard the employee may encounter on the job. The training program will be supervised by the Company and conducted by a competent person or Company-designated representative qualified in the following areas:

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 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 method is used

6. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection

7. The role of all employees in fall protection plans

The competent person will identify all current and new employees who require training and schedule this training. Training on the above components will occur both in the classroom and at the workplace, as appropriate. Classroom training will cover written policy/procedures on fall protection and include a training presentation on the subject. Workplace instruction will include demonstration of and practice in wearing fall protection equipment and any instruction necessary for a specific workplace.

A written certificate of training is required which must include the following:

- The name or other identity of the employee trained

- The date(s) of training

- The signature of the competent person or Company-designated representative who conducted the training and/or the signature of the employee.

Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of falling and the procedures to be followed in order to minimize fall hazards. Employees will be removed from the work environment until they can demonstrate the ability to work safely.

## ENFORCEMENT

Constant awareness of and respect for fall hazards and compliance with all safety rules are considered conditions of employment. All supervisory and management personnel reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

## INCIDENT INVESTIGATION

All incidents (regardless of their nature) resulting in injury to workers shall be investigated and reported. It is an integral part of any safety program to investigate, document, and educate all employees to prevent re-occurrence of incidents.

In the event that an employee falls or 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 falls or incidents from occurring.

## CHANGES TO THE PLAN

The Company will approve any changes to the plan and shall review this plan annually to determine if additional practices, procedures, or training needs to be implemented in order to improve or provide additional fall protection. Workers shall be notified and trained, if necessary, in all new procedures and practices.

## FALL PROTECTION/FALL ARREST

All employees are required to be protected from falls whenever work is being completed at heights of six feet or greater measured from the bottom sole of the foot to the walking/working surface unto which an employee could fall.

The six-foot rule, at minimum, applies to the following conditions:

1. Walking and working surfaces
2. Unprotected sides and edges
3. Hoist areas
4. Holes
5. Formwork and reinforcing steel
6. Ramps, runways, and other walkways
7. Excavations
8. Precast concrete erection
9. Wall openings
10. Elevator shafts
11. Any additional circumstances that may be deemed necessary by the Company

## GUARDRAILS

Guardrails shall be constructed in accordance with 29CFR 1926.502(b). Top rails shall be 42 inches in height, plus or minus three inches, and shall withstand an outward and downward force of at least 200 pounds. Midrails shall be placed approximately halfway in between the walking surface and the top rail (approximately 20 inches) and shall withstand an outward and downward force of at least 150 pounds.

## PERSONAL FALL ARREST SYSTEMS

Personal fall arrest systems are designed to control the fall of an employee and to minimize injury once a worker has fallen. Fall arrest systems consist of the following components:

1. Full-body harness (body wear)
2. Connecting device (shock absorbing lanyard, yoyo, etc.)
3. Tie-off point (anchorage)
4. Training

Safety harnesses are the only acceptable means of personal fall arrest systems permitted for any Company employee. Body belts, safety seats, life lines, etc. are not acceptable and will not be used by Company employees.

The specific requirements for personal fall arrests systems are as follows:

1. All required fall protection equipment will be provided by the Company. It is the employees' responsibility to maintain the equipment and utilize it in accordance with the regulatory standards, manufacturer's requirements, and Company directives.

2. All lanyards must be equipped with locking snap hooks.

3. Appropriate shock absorbing lanyards will be used for fall protection when they do not create a greater hazard due to the length of the potential fall.

4. Lanyards will be removed from service when evidence of wear is detected or if the lanyard has had a load applied.

5. The anchorage (tie-off point) determined by the competent person must be capable of withstanding a minimum of 5,000 lbs., or a safety factor of two, per worker tied off. Fall arrest systems must limit the amount of force on the body to 1800 lbs.

6. When practical, anchorage tie-off points should be positioned above the worker's head.

7. Anchorage must be high enough that the worker will not strike any lower level should a fall occur.

8. All fall protection equipment shall be inspected daily to ensure it is in proper working order and documentation forwarded to the competent person.

9. Fall arrest devices shall be designated by the manufacturer as correct for the anchor location (foot level, above the shoulder, leading edge, etc).

## HOLES AND OPENINGS

Each employee on a walking/working surface more than six feet above lower levels shall be protected from falling through holes, including skylights, vents, air conditioning curbs, etc. In accordance with 29 CFR 926.500(b), a hole is considered a gap or void two inches or more in its shortest dimension in a floor, roof, or other walking/working surface. An opening means a gap or void in a vertical surface through which an employee could fall. All openings 30 inches or more in height and 18 inches or more in width must be protected to prevent employees from fall-through to lower levels.

Employees shall use the proper fall protection system when dealing with a hole and/or opening. Holes can be covered in accordance with the following provisions:

1. Covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

2. Covers shall be secured to prevent unintended displacement.

3. All covers shall be color-coded or marked with the word "HOLE" or "COVER" to provide the appropriate warning to employees.

4. Openings will be protected by guardrail systems of which the top rail and mid-rail meet the design strength and security requirements. Guardrails around openings shall be equipped with a swing gate or offset so a person cannot walk directly into an opening.

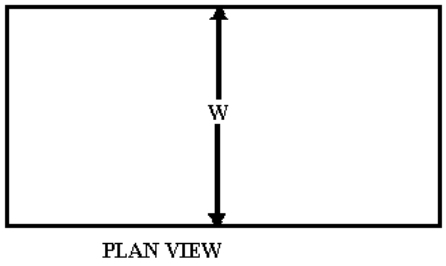
## DETERMINING ROOF WIDTH

The intent of this section is to serve as a guideline to assist employees in complying with the requirements for establishing a safety monitoring system as a means of providing fall protection during the performance of roofing operations on low-sloped roofs 50 feet or less in width. Each example that follows demonstrates a roof plan or plans and indicates where each roof or roof area is to be measured to determine its width. Section views or elevation views are shown where appropriate. Some examples demonstrate both "correct" and "incorrect" subdivisions of irregularly shaped roofs divided into smaller, regularly shaped areas. In each example, the dimension selected to be the width of an area is the lesser of the two primary dimensions of the area, as viewed from above.

Example A shows that on a simple rectangular roof, width is the lesser of the two primary overall dimensions. This is also the case with roofs which are sloped toward or away from the roof center, as shown in Example B.

EXAMPLE A.

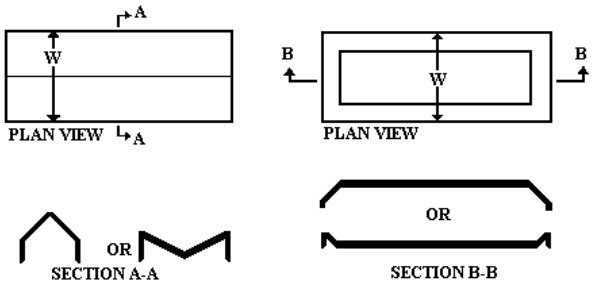
RECTANGULAR SHAPED ROOFS




PLAN VIEW

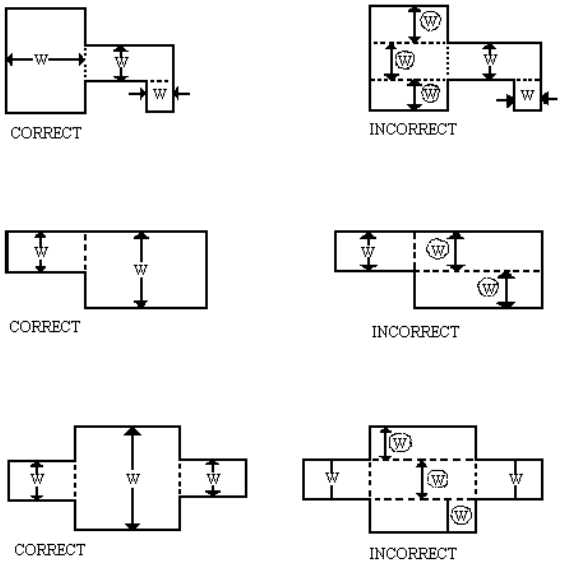
Example B

SLOPED RECTANGULAR SHAPED ROOFS




Many roofs are not simple rectangles. Such roofs may be broken down into subareas, as shown in Example C. The process of dividing a roof area can produce many different configurations. Example C gives the general rule of using dividing lines of minimum length to minimize the size and number of the areas which are potentially less than 50 feet wide. The intent is to minimize the number of roof areas where safety-monitoring systems alone are sufficient protection.

EXAMPLE C.

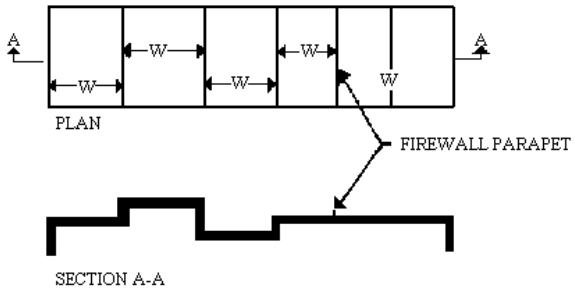


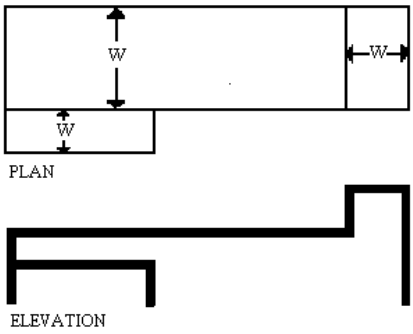

Roofs which are comprised of several separate, non-contiguous roof areas, as in Example D, may be considered as a series of individual roofs. Some roofs have penthouses, additional floors, courtyard openings, or similar architectural features.

Dotted lines are used in the examples to show the location of dividing lines. An encircled “W” denotes incorrect measurements of width.

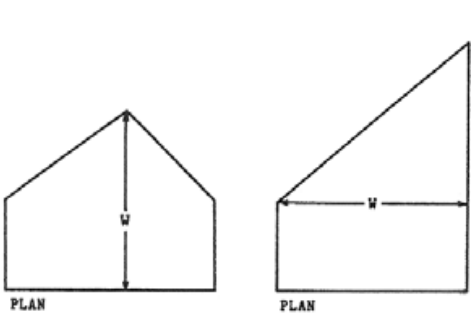
EXAMPLE D.

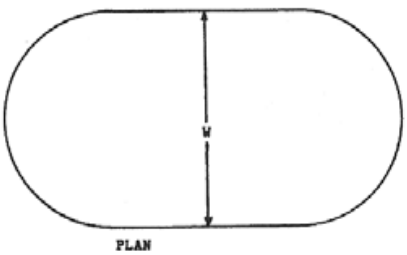
SEPARATE. NON-CONTIGUOUS ROOF AREAS

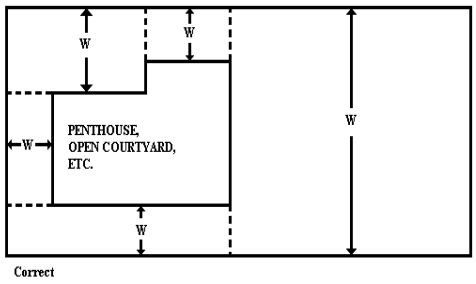


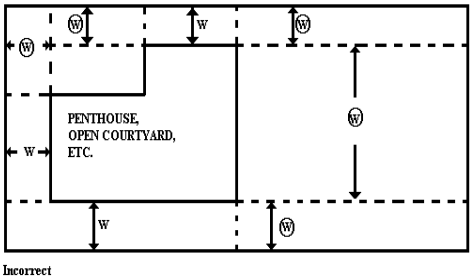




Example E shows how the rule for dividing roofs into subareas is applied to such configurations. Irregular, non-rectangular roofs must be considered on an individual basis, as shown in Example F.



Such roofs are to be divided into sub-areas by using dividing lines of minimum length to minimize the size and number of the areas which are potentially less than or equal to 50 feet in width in order to limit the size of roof areas where the safety monitoring system alone can be used1926.502(b)(10)].

## ALTERNATIVE FALL PROTECTION METHODS

The fall protection alternatives detailed in this section shall only be used when the Company, project manager, risk manager, and/or competent person have done a pre-work hazard analysis and determined a traditional fall protection system (personal fall arrests system and guardrails) to be infeasible or a greater risk to the employee. The site specific plan will include a statement on infeasibility describing why a traditional fall protection system cannot be used and why the use of other equipment, such as scaffolds, ladders, or lifts, is not feasible for the particular job and task.

The infeasibility statement shall also include the alternative fall protection method used to protect employees from fall hazards on the jobsite. One or more of the alternative fall protection methods listed below shall be implemented when traditional fall protection systems are deemed infeasible. The competent person must be on site at all times when employees are engaged in a fall protection system whether primary or alternative.

## WARNING LINE SYSTEM:

A warning line system may be used on flat walking/working surfaces or roofs with a low-slope designation. The Company designates a roof as low-slope when the elevation change is four inches of rise for each 12 inches of lateral measurement (4 to 12) or less.

The warning line shall consist of ropes, wires, or chains and be fastened to stanchions and maintain a height of 34 to 39 inches from the walking/working surface. The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and be marked every six feet with high visibility material. The stanchions shall be capable or resisting, without tipping over, a force of at least sixteen (16) pounds applied against the stanchion. The warning line shall be attached to the stanchion so that when the warning line is pulled in one section it does not create slack in adjacent sections before the stanchion is pulled down.

The warning line shall be erected at least 6 feet from the edge on all sides when no mechanical equipment is in use. When mechanical equipment is in use, the warning line running parallel to the equipment shall be 6 feet from the edge, while the warning line running perpendicular to the equipment shall be at least 10 feet from the edge. A dual warning line shall be erected along the path to allow employees access to a ladder or other means of reaching the elevated walking/working surface. Additionally, the path to the access point shall have a barricade of equal or greater strength than the warning line to limit access to the path.

Equipment and materials shall only be stored where employees are protected by the warning line system or a primary fall protection method such as personal fall arrest system or guardrails. No employee is permitted outside the warning line unless they are conducting work in this area. If it is necessary to work outside the warning line, the safety monitor system shall be used in conjunction with the warning line system.

## CONTROLLED ACCESS ZONE:

A controlled access zone shall be used to control or restrict access to a fall hazard relating to a leading edge or other elevated work.

The controlled access zone shall have a control line that runs parallel to the edge and is connected to either a guardrail system or wall on each end. The control line shall be erected no closer than 6 feet nor farther than 25 feet from the unprotected edge. The control line shall move in accordance with the distance of the hazard from the control line.

The control line shall consist of ropes, wires, tapes or equivalent materials and be attached to supporting stanchions. The control line shall maintain a height of 39 to 45 inches from the walking/working surface and be flagged every 6 feet with high visibility material. The control line shall have a minimum breaking strength of 200 pounds.

Only employees trained in the hazards of the access zone and authorized by the Company shall be allowed in the controlled access zone. The Company shall list in the site specific fall protection program each employee authorized to enter the controlled access zone.

## SAFETY MONITOR SYSTEM:

A safety monitor system may be used when a traditional fall protection system is determined infeasible and may also be used in conjunction with a warning line system or controlled access zone.

The Company shall designate the competent person as the safety monitor. The safety monitor must be capable of recognizing fall hazards and will be readily identifiable.

The safety monitor shall be on the same walking/working level as the employees he/she is monitoring. The safety monitor shall be able to orally communicate with the employees and not be assigned any duties that interfere with their obligation as the safety monitor. No other employees shall be permitted in the area where employees are using a safety monitor as fall protection. Employees engaged in the fall protection system will be readily identifiable.

No mechanical equipment shall be used or stored in the working area where a safety monitor is being used for fall protection.

Employees shall comply with the directions of the safety monitor at the time of the instruction.

## BARRICADES:

A barricade is required at the ground level from time to time to keep unauthorized employees from entering a hazardous environment. Barricades shall be made of high visibility material and placed at least six feet away from the edge of the hazardous environment. Employees are not permitted in this area without authorization from the Company and the proper training and equipment to work with and/or around the hazard.

## RESCUE

In the event an employee falls from height and is suspended above ground level in a fall protection harness, employees should take the following action.

1. The competent person will determine if an immediate 911 call to alert emergency rescue services is required.

2. If the employee is conscious and there are no identifiable immediate threats to the employee's life, the employee will utilize the rope ladder system attached to the harness (if equipped) to relieve pressure from critical arteries and other body parts until professional rescue services arrive.

3. If the employee can be retrieved from the suspended system without risking the life of the employee and/or those who would affect the rescue effort, then the competent person can utilize available equipment on the worksite to rescue the employee. In this situation, it is important the employee communicate their consent to be rescued by someone other than professional rescue services.

4. If the employee is conscious and there are identifiable immediate threats to the employee's life, the competent person will attempt to rescue the employee by utilizing personnel and equipment available on the worksite. Any rescue effort further endangering the suspended employee or risking the safety or life of other employees

involved in the rescue effort should not be attempted. In this situation, it is important the employee communicate his consent to be rescued by somone other than professional rescue services.

5. If the employee is unconscious and there are no identifiable immediate threats to the employee's life, the competent person should clear the area and wait for professional rescue services to arrive. If the employee can be retrieved from the suspended system without risking the safety or life of the employee or others involved in the rescue effort, then the competent person can utilize available equipment on the worksite to rescue the employee. The employee's unconscious state is deemed consent to the rescue.

6. If the employee is unconscious and there are identifiable immediate threats to the employee's life, the competent person can attempt to rescue the employee by utilizing personnel and equipment available on the worksite. Any rescue effort further endangering the suspended employee or risking the safety or life of other employees involved in the rescue effort should not be attempted. The employee's unconscious state is deemed consent to the rescue.

*Section 14:*

# Fire Protection

***See Attachment 12 "Fire Prevention Checklist", Attachment 13 "Hot Work Permit"***

## RESPONSIBILITY

The Company's competent person or the competent person's designated representative is responsible for all facets of this program and has the full authority to make necessary decisions to ensure the success of this program.

## FIRE EXITS

Each workplace shall have at least two means of escape, remote from each other, to be used in a fire emergency.

Fire doors must not be blocked or locked to prevent emergency use when employees are in the buildings. Warehouse aisles must be kept clear of merchandise and debris as not to block travel to exits. Exit routes from buildings shall be clearly marked with signs designating exits. The Company's authorized agent will perform inspections monthly and on a random basis.

## PORTABLE FIRE EXTINGUISHERS

Each workplace and/or building must have a full complement of the proper type of fire extinguishers for the fire hazards present. Extinguisher size, placement, and employee training shall be in accordance with 29 CFR 1926 Subpart F.

Employees who may use fire extinguishers must be instructed in the hazards of fighting fire, proper operation of available fire extinguishers, and correct procedures for alerting others to the fire emergency. The competent person is responsible for the training conducted for all employees expected to operate fire extinguishers or assist in employee evacuation. Only approved fire extinguishers are to be used in workplaces, and they must be kept in good operating condition.

Monthly inspections must be completed and documented on all fire extinguishers. A qualified service company will perform annual servicing of all extinguishers.

## EMERGENCY EVACUATION PLANNING

For those situations where evacuation is necessary, employees shall be trained in proper evacuation procedures. In the event of evacuation, all employees will meet outside the building in a predetermined location to ensure accountability of all personnel. Under no circumstances will anyone re-enter the building for any reason until the fire department has deemed it safe to do so.

The Company will establish the following plan based on a hazard assessment:

- Evacuation routes and procedures for all employees.
- Procedures for accounting for all evacuated employees.
- Special procedures for evacuating physically impaired employees.
- Procedures for those employees who must remain behind for any reason.
- The means of alerting employees to a fire emergency.
- The means for employees to report emergencies.

In addition, each employee shall familiarize themselves with the closest evacuation route from their work area and a secondary route.

All new or transferred employees must be trained in the emergency evacuation program when beginning their job duties. All employees must be trained in any changes to the plan.

## WORKPLACE FIRE PREVENTION

This written plan will be available for employee review. In the event of a fire alarm or notification of a fire, all employees will evacuate the facility immediately and gather at a designated meeting location. No employee is ever required to remain in the building or fight a fire.

- Flammable materials will be clearly marked and stored in a fire resistant locker. Flammable materials shall be used only in a well-ventilated area and shall be stored at least 50 feet from any ignition source.

- Flammable waste or spills will be cleaned up in accordance with all Federal, State, and Local regulations. At no time will any flammable liquids be poured down a drain or sewer. Any employee aware of such disposal methods will report it to management immediately. In case of a large spill, employees will turn off any ignition sources in the area and close or block any nearby drains. The area will be evacuated and 911 shall be called.

- Smoking, welding, or the use of any other open heat or ignition source is not permitted within 50 feet of any flammable liquid or gas or in any area where those materials may accumulate.

- Heat producing equipment such as burners, heat exchangers, boilers, ovens, stoves, fryers, etc., must be properly maintained and kept clean of accumulations of flammable residues.

- Heat-producing sources will be inspected monthly.

- All employees will be trained in the potential fire hazards of their jobs and the procedures listed in the fire prevention plan.

- All new or transferred employees must be trained in the fire prevention plan when beginning their job duties.

- All employees must be trained in any changes in the plan.

While in the workplace, employees shall have fire extinguishers available to them, and in good working order, for every major work area.

In accordance with 29 CFR 1926.150, when working in a building or other structure, the availability of working fire extinguishers must meet the following standards:

- Fire extinguishers shall be provided for every 3000 square feet of floor space.
- Shall be located no more than 200 feet apart.
- Shall be located on every floor.
- Shall be located near stairwells.
- Shall be inspected and logged monthly.

Fire extinguishers shall also be located in the cab of every crane and company vehicle and within the immediate vicinity wherever hot work is being performed.

In open workplaces or when not working inside an enclosed structure, fire extinguishers shall be located in the competent person’s truck and in the equipment trailer.

*Section 15:*

# First Aid

This first aid policy is designed to meet the requirements set forth in 29 CFR 1926.50.

## MEDICAL SERVICES AND FIRST AID

In accordance with 29 CFR 1926.50(a), the Company will provide employees with medical personnel for advice and consultation on matters pertaining to occupational health.

Employees are required to report all injuries that occur to themselves and other employees, regardless of how minor, to the supervisor immediately.

No employee is required to provide first aid to another person. This information is being made available to employees in order to allow the employees the knowledge and training to handle any first aid matter they choose to and are qualified to handle.

In the absence of a clinic, hospital, or physician that is reasonably close in terms of time and distance to the worksite, a person who has a valid certificate in first-aid training from the American Red Cross or equivalent shall be available at the worksite to render first aid.

The Company shall ensure that an effective communication system is available to contact emergency services when necessary.

In accordance with 29 CFR 1926.50 (f)(2)(ii)(a), The Company shall post the address of the worksite in a conspicuous place, as well as the latitude and longitude information of the worksite. Employees shall be made aware of the address of the worksite and the location of the posted information.

## PURPOSE

The purpose of this section is to make employees of the Company aware of the first aid requirements and availability of first aid supplies on Company jobsites. In meeting the requirements set forth in 29 CFR 1926.50(c) the Company will provide a person who is trained and certified in first aid to render services on a Company jobsite if an infirmary, clinic, hospital, or physician is not reasonably accessible. “Reasonably accessible” has been determined to be less than four minutes away, according to the interpretations made available by the U.S. Department of Labor.

## GENERAL REQUIREMENTS

The Company will provide first aid supplies (first aid kit) on each jobsite. First aid kits will meet the requirements of ANSI/ISEA Z3-8.1-2015 in accordance with Appendix A to 29 CFR 1926.50.

The supervisors shall ensure the first aid kits are made accessible to the employees.

The contents of the first aid kits shall be placed in a weatherproof container with individual sealed packages for each type of item, and shall be checked by the Company before being sent out on each job. The supervisor shall check each first aid kit at least weekly on each job to ensure the expended items are replaced.

Employees of the Company are to use the universal emergency services number “911” to contact emergency services when needed. In areas where the 911 system is not available, the Company will post the telephone numbers for the physicians, hospitals, or ambulances accessible to the area.

Where an employee’s eyes or body may be exposed to injurious corrosive materials, suitable washing facilities for

quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. All washing and/or drenching stations shall be maintained in a sanitary condition.

If it is reasonably anticipated that employees will be exposed to blood or other potentially infectious materials while using first aid supplies, the Company shall provide a bloodborne pathogen kit that shall, at a minimum, provide gloves, gowns, face shields, masks and eye protection to protect the employee.

## TRAINING

In accordance with 29 CFR 1926.21(b)(2), the Company will train each employee on the proper use and reporting procedures pertaining to first aid and medical services.

*Section 16:*

# Hand Tool Safety

## PURPOSE

In accordance with 29 CFR 1926 Subpart I, the Company will not issue tools deemed unsafe or that fail to meet OSHA requirements. Additionally, employees shall ensure any personal tools being used meet the same OSHA requirements as Company-issued tools. Personal protective equipment shall be used at all times.

## POWDER-ACTUATED TOOLS

Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.

The following protocol must be used when using powder-actuated tools.

1. The tool shall be tested each day before loading to verify safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.

   › Any tool malfunctioning during use or not found in proper working order shall be immediately removed from service and not used until properly repaired.

2. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.

3. Loaded tools shall not be left unattended.

4. Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.

5. Driving into easily penetrated materials shall be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side.

6. No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.

7. Tools shall not be used in an explosive or flammable atmosphere.

8. All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

9. Powder-actuated tools used by employees shall meet all other applicable requirements of ANSI/ASSE 10.3 Safety Requirements for Powder-Actuated Fastening Systems, and Safety Requirements for Explosive-Actuated Fastening Tools.

## ABRASIVE WHEELS AND TOOLS

1. All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation.

2. Grinding machines shall be equipped with safety guards in conformance with the requirements of American National Standards Institute, B7.1-2017, and Safety Code for the Use, Care and Protection of Abrasive Wheels.

3. The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel and the strength of the fastenings exceeding the strength of the guard, except under the following circumstances:

   › On all operations where the work provides a suitable measure of protection to the operator, safety guards may be constructed so that the spindle end, nut, and outer flange are exposed. When the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

   › The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

4. Bench grinders shall have the work rest set no more than 1/8th of an inch from the grinding wheel.

5. The grinding wheel shall be inspected prior to use for defects and any wheel found to be damaged shall be removed from service. New grinding wheels shall be sound-tested for cracking, with a non-metal implement striking the wheel at the 2, 4, 8, and 10 o'clock positions to produce a ring tone from useable wheels.

## PNEUMATIC TOOLS

1. Pneumatic power tools shall be secured to the hose or whip by positive means to prevent the tool from becoming incidentally disconnected.

2. All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 psi pressure at the tool, shall have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.

3. The Company's employees will follow the guidelines set forth by the manufacturers in reference to safe operating pressure for hoses, pipes valves, filters, and other fittings and will not exceed these guidelines.

4. The use of hoses for hoisting or lowering tools shall not be permitted.

5. The use of water hose clamps on pneumatic lines is prohibited. Only crimping or banding clamps designed for use on pneumatic tools may be used.

## WOODWORKING TOOLS

1. All fixed power-driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off position.

2. The operating speed shall be etched or otherwise permanently marked on all circular saws over 20 inches in diameter or operating at over 10,000 peripheral feet per minute. Any saw so marked shall not be operated at a speed greater than than that marked on the blade. When a marked saw is re-tensioned for a different speed, the marking shall be corrected to show the new speed.

3. Automatic feeding devices shall be installed on machines whenever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points.

4. All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts.

5. The lower guard shall cover the saw to the depth of the teeth except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

6. All woodworking tools and machinery shall meet other applicable requirements of American National Standards Institute, 01.1-2013, Safety Code for Woodworking Machinery.

7. The Company's employees shall not modify or exceed the manufacturer-intended use of any tool/equipment. This includes all company-owned/issued and personally owned equipment used at the Company's workplace.

## RADIAL SAWS

The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters, broken saw teeth, etc., and will deflect sawdust away from the operator. The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection possible for the operation being performed.

## HAND-FED CROSSCUT TABLE SAWS

Each circular crosscut table saw shall be guarded by a hood that meets all safety requirements.

## HAND-FED RIPSAWS

Each circular hand-fed ripsaw shall be guarded by a hood that completely encloses the portion of the saw blade above the table and the portion of the saw blade above the material being cut. The hood and mounting shall be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut. The hood shall not offer any considerable resistance to the insertion of material to saw or to the passage of the material being cut.

The hood shall be made of adequate strength to resist blows and strains incidental to reasonable operation, adjusting, and handling, and shall be so designed as to protect the operator from flying splinters and broken saw teeth. It shall be made of material soft enough so to not cause tooth breakage. The hood shall be so mounted as to ensure its operation will be positive, reliable, and in true alignment with the saw, with mounting adequate in strength to resist any reasonable side thrust or other force tending to throw it out of line.

## LASERS

Each laser in use by the Company shall be inspected by the competent person for defects and to make sure all the proper labels/placards are on the laser prior to each use. Any laser found to be defective shall be removed from service immediately.

Employees working with lasers, and/or around lasers, shall follow the protocol described below:

1. Employees must be trained and qualified to install, adjust, and operate lasers.

2. The proper eye protection must be worn when working around lasers with exposure to laser light greater than 0.005 watts (5 milliwatts).

3. Employees shall not be exposed to 0.010 watts (10 milliwatts) per square centimeter.

4. Areas in which lasers are in use shall have warning placards erected to alert other employees in the area of laser use.

5. Lasers must never be pointed directly at other people.

6. Lasers must be turned off or covered by shutters/caps when not in use or when leaving the worksite for a period of time.

**Any tool to be found damaged or defective shall be removed from service immediately. Employees do not have the authority to alter or repair damaged tools without the express written consent of Management of the Company.**

*Section 17:* ***See Attachment 28 "Chemical List"***

# Hazard Communication / GHS / Right-To-Understand

The Company will convey all known hazard information to the employees by means of labels on containers and safety data sheets (SDS) in accordance with the Globally Harmonized System (GHS).

Chemical manufacturers, importers, and distributors are required to label containers of hazardous chemicals. They will be labeled, tagged, or marked with the identity of the chemical and appropriate hazard warnings, along with the name and address of the manufacturer, importer, or other responsible party.

In the workplace, each container must be labeled, tagged, or marked with the identity of contained hazardous chemicals and the appropriate hazard warnings for employee protection. The hazard warning can be any message comprised of words, pictures, and/or symbols that provide at least general information regarding the hazards of the chemical(s) in the container and the targeted organs at risk. Labels must be written legibly and in English (and other languages if applicable) and prominently displayed.

At no time shall any employee of the Company use any chemical that is not properly labeled.

Exemptions to the requirement for in-plant individual container labels are as follows:

1. Employers can post signs or placards that convey the hazard information if there are a number of stationary containers within a work area that have similar contents and hazards.

2. Employers can substitute various types of standard operating procedures, process sheets, batch tickets, blend tickets, and similar written materials for container labels on stationary process equipment if they contain the same information and the written materials are readily accessible to employees in the work area.

3. Employers are not required to label portable containers into which hazardous chemicals are transferred from labeled containers and that are intended only for the immediate use by the employee making the transfer. As a best management practice, employees will not transfer any chemical to a smaller, daily-use container with food or beverage labeling affixed. The site competent person must approve transfer of chemicals from a labeled container to a non-labeled container.

## SAFETY DATA SHEETS (SDS)

The SDS is a detailed information bulletin prepared by the manufacturer or importer of a chemical and describes the physical and chemical properties, physical and health hazards, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures.

## ELECTRONIC SAFETY DATA SHEETS

The Company will maintain a chemical inventory list of all hazardous chemicals known to be present in the workplace. Safety data sheets are available from the manufacturer electronically. Employees will have a list of all chemicals present in their environment available for immediate review. Should a copy of the SDS be needed, it may be accessed or requested via telephone, computer, or fax machine.

If the technology necessary to obtain an SDS is unavailable during an employee's work shift, a physical copy can be delivered by request from the office. If the absence of an SDS will cause hindrance on the employee's ability to complete their job, a physical copy of the SDS information will be maintained on site during the entire project. All new chemicals introduced to a workplace will be added to the chemical inventory list and notification will be sent to all employees before the chemical is used.

## HAZARDOUS MATERIALS USED

See "Chemical List" on Page 233 for a list of all hazardous chemicals approved for use by employees at company worksites.

If products are to be used that contain hazardous chemicals for which no SDS has been received, the competent person must contact the business office and seek additional guidance before introducing the chemical into the work environment. The business office will contact the supplier, manufacturer, or importer to obtain the missing SDS. Employees will then be trained and provided all required PPE before being allowed to use the new product.

## PROGRAM MONITORING PROCEDURES

The following recordkeeping system will be established and maintained concerning all aspects of the OSHA Hazard Communication standard:

- **Inventory:** A file copy of all chemical inventories must be maintained. Each time the list is revised, an old and new copy reflecting effective dates must be maintained in the file. These records must be available and reflect a thirty-year history.
- **Monitoring:** A complete history of industrial hygiene monitoring must be maintained and made available to employees upon request.
- **Training:** All employees will receive "Right-to-Understand" training on an annual basis. These training sessions will be documented and a permanent file maintained. Copies of all materials provided to employees during a training session must be maintained in a permanent file.
- **Availability:** Any SDS is available to employees by contacting the manufacturer (via the internet or other electronic means), contacting the office, or maintaining a hard copy when technology does not allow access during the employee's work shift.
- **Hazardous Non-Routine Tasks:** Periodically, employees will be required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information by his or her competent person about hazardous chemicals to which they may be exposed during such activity. This information will include:
  - » Specific chemical hazards
  - » Protective safety measures the employee can take
  - » Measures the company has taken to ensure employee safety

## GUIDE TO READING A SAFETY DATA SHEET

The following is a list of the 16 specific sections on the SDS.

### SECTION 1 / PRODUCT IDENTIFICATION

This section includes product identifier, manufacturer or distributor name and contact information (address, phone number, emergency phone number), recommended use, and restrictions on use.

### SECTION 2 / HAZARD IDENTIFICATION

This section includes all hazards regarding the chemical and required label elements.

### SECTION 3 / COMPOSITION INFORMATION ON INGREDIENTS

This section includes information on chemical ingredients and trade secret claims.

**SECTION 4 / FIRST AID MEASURES**

This section includes important symptoms/effects — both acute and delayed — and required treatment.

**SECTION 5 / FIRE FIGHTING MEASURES**

This section lists suitable extinguishing techniques/equipment and the chemical hazards introduced by fire.

**SECTION 6 / ACCIDENTAL RELEASE MEASURES**

This section lists emergency procedures, protective equipment, and proper methods of containment and cleanup.

**SECTION 7 / HANDLING AND STORAGE**

This section lists precautions for safe handling and storage, including incompatibilities.

**SECTION 8 / EXPOSURE CONTROLS PERSONAL PROTECTION**

This section lists OSHA's Permissible Exposure Limits (PELs), Threshold Limit Values (TLVs), appropriate engineering controls, and personal protective equipment (PPE).

**SECTION 9 / PHYSICAL AND CHEMICAL PROPERTIES**

This section lists the chemical's characteristics.

**SECTION 10 / STABILITY AND REACTIVITY**

This section lists chemical stability and possibility of hazardous reactions.

**SECTION 11 / TOXICOLOGICAL INFORMATION**

This section includes routes of exposure, related symptoms, acute and chronic effects, and numerical measurement of toxicity.

**SECTION 12 ECOLOGICAL INFORMATION**

**SECTION 13 DISPOSAL CONSIDERATIONS**

**SECTION 14 TRANSPORT INFORMATION**

**SECTION 15 REGULATORY INFORMATION**

**SECTION 16 OTHER INFORMATION**

This section includes the date of preparation and last revision.

**Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15(29 CFR 1910.1200(g)(2).*

| GHS PICTOGRAMS AND HAZARD CLASSES | | |
|---|---|---|
|  |  |  |
| Oxidizers | Flammables, self reactives, pyrophorics, self-heating emits, flammable gas, organic peroxides | Explosives, self reactives, organic peroxides |
|  |  |  |
| Acute toxicity (severe) | Corrosives | Gases under pressure |
|  |  |  |
| Carcinogen, respiratory sensitizer, reproductive toxicity, target organ toxicity, mutagenicity, aspiration toxicity | Environmental toxicity | Irritant, dermal sensitizer, acute toxicity (harmful), narcotic effects, respiratory tract irritation |

| TRANSPORT "PICTOGRAMS" | | |
|---|---|---|
|  |  |  |
| Flammable liquid, flammable gas, flammable aerosol | Flammable solid, self-reactive substances | Pyrophoric (spontaneously combustible) self-heating substances |
|  |  |  |
| Substances which, in contact with water, emit flammable gases (Dangerous When Wet) | Oxidizing gases oxidizing liquids oxidizing solids | Explosive Divisions 1.1, 1.2, 1.3 |

| TRANSPORT “PICTOGRAMS” | | |
|---|---|---|
|  |  |  |
| ExplosiveDivision1.4 | ExplosiveDivision1.5 | ExplosiveDivision1.6 |
|  |  |  |
| Compressed gases | Acute poxicity (poison): oral, dermal, inhalation | Corrosive |
|  |  | |
| Marine pollutant | Organic peroxides | |

| ACUTE ORAL TOXICITY | | |
|---|---|---|
|  |  |  |
| ***Danger***<br>Fatal if Swallowed | ***Danger***<br>Toxic if Swallowed | ***Warning***<br>Harmful if Swallowed |

## LABELING/SECONDARY LABELING

Portable containers of hazardous chemicals do not have to be labeled if they contain chemicals transferred from labeled containers and are intended only for the immediate use of the employee making the transfer. Immediate use means “use within the same shift.”

All labels on incoming containers must not be defaced in any way. Observation or other detection of missing or defaced labels must be immediately reported to the Management so appropriate labels can be reapplied immediately.

Below is an example of the ANSI Z400.1 / ANSI Z129.1 Precautionary Labeling Standard (Voluntary):

**Auto-flame (Contains Acetylene)**
**WARNING! HARMFUL IF SWALLOWED,**
**FLAMMABLE LIQUID AND VAPOR**

**Do not taste or swallow. Do not take internally. Wash thoroughly after handling. Keep away from heat, sparks, and flame. Keep container closed. Use only with adequate ventilation. FIRST AID: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. In case of Fire, use water fog, dry chemical, CO2, or alcohol foam. Water may be ineffective. Flash Point = 120°F. Residue vapor may explode or ignite on ignition; do not cut, drill, grind, or weld on or near the container.**
**See Safety Data Sheet (SDS) for further details regarding the safe use of this product.**

## TRAINING PROGRAM

The Company has established a training and information program for employees who are exposed to hazardous chemicals in their work area at the time of initial assignment and whenever a new hazard is introduced into their work area.

At a minimum, the discussion topics must include the following:

1. The hazard communication standard and its requirements.

2. The components of the hazard communication program in the employees' workplaces.

3. Operations in work areas where hazardous chemicals are present.

4. The location in which the Company will keep the written hazard evaluation procedures, communications program, and the chemical list.

The employee training plan consists of the following elements:

1. Detailed instructions on implementing hazard communication program in specified workplace, reading and interpreting information on labels and the SDS, and obtaining and using the available hazard information.

2. The hazards of the chemicals in the work area. (Hazards may be discussed by individual chemical or by hazard category, such as flammability.)

3. Measures employees can take to protect themselves from the hazards, such as washing stations when handling Portland cement.

4. Specific procedures put into effect by the employer to provide protection such as engineering controls, work practices, and the use of personal protective equipment (PPE).

5. Methods and observations — such as visual appearance or smell — that can be used to detect the presence of exposed hazardous chemicals.

## RETRAINING

Additional employee training concerning workplace hazards will be required under the following circumstances:

1. New chemicals are introduced into the workplace.

2. Process or equipment changes are made which could cause new or increased employee exposure.

3. Procedures and work practices are introduced or changed which could cause changes in the employees' exposure.

4. Employees are transferred from one work area to another where different hazards are present.

5. Employees are routinely exposed to hazardous materials, in which case employees must be retrained annually.

6. New information regarding a product becomes available and facilitates an improvement in employee safety.

The authorized agent conducting the training will produce a written record documenting the type of training provided, the date the training was completed, and signatures of the employees trained. This record of training will be maintained by the Company.

All exposure incidents must be reported to the office immediately.

*Section 18:*

# Heat Illness Prevention Plan

## *Introduction:*

Heat-related fatality cases show that workplaces with the heat index expected to be eighty degrees Fahrenheit (80°F) or higher may have a heat hazard present when work activities are at or above a moderate workload. Although heat hazards are common in indoor and outdoor work environments, heat-related illness and fatalities are preventable. A heat-related illness occurs when there is an increase in the worker's core body temperature above healthy levels. As core temperature rises, the body is less able to perform normal functions. As core temperature continues to increase, the body releases inflammatory agents associated with damage to the liver and muscles. This process may become self-sustaining and generate a runaway inflammatory response, known as the systemic inflammatory response syndrome, that often leads to death.

Heat-related illness prevention is most effective when company leadership commits to identifying and reducing exposure to heat stress hazards.

Employers will work with employees to ensure an adequate supply of potable water is available on each worksite. Employers are responsible to make potable water available to their employees. If the Company or any of its designated representatives discover a deficiency in the amount or quality of water available to employees, steps will be taken immediately to abate the situation and the employer will be responsible for all costs related to the correction of the deficiency.

## *Competent Person Duties:*

1. Determine the number of Company employees and/or subcontractors working in the assigned work area.

2. Determine the number of water stations required and locate the water station(s) as close as possible to the work area. A water station will include a sanitary container (filled with water and sealed), disposable water cups, and a trash receptacle. Bottled water may be substituted for water stations.

3. Monitor water stations as often as necessary to ensure an adequate supply of water is available to employees.

The Company will make sure adequate shade is available to all employees in the work environment. Employers are responsible for providing adequate break areas for employees to rest in a shaded space, compliant with the following criteria:

1. The shade will be located as close to the work area(s) as practicable and not create an unsafe condition to the work process and/or emergency responders.

2. Access to shade areas shall be unobstructed and not set up next to portable toilet facilities.

3. Shade must block all direct sunlight and the employee must not cast a shadow.

When available on site, the Company trailer shall be used for all preventative cool-down rest and recovery periods.

Prior to the building structure being completed, the following shade options are acceptable:

- E-Z UP -structures
- Existing trees on the project site
- Existing building (inside)
- Project management office

After the building structure is completed, the following shade options will be deemed acceptable:

- The floors below the work area (e.g., if deck is being built)
- E-Z UP structures for workers working outside completed building
- Project management office

The shade provisions listed above will be available on site at all times and the competent person will ensure the availability of shade when heat indexes are forecast to reach eighty degrees Fahrenheit (80°F) or higher.

The Company will routinely monitor the weather and alert employees and subcontractor employees when temperatures are forecast to exceed eighty degrees Fahrenheit (80°F). Subcontractors, crew foremen, and superintendents will monitor temperatures to determine if work schedules should be modified and will communicate their request in writing to the Company's competent person.

The Company will implement the following site-specific hot weather / high heat procedures when temperatures equal or exceed eighty degrees Fahrenheit (80°F).

Verbal communications will be maintained at all times. If radios are available, they can be used for remote work to contact a supervisor for assistance. Cell phones can be used as long as reception is available.

When temperatures equal or exceed eighty degrees Fahrenheit (80°F), employers will carry out the following actions:

1. Advise their crews of the high heat hazard
2. Advise crews of where to get water and find shade
3. Remind all workers to drink plenty of water throughout the work shift
4. Remind employees to take a cool-down rest when necessary

When temperatures are equal to or exceed eighty degrees Fahrenheit (80°F), all competent persons will monitor workers for alertness and signs or symptoms of heat illness. Each competent person will be responsible for supervising his/her crew not to exceed 20 employees.

Competent persons will be authorized to call for emergency medical services when necessary.

**Acclimatization:** Any new employee assigned to a high heat area shall be closely observed by a competent person and/or properly trained employee for the first 14 days of that employee's employment.

All employees shall be closely observed by the appropriate competent person during a heat wave.

**Heat wave:** Any day in which the predicted heat index for the day will be at least one-hundred degrees Fahrenheit (100°F) and at least ten degrees Fahrenheit (10°F) higher than the average high daily temperature in the preceding five days.

**Emergency response procedure:** All Company employees and subcontractors will participate in an effective and documented employee orientation, which includes emergency response procedures for immediate notification of any injury, including heat illness.

Effective communication shall be maintained at all times to contact emergency medical services when necessary, including the following protocol:

1. Employees and subcontractor employees must report to the Company's competent person and/or designated representative when there is an emergency situation in their work area.

2. Employees and subcontractor employees will use office phones, cell phones, radios, or other acceptable means to make contact with the Company's competent person.

All Company employees will be trained to recognize the signs and symptoms of heat illness. All supervisors (project managers, superintendents, and foremen) should be trained on first aid/CPR and how to recognize the signs and symptoms of heat illness.

For any employee showing signs and symptoms of heat illness, a heat symptom report must be completed by project supervisor. Any employee and/or subcontractor employee showing signs and symptoms of heat illness shall be escorted to a shaded or air-conditioned area. Employee shall be monitored and not left alone or sent home without being provided on-site first aid or emergency medical services.

| *First Aid Response Chart* | | |
|---|---|---|
| **Illness** | **Symptoms** | **First Aid Response** |
| Heat Stroke | • Confusion<br>• Fainting<br>• Seizures<br>• Excessive sweating or red, hot, dry skin<br>• Extremely high body temperature | Immediately Call 911. While waiting for help,<br>1. Place worker in shady, cool area.<br>2. Loosen clothing, remove outer clothing.<br>3. Fan air on worker; cold packs in armpits.<br>4. Wet worker with cool water; apply ice packs, cool compresses, or ice if available.<br>5. Provide fluids (preferably water) as soon as possible.<br>6. Stay with worker until help arrives. |
| Heat Exhaustion | • Cool, moist skin<br>• Heavy sweating<br>• Headache<br>• Nausea or vomiting<br>• Dizziness<br>• Light headedness<br>• Weakness<br>• Thirst<br>• Irritability<br>• Fast heartbeat | 1. Have worker sit or lie down in a cool, shady area.<br>2. Give worker plenty of water or other cool beverages to drink.<br>3. Cool worker with cold compresses/ice packs.<br>4. Take to clinic or emergency room for medical evaluation or treatment if signs or symptoms worsen or do not improve within 60 minutes.<br>5. Do not return to work for remainder of day. |
| Heat Cramps | • Muscle spasms<br>• Pain<br>• Usually in abdomen, arms, or legs | 1. Have worker rest in shady, cool area.<br>2. Worker should drink water or other cool beverages.<br>3. Wait a few hours before allowing worker to return to strenuous work.<br>4. Have worker seek medical attention if cramps do not go away. |
| Heat Rash | • Clusters of red bumps on skin<br>• Often appears on neck, upper chest, folds of skin | 1. Try to work in a cooler, less humid environment when possible.<br>2. Keep the affected area dry. |

## *Heat Injury Illness Training*

All new Company employees will participate in the new hire orientation prior to starting work. The orientation will include heat injury illness training. This training will include the following:

1. Site-specific heat illness prevention plan for employees.
2. Site-specific emergency response plan.
3. Prevent Heat Illness at Work Pamphlet (OSHA 4135, available in English and Spanish).

All Company competent persons shall be trained in the following:

1. Site-Specific Heat Illness Prevention Plan.
2. Protecting Workers from the Effects of Heat Fact sheet (OSHA FS 3743).
3. Site-Specific Emergency Response Plan.

See OSHA informational Fact Sheet 3743 ‘Protecting Workers from the Effects of Heat’ and OSHA 4135 ‘Prevent Heat Illness at Work’.

*Section 19:*

# Heavy Equipment

## MATERIALS HANDLING — EARTH-MOVING EQUIPMENT

In accordance with 29 CFR 1926 Subparts O and W, these rules apply to scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, industrial tractors, and similar equipment.

Requirements for rigging and moving of construction supplies are covered in the "Cranes and Lifting" section of this book.

## HEAVY EQUIPMENT OPERATION

Only trained and authorized personnel shall operate any heavy equipment. Before operating or moving such equipment, the operator shall walk around the equipment and familiarize him or herself with any obstacles or hazards. When working in an area around pedestrians, the operator shall make eye contact and direct communication with a designated spotter to confirm no one is in the way of the movement. The use of mobile communication devices is prohibited while operating heavy equipment. **No phone conversation, texting, use of email, or use of earbuds is allowed while operating heavy equipment.**

Seat belts shall be provided on all equipment covered by this section. Employees shall wear seat belts any time the equipment is in operation. Seat belts shall meet the requirements of the Society of Automotive Engineers, J386-1969, *Seat Belts for Construction Equipment*.

Equipment manufactured prior to July 14, 2019 shall be equipped with rollover protective structures that meet the minimum performance standards as outlined in the Society of Automotive Engineers Recommended Practices SAEJ320a, 394, 395, 396, 397 or comply with the consensus standard in the International Standards Organization 3471:2008.

Equipment manufactured on or after July 14, 2019 shall meet the test and performance requirements of the International Organization for Standardization (ISO) standard ISO 3471:2008

Roll-over protective structures shall have the manufacturer's or fabricator's name and address, ROPS model number (if any), and the machine, make, model, or series number that the structure is designed to fit.

Employees shall not move construction equipment or vehicles upon any access roadway or grade unless the access roadway or grade is constructed and maintained to safely accommodate the movement of the equipment and vehicles involved.

Employees shall inspect equipment at the beginning of each shift or prior to operation. Equipment that is defective shall not be used and reported to the competent person.

Modification of machines in any way is strictly prohibited unless express written permission has been granted by the manufacturer and approved by the Company.

All bidirectional machines, such as rollers, compactors, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.

No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

Steering or spinner knobs shall 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 shall be mounted within the periphery of the wheel.

*Section 20:*

# Hot Work Permit Procedure

***See Attachment 12 "Fire Prevention Checklist" and Attachment 13 "Hot Work Permit"***

## PURPOSE

The purpose of hot work permit procedure is to eliminate or control potential ignition sources resulting from welding, flame cutting, soldering, or similar activities that may produce flames or sparks.

## DEFINITIONS

**Hot work** is any activity that produces sparks or flames, such as welding, brazing, flame or plasma-cutting, hot riveting, grinding, chipping, and soldering.

A **hot work permit** is the employer's written authorization to perform operations capable of providing a source of ignition, for example, riveting, welding, cutting, burning, and heating processes.

A **qualified individual** is a personnel who has specific training, knowledge, or experience or is deemed competent to carry out and oversee hot work operations.

## POLICY

This policy fixes responsibility for the supervision and enforcement of a hot work permit system comprised of worksite methods, equipment inspections, worker training, and the issuance and use of personal protective equipment. The following standards are incorporated by reference into this policy: The National Fire Protection Association (NFPA) Standard for Fire Prevention during Welding, Cutting, and Other Hot Work (NFPA 51B, 1999, Appendix A), the Occupational Safety and Health Administration (OSHA) Standard for Welding, Cutting and Brazing, Subpart Q (29 CFR 1910.251 inter alias), the OSHA standard for the handling, storage, and use of compressed gases, contained in Subpart H, Hazardous Materials, 29 CFR 1910.101 inter alias, and the American National Standards Institute, Inc. (ANSI) Standard Z87.1-1989.

### 1.1 Permit System Enforcement and Supervision

1.1.1 The competent person shall be responsible for designating a qualified individual(s) with the authority to issue a hot work permit (HWP).

1.1.2 The name(s) of the individual(s) authorized under Section 1.1.1 will be filed with the competent person.

1.1.3 Authorized individuals will be responsible for inspecting worksites where hot work activities are anticipated prior to issuing a permit. No hot work will be conducted until a permit is issued.

1.1.4 An HWP will expire at the end of the shift during which it was issued.

1.1.5 Authorized individuals will be responsible to ascertain that no hot work takes place half an hour before shift change and to thoroughly inspect, during this period, the area where hot work was conducted. In a multi-story building, this area shall extend one floor above and below.

1.1.6 Whenever circumstances permit, all hot work will be conducted within a designated area at the maintenance shop or at the site where hot work is normally done.

1.1.7 No HWP will be issued at a site where fire protection system impairment is known to exist while the system is impaired.

1.1.8 Flammable or combustible materials will not be allowed within 50 feet of a hot worksite.

1.1.9 Where the provisions of Section 1.1.8 cannot be met, a metal guard, flame-proof curtain or cover will be used.

1.1.10 No HWP will be issued or hot work allowed in, on, or near any vessel or container of flammable or combustible liquids or gases.

1.1.11 No HWP will be issued or hot work allowed in, on, or near any vessel or container where flammable or combustible liquid or gas residue may be present.

1.1.12 Where not known, the determination of whether a flammable or combustible substance or residue is present shall be made by the competent person, authorized agent, or designated individual of the Company. The authorized individual shall be responsible for enforcing Sections 1.1.10 and 1.1.11 until clearance is issued by the competent person, authorized agent, or designated individual of the Company.

1.1.13 No HWP will be issued for work to be conducted in areas where there is accumulation of ignitable debris, materials, furnishings, etc., or where other safety or fire hazards are present.

1.1.14 Prior to issuing an HWP, the authorized individual shall ascertain that a fire extinguisher of the appropriate type and size is readily available and accessible and that a fire-watch attendant (a second person) will be present during the hot work activity to respond promptly should an incident occur.

1.1.15 A fire watch will be posted during hot work and remain in place for at least 30 minutes after work is completed. Any employee, designated by the competent person, who has successfully completed hot work safety and fire extinguisher training can serve as a fire watch.

1.1.16 No HWP will be issued until all wall and floor openings within 50 feet have been covered or protected as per Section 1.1.9.

### 1.2 Equipment Inspection

The authorized individual(s), as defined under Section 1.1.1, will be responsible for ensuring the following:

1.2.1 Cylinders will be properly secured at all times.

1.2.2 Cylinders, valves, hoses, regulators, connections, and torches will be inspected periodically and before each use for leaks, defects or damage.

1.2.3 Electrical arc welding equipment will be grounded in a manner where the grounding connection can be observed by the operator and the attendant.

### 1.3 Education and Training

1.3.1 Departments where workers' duties or job description include hot work will ascertain that these individuals have the necessary training and skill to perform these tasks.

1.3.2 Annual training sessions will be arranged and coordinated by the competent person.

### 1.4 Safety Department Responsibilities

The safety department is responsible for performing the following duties:

1.4.1 Maintain the list of individuals authorized to issue an HWP under Section 1.1.1.

1.4.2 Determine, or arrange for determination, the presence of flammable or combustible substance or residue under Section 1.1.12.

1.4.3 Coordinate annual training sessions under Section 1.3.2.

1.4.4 Conduct an audit and evaluation of the procedures contained in this policy annually.

*Section 21:*

# Ladder Safety

## PURPOSE

In accordance with 29 CFR 1926 Subpart X, the Company will not issue ladders that are deemed unsafe or fail to meet OSHA requirements. Additionally, employees shall not bring or use personal ladders that fail to meet the same OSHA requirements. Personal protective equipment shall be used at all times.

***DO NOT USE A LADDER ON COMPANY JOBSITES UNTIL PROPERLY TRAINED. CONTACT THE COMPETENT PERSON WITH ANY QUESTIONS.***

## GENERAL REQUIREMENTS

All employees shall be trained in the proper safety procedures and requirements when working on or around ladders. If any employee has a question regarding proper procedures, he or she should contact management before proceeding with the task in question.

A ladder or stairway must be provided at all work points of access where there is a break in elevation of 19 inches or more and no ramp, runway, or personnel hoist is provided.

Where there is only one point of access between levels, this point must be kept clear to permit free passage by workers. If free passage becomes restricted, a clear second point of access must be provided and used.

## LADDER REQUIREMENTS

- Confirm employer and worksite restrictions regarding ladders. Some prohibit use of wood and metal ladders entirely, other have “ladders last” policy.
- Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is positioned for use.
- Rungs, cleats, and steps of portable and fixed ladders must not be spaced less than 10 inches apart or more than 14 inches apart, measured along the ladder’s side rails.
- Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- Ladders shall not be used for any purpose other for that which they are intended. (E.g. A-frame or step ladders shall not be leaned against the wall and used.)
- To prevent slipping, rungs shall be knurled, dimpled, or coated with a slip-resistant surface.
- Ladders shall not be coated with any opaque covering, with the exception of identification or warning labels, which may be placed only on one face of a rail.
- When portable ladders are used for access to an upper landing surface, the side rails must extend at least three feet (usually three rungs) above the landing surface. The ladder must be secured and the extension must not deflect under a load that would cause the ladder to slip off its support.
- Ladders shall be maintained free of oil, grease, and other slipping hazards.

- Ladders shall not be loaded beyond the maximum intended load for which they were built.
- Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one quarter of the working length of the ladder.
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental movement.
- Ladders placed in areas such as passageways, doorways, or driveways, where they can be displaced by workplace activities or traffic, shall be secured to prevent accidental movement, or a barricade shall be used to keep traffic or activities away from the ladder.
- The area around the top and bottom of the ladder shall be kept clear at all times.
- Ladders shall not be moved, shifted, or extended while in use.
- Ladders shall have non-conductive side rails if they are used where the worker or ladder could contact exposed energized electrical equipment.
- Ladders shall be inspected daily by a competent person for visible defects on a periodic basis and after any incident that could affect their safe use.
- The worker shall face the ladder when ascending or descending.
- Each worker shall use at least one hand to grasp the ladder when moving up or down the ladder and maintain three points of contact.
- A worker on a ladder shall not carry any object or load that could cause the worker to lose balance and fall.
- Portable ladders with structural defects, such as broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components must immediately be marked defective, tagged with “Do Not Use” or similar language, and withdrawn from service until repaired.
- Fixed ladders shall be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of the climb is less than 24 feet but the length of the ladder is greater than 24 feet above lower levels.

## JOB-MADE LADDERS

All job-made or shop-made ladders shall conform to the standards set forth in 29 CFR 1926.1053. Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one eighth the working length of the ladder.

The requirements, as set forth in the standard, are as follows:

- Each self-supporting and non-self-supporting ladder shall be capable of supporting at least four times the maximum intended load, as measured in a downward vertical direction.
- Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.
- Rungs, cleats, and steps of portable ladders and fixed ladders shall be spaced not less than 10 inches apart nor more than 14 inches apart, as measured between center lines of the rungs, cleats, or steps. Rungs shall be cleated as an additional safety measure to add additional support to rungs.
- Wood used in construction of job-made ladders shall be free of knots, checks, and splits.

- Wood job-made ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is one eighth the working length of the ladder.
- Single rail ladders shall not be used.
- The minimum clear distance between side rails for all portable ladders shall be 11½ inches.
- The rungs of individual rung/step ladders shall be shaped such that employees' feet cannot slide off the end of the rungs.
- Ladders shall not be tied or fastened together to provide longer sections unless they are specifically designed for such use.

*Section 22:*

# Line of Fire

## INTRODUCTION

In accordance with section five (5) of the Occupational Safety and Health Act, employers are responsible to recognize, communicate, and mitigate known hazards in the workplace. Line-of-fire hazards are significant hazards that may arise in various scenarios and can result in significant injuries, including death.

Line-of-fire refers to personnel who are in harm's way by standing in the wrong place at the wrong time and then encountering some form of energy. Line-of-fire injuries occur when the path of a moving object or the release of hazardous substances intersects with an individual's body.

Line-of-fire injuries include but are not limited to:

- Hazards presented by gravity.
- Moving machinery and vehicles.
- Flying debris and projectiles.
- Automated equipment.
- Contact with stationary equipment and/or hazards.
- Unsafe behaviors.

Unrecognized hazards place employees in a danger zones that may result incidents. Line-of-fire injuries occur when the path of a moving object or the release of hazardous energy meets with a person's body. Three (3) primary categories of line-of-fire incidents are caught-in or between, struck-by, and released energy incidents.

## SCOPE

This program is designed to protect team members and contractors against workplace hazards and the risk of injury from line-of-fire hazards. The company is responsible to identify such risks and provide personnel with training on the exposure plan to mitigate such hazards.

## LEGAL REQUIREMENTS

This program meets all General Industry and Construction requirements. For General Industry 29 CFR § 1910.132 (general requirements), 1910.133 (eye and face protection), 1910.134 (respiratory protection), 1910.135 (head protection), 1910.136 (foot protection), 1910.137 (electrical protective gloves), 1910.138 (hand protection). For Construction 29 CFR § 1926.28 (construction general safety and health provisions), 1926.95 (criteria for PPE), 1926.96 (foot protection), 1926.100 (head protection), 1926.101 (hearing protection), 1926.102 (eye and face protection), 1926.103 (respiratory protection), 1926.104 (safety belts, lifelines, and lanyards).

29 CFR § 1910.212 (machinery and machine guarding), 1910.213 (woodworking machinery requirements), 1910.215 (abrasive wheel machinery), 1910.217 (mechanical power press), 1926.301 (hand tools), 1926.302 (power operated hand tools), 1926.303 (abrasive wheel and hand tools), 1926.304 (woodworking tools), 1926.1425 (keeping clear of load).

General Duty Clause Section OSH Act (5)(1)(a)(b).

## PREVENTION OF LINE OF FIRE INCIDENTS

Preventing line-of-fire incidents may be as simple as hazard recognition by the employee in the danger zone. An example would be stepping away from the end of foundation cable under tension to be out of the release area in the event the cable snaps. Other hazards and danger zones may require more complex consideration, actions, and engineering. Using any of the following hazard avoidance processes will prevent line-of-fire injuries.

## HIERARCHY OF CONTROLS

The hierarchy of controls is a method of identifying and ranking safeguards to protect workers from hazards. PPE shall be used in accordance with other control measures, but it should always be understood that PPE is the last means of protection from any hazardous situation. The Hierarchy of Controls are, in order of most effective to least effective):

1. Elimination: This is the most effective control. This is done through changing work procedures to eliminate the hazard(s) completely.

2. Substitution: The second-best way to control a hazard is to substitute something else in its place that would be non-hazardous or less hazardous to workers. For example, a non-toxic (or less toxic) chemical could be substituted for a hazardous one.

3. Engineering Controls: Engineering controls keep the hazard from reaching the worker. This could include methods such as using noise dampening technology to reduce noise levels; enclosing a chemical process in a Plexiglas glove box; using mechanical lifting devices; guarding for utilized tools; or using local exhaust ventilation that captures and carries away the contaminants before they can get in the breathing zone of workers.

4. Administrative Controls: Administrative controls involve changes in workplace policies and procedures. They can include such things as; warning alarms, labeling systems, reducing the time workers are exposed to a hazard, and training.

5. Personal Protective Equipment (PPE): Respirators, gloves, protective footwear, safety eyewear, hearing protection, safety vests, fall protection, etc.

## EXAMPLES OF LINE-OF-FIRE INCIDENTS

- Caught-In or Between: When an individual or a body part are caught between a moving object and one that is stationary. Such as a person being pinned against a wall as well as being caught in rotating equipment.

- Struck-By: Personnel being struck by a moving object such as a vehicle, or someone being injured by a dropped object from an elevated surface such as a suspended load.

- Released Energy: The release of hazardous energy that strikes personnel such as burning steam being released from a valve.

## BEHAVIORAL BASED SAFETY

In most cases the worst injuries come from activities we no longer perceived as being dangerous. In contrast, most people will take stronger safety measures while performing dangerous tasks to better protect them.

Usually, these activities that we no longer perceive as dangerous are routine tasks and we have become somewhat

desensitized to their dangers. This portion of the procedure can be utilized in coaching personnel and investigating incidents to identify if behavior was a negative factor to the incident.

These four (4) states of mind…

- Rushing

- Fatigue
- Frustration
- Complacency

Commonly leads to…

- Eyes not on task.
- Mind not on task.
- Being in or putting others in the line of fire.
- Loss of balance, traction, and grip.

Incident reduction techniques:

- Self-trigger on your state of mind so you do not make a critical error.
- Analyze your close calls to prevent future incidents.
- Look at others and identify their patterns for injury risk.
- Work on habits.

## RISK IDENTIFICATION

Risk Identification is best achieved through a job risk assessment. This involves breaking jobs or tasks into steps and identifying the hazards within each step. Consider implementing strategies in accordance with the Hierarchy of Controls to address Line-of-fire hazards.

Personnel should conduct a Risk Assessment before work begins to identify hazards and define specific counter measures to each hazard. Upon completion, the Risk Assessment shall be communicated to team that will be engaged in the specific job.

## EXPOSURE PLAN

To avoid line-of-fire hazards is to identify, eliminate, or control these hazards whenever possible by implementing the strategies within the Hierarchy of Controls. Each job will require planning to define specific exposures and the anticipated measures to mitigate them.

Below are some exposure control options to consider, but those planning should not limit themselves to these choices. These strategies are listed in order from most favorable to least in accordance with the hierarchy of controls.

1. Elimination
    a. Remove objects from elevated work areas that could drop onto personnel.
    b. Put equipment temporarily out of service that could cause a caught in between hazard.

2. Engineering controls
    a. Machine guards on moving equipment.
    b. Barriers to prevent personnel from going into dangerous areas.

3. Administrative controls
    a. Behavioral Based Safety Training.
    b. Conduct a risk assessment before each type of job is performed.
    c. Follow up a risk assessment with a daily or weekly Job Hazard Analysis (JHA) to keep personnel reminded of hazards.
    d. Use a spotter whenever there is line-of-fire potential that involves personnel and moving vehicles.

4. Personal protective equipment
    a. Head Protection: hard hat, welder helmet.
    b. Eye Protection: safety glasses, goggles, welder face shield.
    c. Body Protection: fire resistant clothing and apron.
    d. Hand Protection: gloves that are designed to protect from the specific hazard.
    e. Foot Protection: steel toe or composite safety shoes.

*Section 23:*

# Materials Handling, Storage, Use, and Disposal

Requirements of this section shall conform to 29 CFR 1926, Subpart H.

## RIGGING

Each rigging device shall be inspected daily and after any incident that the competent person deems may have damaged the rigging device. Any rigging device found to be defective shall be removed from service immediately.

Employees working on a site where rigging is necessary shall adhere to the following protocol:

- Meet the qualification requirements of a qualified rigger/qualified person.
- Know the proper use of chain falls, come-along winches, chokers, shackles, and clamps.
- Know the rated capacity for chain falls, come-along winches, chokers, shackles, and clamps.
- Never raise or lower a load over people.
- Use tag lines to control hoisted loads.
- Know the weight of the load and ensure the rated capacity of rigging equipment is not exceeded.

## LOAD LIMITS

In accordance with 29 CFR 1926.250(a)(2), maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be conspicuously posted in all storage areas, except for floor or slab on grade. Maximum safe loads shall not be exceeded.

Materials stored inside buildings under construction shall not be placed within 6 feet of any hoistway or inside floor openings, nor within 10 feet of an exterior wall which does not extend above the top of the material stored.

Aisles and passageways shall be kept clear to provide for the free and safe movement of material-handling equipment or employees. Areas shall be in good repair.

Materials shall not be stored on scaffolds or runways except for those needed for immediate operation.

Bricks shall not be stacked more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches for every foot in height.

Masonry blocks shall not be stacked higher than 6 feet.

## HOUSEKEEPING

In accordance with 29 CFR 1926.250(c), storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control shall be exercised when necessary.

Used lumber shall have all nails withdrawn before stacking.

*Section 24:*

# Pandemic Preparedness and Response

## INTRODUCTION

A pandemic is an outbreak of a disease that occurs in multiple countries and continents. Traits of the disease during a pandemic will include efficient human to human transmissibility, a high-case fatality rate, the absence of effective and available medical countermeasures, a population that is not widely immune, a respiratory mode of spread, and the ability to transmit the disease during incubation periods and/or the occurrence of mild illnesses would further enhance the spread.

The most serious pandemic was considered the Spanish Flu pandemic which occurred from 1918 to 1919. It was an influenza caused by a subtype (H1N1) of an orthomyxovirus (species Influenza A virus of the genus Influenza-virus A) and was responsible for about 500,000 deaths in the United States. Estimated deaths were between twenty million and forty million around the globe.

More recently the world has seen several pandemics; the Asian Flu from 1956-1958, Hong Kong Flu in 1968, the Human Immunodeficiency Virus (HIV) which may lead to AIDS from 1981-to the present, the severe acute respiratory syndrome (SARS) from 2002-2003, the Swine Flu (H1N1) from 2009-2010, and the Middle East Respiratory Syndrome (MERS) 2012-to the present. In 2019, a new disease known as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was identified in China. The disease it causes is called coronavirus disease 2019 (COVID-19). On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a worldwide pandemic.

## SCOPE

This procedure is applicable to all company personnel in each operating location. Any respirator use by personnel shall adhere to the company's respiratory protection requirements.

## EXPOSURE DYNAMICS

Saliva and mucous droplets (respiratory droplets) are heavier than air, which means gravity starts pulling them (and any viral particles they contain) towards the ground as soon as they leave the body. By the time the ill person walks out of a room, any droplets they may have emitted have likely already settled on the floor or nearby surfaces. An exposure opportunity in this situation would occur if the ill person were directly over other personnel or within a foot unless the ill person is expressive or talking in an elevated manner.

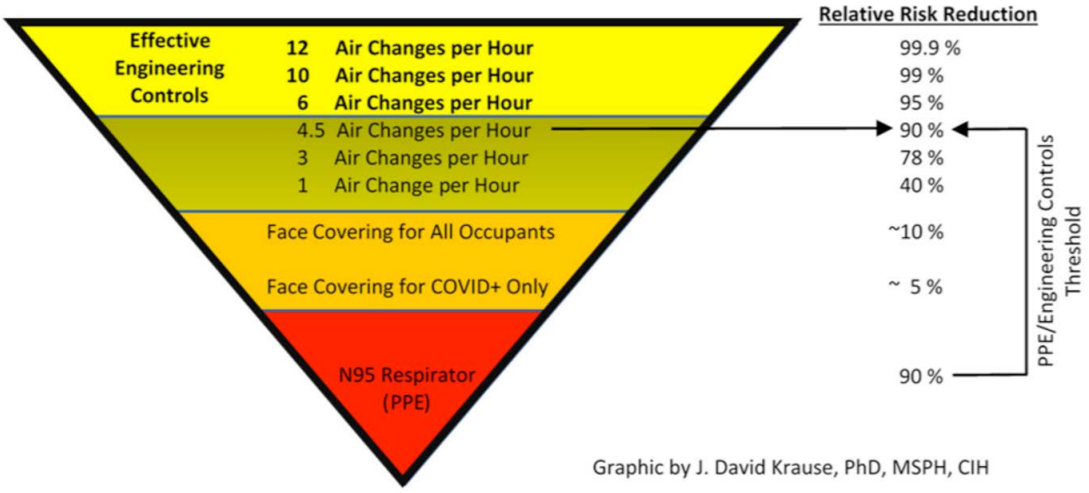
***Respiratory Droplets Exposure Dynamics***

| Act | Travel Distance | Droplets Produced |
|---|---|---|
| Sneezing | 23-27 Ft | 40,000 |
| Coughing | Up to 19 Ft | 3,000 |
| Talking (Elevated) | 1- 7 Ft | 3,000 after 30 minutes of talking. |
| Talking (Normal) | Up to 1 Ft | 3,000 after 30 minutes of talking. |

Aerosols form when smaller droplets evaporate faster than they fall to the ground, leaving nuclei measuring less than five microns in diameter. Without heavy liquids dragging them down, virus particles from these evaporated droplets can float through the air for a long duration of time. When a virus travels via aerosols, it creates exposure when well personnel enter a room where a contagious person (expressive in symptoms) has been, and the well personnel inhale the viral aerosols. This transmission via free-drifting aerosols is defined as an airborne disease.

The American Industrial Hygiene Association (AIHA) conducted a study in 2020 and found that over 90% protection is offered for an airborne disease through the engineering control of a building's HVAC system. The study found that six or more air changes per hour will generate enough ambient conflict to the viral aerosols, and will render between 95%-99.9% protection in a building from an airborne disease. IMAGE HERE (AIHA 2020 Study of Airborne Disease Protection)

***AIHA 2020 Study of Airborne Disease Protection***

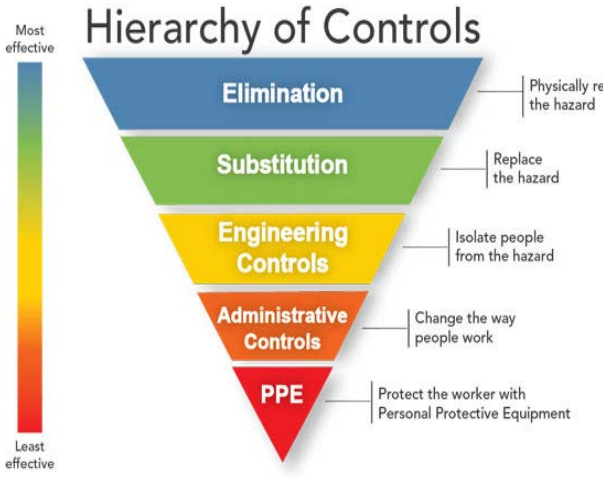



## EXPOSURE CONTROL

All exposure control efforts will use a long standing proven scientific system called the Hierarchy of Controls. This system was introduced by the National Safety Council (NSC) in 1950 to layer our exposure mitigation strategies. Not every control effort is as effective, and this system enables each control's prioritization based on its effectiveness.

In the inverted pyramid below, the more effective controls are on the large, top side of the pyramid, whereas the least effective controls are on the bottom. The human interaction with a control, while it is engaged with the risk, is a primary difference between the class of controls on the high end of the hierarchy and those at the low end.

In any compliance program, the most critical component of whether it will succeed or not is in fact human behavior. It is understood that behavior is the cause of 90% of roadway collisions, cyber-attacks, and workplace incidents. Human behavior as it relates to compliance or safety and health, is too unpredictable, which is why engineering control solutions are prioritized.



The risk to personnel depends on the activity that causes contact with an exposure and the duration of contact near an exposure point. The risk categories will be used to align with the exposure control plan.

| Risk Level | Work Activities |
|---|---|
| Critical | healthcare workers, paramedics, laboratory personnel, postmortem (morgue personnel), travel to infected areas |
| High | dentistry personnel, international travelers, medical transport workers, mortuary personnel |
| Medium | domestic travelers, school personnel, retail facilities, office workers, |
| Low | outdoor workers, working from home, no public contact jobs |

Control exposure using the hierarchy of controls as defined in the plan below:

| Control Category | Exposure Dynamic | Risk Category | Control |
|---|---|---|---|
| Engineering | Aerosols | All | 6-12 Air Changes Per Hour |
| Engineering | Aerosols | All | MERV 13 Air Filter |
| Engineering | Aerosols | Critical | UV-C System |
| Engineering | Aerosols | Critical | Negative Pressure System |
| Administrative | Droplets | All | Sanitation of Surfaces: Tables/Desks; Hard backed chairs; Doorknobs; Light switches; Remotes; Handles; Toilets; Sinks; Floors |
| Administrative | Droplets | All | Hygiene of Personnel: Wash hands and arms for 25 seconds with soap and warm water; Daily showers; Clean clothes each day at work. |
| Administrative | All | All | Sick Personnel Remain Home |
| Administrative | All | All | Have people coming in half time or stagger the work hours. Look at existing high-density areas and ask half of the staff to work on site certain days with virtual meetings. Stagger workdays and hours so only one out of two workspaces are occupied on any day or portion of day. Stagger start times to avoid bottlenecks at the entrance. |
| PPE | All | High/Critical | Respiratory Protection: Powered Air Purifying Respirator (PAPR); Reusable Respiratory with P100 Cartridges. |
| PPE | Droplets | High/Critical | Nitrile Gloves (one time use) |
| PPE | Droplets | High/Critical | Clothing Cover Gown (one time use) |

## RECORDKEEPING

Anytime there is an exposure or a case that has developed in the workplace, management or designated representatives shall investigate immediately. The purpose is to verify if it is a workplace exposure and to immediately protect all personnel in the specific location. The investigation is also intended to identify others who have been exposed, deficiencies in adhering to the exposure prevention plan, and determine if the exposure was work related. The investigation will determine the following:

- Determine if the case created a workplace exposure.
- Ascertain the infected employee.
- Determine area infection occurred.

- Establish if other personnel have been infected in the same area or task.
- The work area the employee occupied and determine active control measures in that area.
- Possible work activities that could have caused the exposure.
- Discover if they were in direct contact with other personnel during the previous forty-eight hours.
- Notify affected personnel who had direct contact but are not showing symptoms of need to quarantine and those who had direct contact and are showing symptoms of the requirement to isolate.
- Provide directives of testing.
- Review the site risk assessment to ensure proper controls are in place.
- Provide recommendations to correct and prevent any issues from resurfacing.

Employers are required to report work-related infection cases:

- Hospitalization—within 24 hours
- Death—within 8 hours

All work-related infection cases shall be recorded in the OSHA 300 log.

*Section 25:*

# Personal Protective Equipment

## PURPOSE

In accordance with 29 CFR 1926.28, this section is designed to aid in the evaluation and determination of proper personal protective equipment (PPE) when working onsite. Workplace conditions can vary dramatically throughout the course of a project and PPE requirements must be adapted to meet those challenges.

Failure to comply with the various PPE requirements may result in immediate termination of work activities, ejection from the worksite, or termination of employment. It will, at the least, result in a formal reprimand per the Company disciplinary policy contained in this book. Under no circumstances shall work continue without the use of proper PPE required for the job.

The Company will provide each employee with required personal protective equipment based on the hazards associated with the job and replacement equipment at reasonable intervals per the requirements under 29 CFR. Employees who intentionally damage, misplace, or lose equipment will be provided the required equipment to perform their jobs safely at the employee's expense.

The following requirements and guidelines, as with all provisions in this section, apply to all company employees, vendors, suppliers, and visitors:

1. When a hazard cannot adequately be controlled by means of engineering controls or administrative procedures, the use of PPE is required.

2. Personal protective equipment is considered a necessary defense against personal injury and shall be worn when required by workplace policy or the Company's management.

3. All company employees, vendors, and visitors are subject to the provisions of this section.

4. Employees must wear appropriate footwear for the work environment that meets or exceeds guidelines established in ASTM International Standards F-2412 and F-2413.

Types of available PPE include, but are not limited to, the following:

- Eye and face protection (safety glasses, goggles, face protection)
- Head protection (hard hats) — ANSI Z89.1-2014
- Foot protection (hard-sole shoes or boots)
- Clothing appropriate to the type of work being performed (long pants, sleeved shirts in high-visibility colors)
- Hand protection (gloves)
- Hearing protection (ear plugs, muffs)
- Respiratory protection appropriate to the type of work being performed

## EYE PROTECTION

Eye and face protection must meet the minimum requirements specified in ANSI/ISEA Z87.1- 2015. As per the

Company's policy, all employees will wear safety glasses for the complete duration of the following operations:

- Placing concrete
- Welding, burning, or cutting with torches
- Using abrasive wheels, portable grinders, saws, or files
- Chipping concrete, stone or metal
- Working with any materials subject to scaling, flaking or chipping
- Soldering, handling, or working with molten metal or hot compounds
- Handling or working with hazardous liquids, powders, or substances
- Drilling or working under dusty conditions
- Hammering or driving into material
- Waterproofing
- Working on energized switchboards
- Using explosive powder-actuated fastening or nailing tools
- Using compressed gas-actuated fastening or nailing tools
- Working with compressed air or other gases
- Working with dust generating operations, such as trenching operations
- Working in the immediate vicinity of any operation listed above

The following protocol will be used when required by the manufacturer of the tool:

1. Visitors shall abide by the same requirements for protective eyewear as site employees.

2. The use of contact lenses is prohibited in working environments where there is a potential for exposure to hazardous dust substances, flying dust, or light flashes. Contaminated contact lenses cannot be decontaminated and will expose the wearer continuously to the hazardous contaminant. This prohibition applies to all situations, including full-face respirators, nonprescription safety glasses, goggles, and face shields.

3. Face shields are available in a wide variety of types to protect the face and neck from flying particles. Face shields may also be used to provide anti-glare protection. While face shields are not to be used as primary eye protection, they will provide additional protection when used over basic eye protection.

## HAND PROTECTION (LEATHER GLOVES)

1. Hand protection must be worn any time the nature of work presents the potential for hand injury. Hand protection is intended to protect the hands from incidental contact and must not be relied upon as primary means of

protection.

2. Wearing the appropriate gloves is an important part of protecting against hand hazards. Hand protection must be worn for all demolition, manual material handling, and any work performed with or around metal studs. Hand protection should be worn when working with hot machinery, tar, knives, and certain hand tools (e.g., screw guns).

3. Prior to handling chemicals, a review of the current SDS shall be conducted to educate employees on the proper type of hand protection to be used (e.g., rubber, nitryl, Kevlar, etc.)

4. Care and maintenance should include, but not be limited to, the following:

    - Inspect gloves before each use for holes, tears, changes in texture such as softening or hardening of the material, wear and tear, or any other defect that may affect performance.

5. If any damage is found during the inspection, remove the glove from service. Do not work with materials that require gloves until a new glove is available to complete the task safely.

## FOOT PROTECTION

In accordance with 29 CFR 1910 and 1926, employer's hazard assessment will determine necessity for protective footwear. Footwear worn by employees must meet the current consensus standards published by ASTM, as incorporated by reference in the CFR. Under no circumstances will an employee be allowed on site wearing footwear constructed of canvas, sandals, thongs, flip-flops, or shoes with soft rubber soles. When a visitor not engaged in work arrives at the site, the competent person will assess the potential for injury and duration of the visit before granting access, contacting management if unsure. The preferred response is to reschedule the visit on the condition that the visitor wear proper footwear and correct PPE.

When working on steep or pitched inclines, refer to the material manufacturer's requirements for proper footwear to reduce slipping hazards and increase traction.

Each employee shall inspect his/her footwear prior to entering the worksite each day for signs of wear, tearing, or damage that will prevent the foot from being properly protected. Excessively worn and damaged footwear not capable of providing the required protection must be replaced at the employee's expense. The site competent person is responsible for evaluating and determining the need for replacement of footwear worn on the Company's worksites.

## HEAD PROTECTION

ANSI Z89.1-2014 requires particular information to be permanently printed inside each hard hat, including the date of manufacture. The longest amount of time a hat should be in service is four to five years from the date of manufacture, according to the manufacturer's guidelines. If the hat is not visibly damaged, the expiration date can be calculated by checking the date of manufacture. The Company recommends employees use a permanent marker to record the date they begin to use their hard hat. This date will likely differ from the date of manufacturer and may prove beneficial for inspection purposes.

Type One (I) hard hats are traditionally designed for top-only protection, while Type Two (II) hard hats are designed for lateral impact. Both types are tested for impact attenuation and penetration resistance. Type II helmet performance requirements include criteria for impact energy attenuation from impacts from the front, back, and sides, as well as the top; off-center penetration resistance; and chin strap retention.

There are three classifications of hard hats:

- **Class G (General):** Class G hard hats are proof-tested at 2,200 volts;
- **Class E (Electrical):** Class E hard hats are proof-tested at 20,000 volts;
- **Class C (Conductive):** This class provides no electrical insulation.

Employees and subcontractors will wear protective hard hats when directed by their employer and/or when exposures require head protection in accordance with CFR 1926.100(a) / ANSI 289.1-2014. In some cases, a worksite policy may dictate 100% hard hat use at all times by all employees on the worksite. Employees should consult the competent person if they have questions regarding this policy.

## CLOTHING

The competent person will decide the appropriate attire for yard and workplace operations. Clothing will be of a safe design for the task being performed. The Company requires long pants (no shorts or cut-offs) and a shirt with sleeves (t-shirt) to enter a Company-controlled jobsite.

## SAFETY VESTS

High visibility safety vests or clothing shall be worn when required in the workplace. For daytime work, employees may be required to wear a company approved shirt, vest, or jacket of high visibility material and is orange, lime, yellow, yellow-green, or a fluorescent version of these colors at all workplaces. At nighttime, similar outside garments shall be retroreflective. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors and shall be visible at a minimum distance of 1,000 feet. The retroreflective clothing shall be designed to clearly identify the wearer as a person and shall be worn on all workplaces. The competent person will determine the ANSI-approved class of vest required when working in the area of vehicle traffic. (Class 2 vehicle speed is below 50 MPH; Class 3 vehicle speed is above 50 MPH.)

Whenever a Company-approved shirt, vest, jacket, or other high visibility clothing becomes faded and is unsuitable as high-visibility clothing, the employee shall replace the faded clothing with proper attire that meets the above stated requirements.

## HEARING PROTECTION

In accordance with 29 CFR 1926.101, hearing protection will be used when operating tools and equipment as per the manufacturer's requirements or in the vicinity of the operation of tools or equipment requiring hearing protection. The Company will provide the hearing protection devices required for operation of Company-approved tools. Cotton balls are not an acceptable protective device. Employees will use approved hearing protection to include double protection (plugs and muffs) when use of ear plugs is not sufficient protection.

Employees will be provided with training on a recurring basis and shall be updated to maintain consistency with changes in the PPE and work processes. The Company will implement a hearing conservation program for employees exposed to sound levels 85dbA or greater. The Company has never had a sound level test exceed safe acceptable levels. However, monitoring procedures will be completed by Premier Risk Management when required. The Company has established that noise exposure is (and remains) at a safe level. Testing is completed as required by Premier Risk Management. No employee has exceeded these levels and Premier Risk Management will continue to monitor as required and in accordance with federal and state standards. As with all PPE, hearing protection, when required, is provided at no cost.

## LIFE VESTS

A Coast Guard-approved life vest will be worn whenever working over or near water in unsecured areas.

*Section 26:* ***See Attachment 17 "Powered Industrial Truck Daily Checklist"***

# Powered Industrial Trucks

Employees, subcontractors, venders, and any other person who operates a powered industrial truck on Company property and/or Company work environment will have completed training and instruction as described in Subpart N and possess a valid operator's authorization from their current employer.

Employees of the Company do not have the authorization to change, modify, or in any way alter a powered industrial truck. Employees shall take a powered industrial truck that fails inspection out of service and report the deficiencies to management immediately.

## PURPOSE

In accordance with the powered industrial truck standard found in 29 CFR 1910.178, the Company hereby designates the procedures in this plan to be followed in order to provide a safe working environment at the worksite and ensure the safe operation of the following equipment:

- Powered industrial trucks
- Powered pallet jacks
- Stackers
- Other material-handling equipment

All employees must successfully complete a training course before operating any type of equipment. Employee must then be recertified every three years.

## SUPERVISORY RESPONSIBILITIES

The Company's supervisor or designated representative is responsible for administering this program and complying with all federal, state and local regulations on powered industrial truck safety. The designee will maintain training records and provide initial certification and subsequent re-certification for powered industrial truck training. In addition, the designee will assess the driving skills of all employees authorized to operate material-handling equipment at our facility and workplaces.

Each supervisor will be responsible for ensuring only trained employees are allowed to operate material-handling equipment (powered industrial trucks).

## MAINTENANCE, FUELING AND REPAIR

1. All powered industrial trucks and material-handling equipment must be kept clean and free of excess dirt, oil, and grease.
2. Do not operate powered industrial truck or material-handling equipment in need of repair until repairs are completed. The equipment must be labeled or tagged: OUT OF SERVICE; DO NOT USE.
3. After repairs are completed, powered industrial trucks and material-handling equipment must be tested to assure safe operation.
4. Powered industrial trucks and material-handling equipment power must be turned off when refueling.

5. No fuel tanks will be filled while the engine is running.

6. Oil and fuel spilled on the ground during filling will be cleaned up immediately.

7. Equipment will be provided to safely flush spilled fuel and battery acid in accordance with the SDS.

8. Eyewash and hand washing equipment will be maintained in all fueling areas in accordance with the SDS.

9. The following items are PROHIBITED within 50 feet of all fueling areas:

    - Eating
    - Smoking
    - Open flames
    - Sparks

## OPERATOR SAFETY AND TRAINING

1. Only trained operators are authorized to operate powered industrial trucks and material-handling equipment. Operators are only authorized to operate the type of equipment on which they have been trained.

2. Powered industrial truck and material-handling equipment operators must:

    - Use seatbelt at all times.
    - Comply with all federal, state, local, and company rules and regulation for operating equipment.
    - Inspect equipment at the beginning of each new shift. The “Powered Industrial Truck Daily Checklist” (found on Page 210) must be completed.
    - Perform a daily walk around the work environment to identify and document any new and existing hazards.
    - Immediately report any maintenance problems or malfunctions to their competent person.

3. All powered industrial trucks and material-handling equipment checklists can be obtained from the competent person. (Contact the business office for additional copies.)

4. Unauthorized personnel are not permitted to ride on a powered industrial truck or other material-handling equipment. A passenger seat, installed by the manufacturer, must be provided in order for someone other than the operator to ride on the equipment.

5. In hazardous locations, only specially approved powered industrial trucks and material-handling equipment will be used.

6. An overhead guard must be used to protect the operator from falling objects unless operating conditions do not permit doing so.

7. When powered industrial trucks and material-handling equipment are left unattended, special precautions must be taken. The following scenarios clarify which situations qualify as “unattended” and what must be done in each case:

    - If the operator is 25 feet (or more) away or does not have a clear view of the powered industrial truck

or material-handling equipment, this equipment is considered unattended and the following precautionary actions are required:

» Put the equipment in neutral

» Set the emergency brake

» Turn the power off

» Block the wheels (if equipment is parked on an incline)

» Lower forks to the ground level

- If the equipment is within 25 feet and in clear view of the operator, but the operator leaves the seat of the powered industrial truck or material-handling equipment, this equipment is still considered unattended and the following precautionary actions are required:

  » Put the equipment in neutral

  » Set the emergency brake

  » Lower forks to the ground level

8. Employee training will consist of on-the-job and classroom training using either company-owned or leased equipment, followed by a written examination. Employees will receive additional training as equipment and conditions change.

9. Operators will be selected based on their knowledge of the equipment, skill in handling the equipment, and their ability to recognize hazards.

## GENERAL RULES OF EQUIPMENT OPERATION

1. No employee will be lifted by the powered industrial truck or other material-handling equipment unless a properly constructed safety platform meeting manufacturer's specification for the intended use is firmly secured to the lifting carriage or forks. The operator should remain at the controls at all times while an employee is being lifted.

2. Powered industrial trucks or material-handling equipment will be operated at a reasonable and prudent speed at all times that shall allow for safe stopping.

3. When more than one powered industrial truck or piece of material-handling equipment is being operated, at least three truck lengths will be maintained between pieces of equipment.

4. Powered industrial trucks and other material-handling equipment will be kept under control at all times.

5. The operator will keep a clear view of the path of travel. At corners or when vision is obscured, the operator will slow down and sound the horn.

6. Only stable and safely arranged loads within the powered industrial truck's or material-handling equipment's rated capacity will be handled.

7. If a load obstructs or blocks the operator's view, the powered industrial truck or material-handling equipment will be driven in reverse.

8. Loaded powered industrial trucks and material-handling equipment will be driven with the load upgrade when traveling on an ascending or descending surface of more than a 10% grade.

9. When powered industrial truck or material-handling equipment is used to remove materials from truck trailers, employees must do the following:

- Set the brakes on the trailer.
- Place wheel chocks under the wheels.

10. Dock boards or bridges will be properly secured before powered industrial trucks and material-handling equipment are driven over them.

11. Seatbelts will be used at all times while operating a powered industrial truck.

*Section 27:*

# Respiratory Protection

*See "Specified Exposure Control Methods" in Attachment 18 "Respiratory Protection Program"*

In accordance with OSHA's construction silica regulation, respirable crystalline silica (RCS), the Company has developed and implemented a respiratory protection program designed to protect employees from identifiable exposures in the work environment. The Company has adopted safe work practices for the use of respirators that include, but are not limited to, respirator selection, training, use, storage, cleaning, and physician evaluation. This program also serves to help the company and its employees comply with Occupational Safety and Health Administration (OSHA) respiratory protection requirements found in 29 CFR 1910.134.

## ASSIGNMENT OF RESPONSIBILITY

### Employer:

The Company will provide respirators to employees when work-related tasks may expose them to chemicals, dusts, mists, or other hazards not abated through engineering controls. JHAs (Job Hazard Analysis), SDSs (safety data sheets), and product labels will be reviewed to identify potential exposures. Supervisors will then select appropriate respirators suitable for employees' work-related exposures. Any expense associated with training, medical evaluations, and respiratory protection equipment will be the responsibility of the Company.

### Program Administration:

The Company will assign a program administrator to assist in the implementation of the Company's respiratory protection plan. Duties of the program administrator include the following:

- Identifying work processes that require the use of respirators
- Routine evaluation of potential exposures
- Selecting Company-provided respirators
- Monitoring employee behaviors to ensure compliance with Company directives
- Scheduling training
- Ensuring proper storage and maintenance of respiratory protection equipment
- Scheduling and/or conducting qualitative fit-testing
- Administering the medical surveillance program
- Retention and maintenance of all documentation required by the program
- Routine review of the Company written program, as needed

### Supervisors:

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include the following:

- Ensuring employees under their supervision (including new hires) receive appropriate training, fit-testing, and annual medical evaluation prior to entering a work environment requiring use of a respirator
- Ensuring the availability of appropriate respirators and/or accessories
- Awareness and/or enforcement of proper respiratory protection use
- Ensuring respirators are properly cleaned, maintained, and stored in accordance with manufacturer's instructions
- Ensuring respirators fit well and do not cause discomfort
- Continually monitoring work areas to identify new respiratory hazards
- Reporting engineering, respirator, or behavioral concerns to the program administrator

### Employees:

Each employee is responsible for the proper use of Company-provided respirators. Responsibilities include the following:

- Care for and maintain respirators in accordance with manufacturer's instructions.
- Inform supervisors immediately if their respirator no longer fits well and/or they are experiencing complications with its proper use.
- Inform their supervisor of any respiratory hazards that they feel are not adequately addressed.
- Use the respiratory protection in accordance with the manufacturer's instructions and the training provided.

## APPLICABILITY

This program applies to all employees who are required to wear respirators. Additionally, any employee who voluntarily wears a respirator when not required is subject to the same compliance provisions as those employees who are issued respirators by the Company.

Employees who voluntarily wear dust and/or nuisance masks are not subject to the provisions of this plan. This applies only to dust/nuisance masks, not respirators.

## PROGRAM

### Hazard Assessment and Respirator Selection

Program administrators will review SDS information, manufacturers' labels, and industry-specific data and consult (when necessary) third-party service providers to determine potential exposures in the work environment. Respirators will be selected based on identifiable exposures in accordance with the manufacturer's directives and the OSHA Respiratory Protection Standard 29 CFR 1910.134. Exposure evaluation will be completed to identify work processes and/or work areas where employees may be exposed to airborne contaminants. The exposure evaluation will include the following:

- Identification of all known chemicals used in the work environment.
- Review of work processes to determine potential exposures. The review (JHA) can be completed by the program administrator and/or their designated and qualified representative

- Routine review of identified exposures for continuous improvement opportunities relative to product selection, training deficiencies and or engineering improvement.

The proper type of respirator for identified exposures will be selected in accordance with the manufacturer's instructions. A list of employees and Company-provided respirators will be maintained by the program administrator. This list will include the employee's name, their assigned work area, model and type of respirator, type of filter media, and date of issue.

## Program Maintenance

The program administrator will routinely evaluate the respiratory protection program to identify opportunities for improvement. When notified (by employees) of potential deficiencies, the program administrator and/or their designated and qualified representative will evaluate reported exposures and address all issues immediately. The program administrator will then communicate any necessary changes to the respiratory protection plan to all employees who may be directly and/or indirectly impacted by changes to the plan.

## Training

The program administrator and/or their designated qualified representative will provide training for all employees who will be required to wear a respirator. This training will be provided prior to allowing employees to work in affected areas.

The training course will cover the following topics:

- Location and content of the Company's respiratory protection program
- Familiarization of 29 CFR 1910.134
- Identity of potential exposures in the work environment
- Selection of the appropriate respirator and its design limitations
- Medical evaluation process, fit-testing, and seal check
- Storage, maintenance, and cleaning procedures for respirator
- Personal accountability for proper use of Company-supplied respirator

Employees will be retrained annually or as determined necessary by the program administrator. Employees must demonstrate training comprehension through hands-on exercises and a written test. Training documentation demonstrating compliance with Company directives will be maintained by the program administrator.

## NIOSH Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while the respirator is in use.

## Voluntary Respirator Use

The program administrator shall authorize voluntary use of respiratory protective equipment as requested by all other workers on a case-by-case basis, depending on specific workplace conditions and the results of medical evaluations. The program administrator will provide all employees who voluntarily choose to wear the above

respirators with a copy of CFR 1910 Appendix D.

Employees who elect to voluntarily use a respirator must comply with the same provisions as those employees who are issued respirators by the Company.

## Medical Evaluation

Employees who are required to and/or voluntarily wear respirators must pass a medical exam provided by the Company before being permitted to wear a respirator in the work environment. Employees are not permitted to wear respirators until a physician has determined they are medically able to do so. Any employee refusing medical evaluation will not be allowed to wear a respirator. Medical evaluation procedures are as follows:

- All employees must complete the medical evaluation questionnaire for a licensed medical physician to review. The program administrator will make the questionnaire available to all employees requiring medical evaluations. When requested, and to the extent feasible, the Company will assist employees in completing the questionnaire.

- The Company will utilize a PDF fillable form digitally deliverable to the evaluating physician for review. In accordance with DOL directives, the time needed for employees to complete the medical questionnaire is compensable. Information provided shall be protected in accordance with the Health Insurance Portability and Accountability Act.

- Follow-up medical exams will be provided to employees as deemed necessary by the evaluating physician. Employees are allowed to consult with the physician about their medical evaluation, if they so request.

- The program administrator shall provide the evaluating physician with a copy of this program and a list of known exposures in the work environment. The physician will need to know the following:
  - » assigned work environment
  - » selected respirator model and type
  - » anticipated time employee may be required to wear the respirator
  - » anticipated physical work load (light, moderate or heavy)
  - » identifiable temperature and humidity extremes
  - » any additional protective clothing required

After an employee has received clearance to wear a respirator, additional medical evaluations will be provided under the following circumstances:

- The employee reports signs and/or symptoms related to their ability to use the respirator, such as shortness of breath, dizziness, chest pains, or wheezing.

- The evaluating physician or supervisor informs the program administrator that the employee needs to be reevaluated.

- Information found during the implementation of this program, including observations made during the fit-testing and program evaluation, indicates a need for reevaluation.

- A change occurs in workplace conditions potentially resulting in an increased physiological burden on the employee.

The program administrator will maintain a list of all Company employees who are included in medical surveillance.

All examinations and questionnaires will remain confidential and only those Company managers with a “need-to-

know" will be provided limited information directly associated with employee safety. The program administrator will retain the physician's written recommendations regarding each employee's medical authorization to wear a respirator.

## Fit-testing

Employees who will be provided a respirator and/or elect to voluntarily wear a respirator will be fit tested prior to entering the work environment and annually thereafter for the duration of their employment. Employees will be fit tested with the make, model, and size of the respirator they will actually wear.

## General Respirator Use Procedures

Employees will use their respirators only in accordance with the manufacturer's use instructions and the training provided by the Company.

All employees will complete a user seal check prior to each use. Employees will complete these seal checks in accordance with the manufacturer's instructions. Seal check tests include the following procedures:

**Positive pressure test:** This test is performed by closing off the exhalation valve manually and exhaling into the respirator. If pressure can be built up inside the respirator without air leaking between the seal and the face of the wearer, a proper seal has been obtained.

**Negative pressure test:** This test is performed by closing of the inlet openings of the respirator cartridge with the palm of the hand. Some respirators may require the removal of the filter assembly; consult the manufacturer's instructions. Inhale gently to produce a vacuum within the respirator. Hold the breath for a minimum of ten seconds; if the vacuum remains, the respirator is properly fit.

Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures that would prevent a proper seal. Employees are not permitted to wear headphones, jewelry, or other items that may interfere with the seal between the face and the face piece. Consult the manufacturer's instruction for use.

Before and after each use of a respirator, employees are required to inspect the respirator for general condition, including, but not limited to, face piece, headbands, valves, filter holders, and filters. Conditions impacting the proper function of the respirator must be reported to the supervisor or program administrator immediately. Consult the manufacturer's instruction for use.

## Cartridge Change Schedules

Respirator cartridges will be replaced in accordance with the manufacturer's use instructions. The program administrator or supervisor may elect more frequent changes if they deem conditions warrant additional maintenance.

## Cleaning

A respirator cleaning station will be established and respirators will be cleaned in accordance with the manufacturer's use instructions. Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, not to exceed the manufacturer's use instructions.

The program administrator will ensure an adequate supply of appropriate cleaning and disinfection materials are available for employee use. Employees will notify the supervisor or program administrator when cleaning supplies are low so they can be replenished.

## Disposable Respirators

Disposable respirators will be used in accordance with the manufacturer's instructions and discarded when they reach their use limitations. Disposable respirators will not be shared by employees.

## Maintenance

Respirators will be maintained in accordance with manufacturer's instructions at all times to ensure they function properly and protect employees adequately. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by the manufacturer. All respirators shall be inspected routinely before and after each use.

## Storage

After inspection, cleaning, and necessary repairs, respirators shall be stored appropriately to protect against dust, sunlight, heat, extreme cold, excessive moisture, and damaging chemicals.

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect their own respirator in accordance with the manufacturer's recommendations. Respirators will be packed or stored with the face piece and exhalation valves resting in a "near normal" position.

The program administrator will maintain an adequate supply of respirators and respirator components in their original manufacturer's packaging and make them available to employees as needed.

## Respirator Malfunctions and Defects

Respirators identified as defective or having defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, they are to report the defect to the supervisor and/or program administrator immediately. Defective respirators will be removed from service immediately.

When a respirator is taken out of service, the respirator will be tagged "out of service" and the employee will be given a replacement of similar make, model, and size. All tagged-out respirators will be secured from incidental use under the direct control of the supervisor and/or program administrator.

## Program Evaluation

The program administrator and/or their qualified designated representative will complete periodic evaluations of the work environment to ensure the provisions of this program are being implemented. These evaluations will include regular consultations with employees who use respirators, site inspections, air monitoring (as required), and a review of all documentation.

Identified deficiencies will be documented and reviewed with the program administrator. Action plans to address all deficiencies will be implemented and include responsible party and anticipated date of completion.

## Documentation and Recordkeeping

All employees will have access to the Company's respiratory protection program and participate in the medical evaluation, training, and fit-testing procedures before being introduced into the work environment.

Documentation of medical clearance, training and fit-testing will be maintained by the program administrator. These records will be audited routinely and updated to maintain compliance with Company directives.

## Silica Exposure Control

In accordance with OSHA's construction respirable cristalline silica (RCS) regulation, the Company has developed the following silica exposure control plan. Based on objective data from industry-wide surveys, the Company is not aware of any actionable exposures, relative to our work processes, above the action level of 25 µg/m3 (micrograms of silica per cubic meter of air) over an averaged eight-hour shift.

The Company is committed to the protection of employees from exposures in work environments that could exceed the prescribed PEL of 50 µg/m3 averaged over an eight-hour work shift. The intent of this addendum to the Company's respiratory protection plan is to raise awareness of potential respirable cristalline silica exposures in the work environment and provide engineering solutions along with PPE requirements for those tasks where employees could be exposed.

## Description of Tasks

Following are examples of specific tasks where employees could experience exposure to silica, quartz, or sand (not necessarily RCS). These tasks were identified based on information found in the manufacturer's safety data sheets (SDSs) for products being used or installed, as well as company and industry sampling of commonly encountered building products.

- Cutting of sheetrock / drywall products
- Sanding of joint compound
- Mixing compound / hot mud
- Chalk line layout / "snapping lines"
- Drilling or screwing into concrete, masonry, or mortar for installation, fasteners, etc.
- Clean-up and disposal

The Company will routinely review work processes and revise the list of specific tasks to properly describe work processes that may involve silica and could result in potential exposure to RCS. These reviews will use information from recognized industry professionals, objective data from industry-wide surveys, verifiable municipal information, and applicable third-party research publications to determine additional sources of RCS exposure that were not initially identified.

Prior to the start of any project, the Company will complete a JHA to identify all work processes with the potential to create airborne silica exposures. The JHA will include identifiable exposures to airborne silica produced by sources not under the direct control of the Company. All identifiable exposures will be assigned an engineering control and/or PPE to abate the exposure or maintain the exposure level below the 50 µg/m3 averaged over an eight-hour work shift.

## Limiting Employee Exposures to RCS

The Company will not expose workers to harmful levels of RCS, including categories of tasks described in Table 1 of 29 CFR §1926.1153(c)(1). When employees are using hand-held power tools as described in 29 CFR §1926.1153(c)(1)(ii) and (c)(1)(xi), respectively, employees will follow the engineering and work practice control methods or wear the required respiratory protection described in each provision as applicable unless such controls are not feasible.

## Methods of Compliance

The Company will use engineering and work practice controls to maintain RCS below the 50 µg/m3 averaged over an eight-hour work shift. Where the Company can demonstrate that engineering controls are not feasible, and work practice controls are not sufficient to reduce worker exposure at or below the PEL, they will still be used to reduce worker exposure to the lowest feasible level, supplemented with the use of respiratory protection in accordance with the Company's respiratory protection plan.

## Housekeeping Measures

Compressed air will not be used to clean employee clothing, equipment, or work area if the process will result in airborne RCS. The supervisor will determine if no other method is feasible for these processes and make sure those employees who could be exposed are utilizing respirators during these work processes. Compressed air for these purposes must be limited to 30 PSI.

The use of leaf blowers, dry sweeping, or brushing produces airborne RCS and will be avoided. The use of sweeping compounds and/or HEPA-filtered vacuums will be utilized to safely clean work areas.

Leaf or debris blowers may be required to clean surfaces if wet sweeping or HEPA-filtered vacuuming is not feasible. The supervisor will determine feasibility based on one or more of the following criteria:

- Slip, trip, or fall hazards are created by wet surfaces
- Slip, trip, or fall hazards are created by equipment power cords or hoses
- Permanent damage to property would result from such action
- Water intrusion may damage other building elements

In instances where wet sweeping or HEPA-filtered vacuuming is determined to be infeasible, employees will wear disposable particulate respirators (filtering face pieces or dust masks) with a minimum assigned protection factor of 10 (APF 10) to reduce or eliminate potential exposure to RCS. The filtering face piece must be worn during the cleaning operation and for such time thereafter until the dust cloud dissipates.

## Procedures to Restrict Access to RCS Work Areas

In work environments where other employees and or the general public could be exposed to RCS, employees will take the following steps to limit exposure:

- In work environments with multiple trades, the work area will be flagged with warning lines and high-visibility signage will be posted stating, "Do Not Enter; POTENTIAL RCS EXPOSURE".
- Only those employees needed to complete the assigned task will be permitted in that specific area.

## Designation of Supervisors

The Company will designate an RCS plan administrator who is identified in the Company-referenced "Personnel and Agent Contacts" section of this book. Additionally, the Company will designate supervisors who have knowledge of the hazards related to potential RCS exposures and the control methods that will be used to control those exposures.

Supervisors will routinely inspect work environments to ensure proper implementation of the Company's RCS exposure control plan. The supervisor will note deficiencies and take prompt corrective action to abate any

identifiable exposures. All employees have the authority to stop work if they identify an unsafe condition including potential exposure to airborne RCS.

If the supervisor identifies potential exposures to RCS resulting from a work process not under their direct control, they will immediately notify Company managers to determine the necessity of action to protect exposed employees.

## Description of Company RCS Worker Training and Information

Potential exposure to RCS will be included in the Company's GHS / Haz Com training in accordance with 29 CFR §1910.1200. Newly hired employees will not be exposed to RCA before completing all required Company training. Training will include the following subjects:

- Specific health hazards associated with RCS
- Work-related tasks that could result in RCS exposure
- Company-specific engineering, abatement procedures and/or PPE
- Identity of RCA administrator
- Information on the voluntary medical surveillance program

## Description of Medical Surveillance for RCS Exposures

The Company will make medical surveillance available at no cost to any employee who wears a respirator for 30 days or more per year. Medical exams will be conducted by a physician or other licensed health care professional (PLHCP) in accordance with 29 CFR §1926.1153(b).

A baseline medical examination will be made available to employees within 30 days after an initial assignment unless the employee has a verifiable examination within the past three years. Examinations will include the following:

- A medical work history with emphasis on past, present, and anticipated exposures to RCS, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease; history of tuberculosis; and smoking status and history
- A physical examination with special emphasis on the respiratory system
- A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration either recorded on film [no less than 14 x 17 inches and no more than 16 x 17 inches] or digital radiography systems), interpreted and classified according to the International Labor Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader
- A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course
- Testing for latent tuberculosis infection
- Any other tests deemed appropriate by the PLHCP

Examinations will be made available, at no cost, for employees who request them. Examinations can be requested every three years or as recommended by treating physicians and/or the PLHCP for affected employees. If there is a medical determination that the employee needs to see a specialist, the Company will make provisions for

compliance with the medical professional's recommendations.

## Documentation and Recordkeeping

All employees will have access to the Company's respiratory protection plan and silica control and exposure plan. Employees will participate in the medical evaluation, training, and fit-testing procedures before being introduced into the work environment.

Documentation of medical clearance, training, and fit-testing will be maintained by the program administrator. These records will be routinely audited and updated to maintain compliance with Company directives.

If the Company determines air testing is needed, a qualified third party will be retained to complete these tests. Records of these evaluations will be maintained for a period of 30 years from the date of the record's initial creation. The initial record will include:

- Date of the measurement for each RCS sample taken
- Work process being analyzed
- Sampling and analytical methods used
- Duration and results of the samples taken
- Identity of the laboratory that completed the analysis
- Description of any PPE worn by employees who were monitored
- Name, position, and social security number of employees who participated in sampling

## TOXIC AND HAZARDOUS SUBSTANCES, SUBPART ZS

In accordance with 29 CFR Subpart Z, this section is designed to aid in the evaluation and determination of toxic and hazardous substances onsite. Workplace conditions can vary dramatically throughout the course of a project. Employees must adapt to workplace conditions in order to meet the challenges they present.

Failure to comply with the hazardous substance requirements may result in immediate termination of work activities, ejection from the worksite, or termination of employment. It will, at least, result in a formal reprimand per the Company disciplinary policy contained in this book. Under no circumstances shall work continue without appropriate precautions for the situation.

Subcontractors shall develop a site-specific safety plan which at least meets the minimum requirements for testing, air-monitoring, medical evaluation and monitoring, PPE, demolition and removal, and housekeeping procedures.

Subcontractors dealing with hazardous or toxic substances shall at least meet the minimum requirements for medical evaluation, atmospheric testing, engineering controls, and appropriate PPE, as required in 29 CFR 1926, Subpart Z.

## Asbestos

Each employer who has a workplace or work operation where exposure monitoring is required under this section shall ensure a qualified person performs monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed.  A qualified person as deemed by OSHA and EPA is required.

Employees are required to use protective clothing — such as whole-body clothing, head coverings, gloves, and foot coverings — any time they are exposed to asbestos exceeding the time-weighted average of 1.0 fiber per cubic centimeter of air, as averaged over a sampling period of 30 minutes, as determined by the method prescribed in Appendix A 29 CFR 1926.1101.

If employees are required to wear supplied-air respirators operated in pressure-demand mode, daily monitoring may be suspended.

The Company, or any of its subcontractors, shall institute a medical monitoring program that complies with 29 CFR 1926.1101.

The physician on record shall conduct a physical examination of the pulmonary and gastrointestinal systems, including a standard film or digital posterior-anterior chest x-ray at his or her discretion.

The medical questionnaire in Appendix D to 1926.1101 shall be administered to all employees who are exposed to asbestos above the permissible exposure limit.

On multi-employer worksites, the employer performing work requiring the establishment of a regulated area to abate asbestos shall inform other employers onsite of the nature of the employer's work with asbestos, the existence of and requirements pertaining to regulated areas, and the measures taken to ensure that employees of such other employers are not exposed to asbestos.

*Section 28:*

# Scaffolding

## PURPOSE

It is the mission of the Company to provide a safe and healthful work environment for all workers in the workplace and comply with all requirements and/or intent of federal and state rules and regulations.

Employees and subcontractors on Company worksites will allow only trained and qualified individuals to engage in work activities associated with scaffold. They will be trained on the hazards of the worksite prior to commencing work. If an employee has any questions, they must — *before beginning any work* — obtain clarification from a member of management, including, but not limited to, a supervisor, foreman, superintendent, or their competent person.

In accordance with the General Duty Clause Sec. 5. (a) The Company is responsible to provide each employee a safe and healthy place to work that is free of “recognizable” hazards. Additionally, (b) each employee shall comply with occupational safety and health standards, all rules, regulations, and orders pursuant to the Act which are applicable to his/hers own actions and conduct.

At no time will any employee alter, modify, or in any way change an established scaffold system unless under the direct supervision of a qualified and authorized competent person.

## APPLICABILITY

Scaffolding has a variety of applications. It is used in new construction, alteration, routine maintenance, renovation, painting, repairing, and removal activities. Scaffolding provides employees safe access to work locations, level and stable working platforms, and temporary storage for tools and materials for performing immediate tasks. Scaffolding incidents mainly involve personnel falls and falling materials caused by equipment failure or unsafe acts committed by individuals. Additionally, scaffolding overloading is a frequent singular cause of major scaffold failure.

## POLICY

Scaffolds shall be erected, moved, dismantled, or altered only under the supervision of a competent person and have guardrails and, when required, toeboards installed. When scaffolding hazards cannot be eliminated, engineering practices, administrative practices, safe work practices, personal protective equipment (PPE), and additional training regarding scaffolds will be implemented. These measures will be implemented to minimize those hazards and to ensure the safety of employees and the public.

## RESPONSIBILITIES

It is the responsibility of each employee and subcontractor to ensure implementation of safe work practices when working on scaffolds. It is also the responsibility of each employee and subcontractor to immediately report any unsafe act or condition to his or her supervisor.

## DEFINITIONS

**Brace:** A tie that holds one scaffold member in a fixed position with respect to another member. Brace also means a rigid type of connection holding a scaffold to a building or structure.

**Coupler:** A device for locking together the component tubes of a tube and coupler scaffold.

**Harness:** A design of straps which is secured about the employee in a manner to distribute the arresting forces over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.

**Hoist:** A mechanical device to raise or lower a suspended scaffold. It can be mechanically powered or manually operated.

**Maximum intended load:** The total load of all employees, equipment, tools, materials, wind, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

**Mechanically powered hoist:** A hoist which is powered by non-human, mechanical energy.

**Outriggers:** The structural member of a supported scaffold used to increase the base width of a scaffold in order to provide greater stability for the scaffold.

**Platform:** The horizontal working surface of a scaffold.

**Scaffold:** Any temporary elevated or suspended platform and its supporting structure used for supporting employees, materials, or both, except this term does not include crane or derrick-suspended personnel platforms.

## TRAINING

All affected employees will be trained on the particular types of scaffolds which they are to use. Training should focus on proper erection, handling, use, inspection, and care of the scaffolds. Training must also include the installation of fall protection, guardrails, and the proper use and care of fall arrest equipment. This training will be accomplished prior to any employee entering the worksite. Retraining will be done when job conditions change. Periodic refresher training shall be done at the discretion of the Company and/or subcontractor's competent person.

The Company will designate a "competent person(s)" able to demonstrate their knowledge of the rules as defined in 29 CFR 1926 Subpart L and will have the ability to recognize hazards and the authority to take corrective action. The competent person for the Company and any subcontractor will be on site when their employees are utilizing the scaffold unit.

## SAFE SCAFFOLD ERECTION

Only authorized companies will assemble, erect, modify, move, nor dismantle scaffold on any worksite. These activities are performed by subcontractors and/or other qualified entities. Scaffold systems that are in use on Company worksites will be maintained in accordance with 29 CFR Part 1926 Subpart L and inspected routinely prior to employees engaging in work activities. Copies of inspection reports and all corrective actions will be maintained on location and made available for review upon request.

## BASIC SAFETY REQUIREMENTS FOR SCAFFOLDS

- The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.
- Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor.
- Guardrails will be installed with the top rail not less than 36 inches or more than approximately 42 inches high. Mid-rails will be installed half the distance between the working platform and the top rail.
- Scaffolds and their components must be capable of supporting without failure at least 4 times the maximum intended load.
- Any scaffold, including accessories such as braces, brackets, trusses, screw legs, ladders, couplers, etc.,

damaged or weakened from any cause must be repaired or replaced immediately and not be used until repairs have been completed.

- All planking must be Scaffold Grades, or equivalent, as recognized by approved grading rules for the species of wood used. Platforms will not deflect more than 1/60th of the span when loaded.
- All planking or platforms must be overlapped (minimum 12 inches) or secured from movement.
- An access ladder or equivalent safe access must be provided.
- Scaffold plank must extend over their end supports not less than 6 inches or more than 18 inches.
- The poles, legs, or uprights of scaffolds must be plumb and securely and rigidly braced to prevent swaying and displacement.
- In addition to wearing hard hats, each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy, or massive to be contained or deflected by any of the above-listed measures, the employer shall place such potential falling objects away from the edge of the surface from which they could fall and secure them as necessary to prevent their falling.
- Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following precautions will be implemented:
  - » A controlled access zone will be established below the entire scaffold system and employees shall not enter the hazard area; *or*
  - » Toeboards will be utilized along the edge of platforms more than 10 feet above lower levels.
  - » Where tools, materials, or equipment exceed the height of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail system shall be erected for a distance sufficient to protect employees below.
  - » A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over employees below. Canopies must meet the minimum criteria established by OSHA.
- Slippery conditions on scaffolds shall be eliminated immediately after they occur.
- Scaffolds shall not be used during high wind and storms.
- Loose materials, debris, and/or tools shall not be accumulated to cause a hazard.
- Scaffold components shall not be mixed or forced to fit which may reduce design strength.
- Scaffolds and components shall be inspected at the erection location. Scaffolds shall be inspected before each work shift, after changing weather conditions, or after prolonged work interruptions.
- Tube and coupler scaffolds shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

## SPECIAL CONSIDERATIONS

Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.

Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than the figures in the following guide:

| INSULATED LINES | | |
|---|---|---|
| **VOLTAGE** | **MINIMUM DISTANCE** | **ALTERNATIVES** |
| Less than 300 volts | 3 feet | |
| 300 volts to 50 kv | 10 feet | |
| More than 50 kv | 10 feet plus 0.4 inches for each 1 kv over 50 kv | 2 times the length of the line insulator, but never less than 10 feet |

| UNINSULATED LINES | | |
|---|---|---|
| **VOLTAGE** | **MINIMUM DISTANCE** | **ALTERNATIVES** |
| Less than 50 kv | 10 feet | |
| More than 50 kv | 10 feet plus 0.4 inches for each 1 kv over 50 kv | 2 times the length of the line insulator, but never less than 10 feet |

Exception: Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system operator, has de-energized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

## MOBILE SCAFFOLDS

Mobile scaffolds, including scissor lifts, are still considered scaffolds and therefore must meet the minimum requirements outlined in 29 CFR Part 1926 Subpart L.

Mobile scaffolds will be braced in accordance with the manufacturer's directives. They should incorporate a cross, horizontal or diagonal brace, or a combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.

Scaffold casters and wheels shall be locked with positive wheel and/or swivel locks to prevent movement of the scaffold while the scaffold is used in a stationary manner. The use of wheel chocks would be appropriate.

Mobile scaffolds that incorporate a powered system for movement shall be designed for such use. "Designed for such use" is defined by the Company as "designed by a qualified person and authorized by the manufacturer."

Employees will not ride on scaffolds unless the following conditions are met:

The surface on which the scaffold is being moved is within three degrees of level and free of recognizable hazards, like debris, pits, holes, or other obstructions. Mobile scaffolds will not be utilized within six feet of any edge six feet or more above a lower level without additional protection installed on the working surface that will prevent the scaffold unit from rolling over the edge.

The height-to-base width ratio of the scaffold will not exceed two to one and the scaffold must be designed and constructed to meet or exceed nationally recognized stability test requirements such as those listed ANSI/SIA A92.5 and A92.6. The propulsion force will not produce a speed in excess of one foot per second.

Employees will stay off any part of the scaffold which extends outward beyond the wheels, casters, or other supports.

## AUTHORIZATION FOR USE

All subcontractors authorized to use a scaffold system on a worksite will have completed the "Scaffold Use Agreement". A sample of the form is included in this plan on Page 225 of this plan and additional copies can be obtained from the business office.

*Section 29:*

# Stairways

## PURPOSE

In accordance with 29 CFR 1926 Subpart X, the Company will not permit the use of stairways that are deemed unsafe or fail to meet OSHA requirements. Personal protective equipment shall be used at all times.

## GENERAL REQUIREMENTS

All employees shall be trained in the proper safety procedures and requirements when working on or around stairways. If any employee has a question regarding proper procedures, he or she should contact management before proceeding with the task in question.

A stairway or ladder must be provided at all work points of access where there is a break in elevation of 19 inches or more and no ramp, runway, or personnel hoist is provided.

Where there is only one point of access between levels, this point must be kept clear to permit free passage by workers. If free passage becomes restricted, a clear second point of access must be provided and used.

## STAIRWAY REQUIREMENTS

The following requirements apply to all stairways used during the process of construction as indicated below:

- Stairways that will not be a permanent part of the structure on which construction work is performed must have landings at least 30 inches deep and 22 inches wide at every 12 feet of vertical rise.
- Stairways shall be installed between 30 and 50 degrees from the horizontal.
- Riser height and tread depth shall be of uniform measurement.
- Where doors or gates open directly onto a stairway, a platform must be provided that extends at least 20 inches beyond the swing of the door.
- Metal pan landings and metal pan treads must be secured in place before filling.
- Metal pan landings must be filled with wood or metal to an even height with the lip until they are filled with concrete.
- Temporary treads must be made of wood or other solid material and installed the full width and depth of the stair.
- All stairway parts shall be free of dangerous projections, such as protruding nails, and kept clean and free of loose debris.

## STAIR RAILS AND HAND RAILS

- Stairways having four or more risers, or rising more than 30 inches in height, must have at least one handrail. A stair rail must be installed along each unprotected side or edge.
- Midrails must be located midway between the top of the stair rail system and the stairway steps.
- Handrails must be capable of withstanding 200 pounds of weight in any outward or downward direction.

- The height of stair rails shall not be less than 36 inches from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

- Landings must be provided with standard guardrail systems.

*Section 30:*

# Steel Erection

## COMMENCEMENT OF STEEL ERECTION

Prior to commencement, the competent person shall confirm the Company has received written notification that the concrete in the footings, piers, and walls, or the mortar in the masonry piers and walls, has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

## SITE LAYOUT

The controlling contractor shall ensure that the following is provided and maintained:

- Adequate access roads into and through the site for the safe delivery and movement of derricks, cranes, trucks, other necessary equipment, and the material to be erected and means and methods for pedestrian and vehicular control. Exception: this requirement does not apply to roads outside of the construction site.

- A firm, properly graded, drained area, readily accessible to the work with adequate space for the safe storage of materials and the safe operation of the erector's equipment.

## PRE-PLANNING

Overhead hoisting operations in steel erection shall be pre-planned to ensure the following:

- Routes for suspended loads shall be pre-planned to ensure that no employee is required to work directly below a suspended load except for 1) employees engaged in the initial connection of the steel; or 2) employees necessary for the hooking or unhooking of the load.

## SITE-SPECIFIC ERECTION PLAN

Where employers elect, due to conditions specific to the site, to develop alternate means and methods that provide employee protection, a qualified person shall develop and have available at the worksite an alternate site-specific erection plan in accordance with 29 CFR § 1926.753(c)(5), § 1926.757(a)(4) or § 1926.757(e)(4). Guidelines for establishing a site-specific erection plan are contained in Appendix A thereto.

## HOISTING AND RIGGING

All the provisions of 29 CFR 1926, Subpart CC apply to hoisting and rigging with the exception of § 1926.1431(a).

In addition, paragraphs below regarding pre-shift, working under loads, multiple lift rigging apply regarding the hazards associated with hoisting and rigging.

## PRE-SHIFT

Cranes being used in steel erection activities shall be visually inspected prior to each shift by a competent person. The inspection shall include observation for deficiencies during operation; at a minimum, this shall include the following:

- All control mechanisms for maladjustments

- Control and drive mechanism for excessive wear of components and contamination by lubricants, water or other foreign matter
- Safety devices, including but not limited to boom angle indicators, boom stops, boom kick out devices, anti-two block devices, and load moment indicators where required
- Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation
- Hooks and latches for deformation, chemical damage, cracks, or wear
- Wire rope reeving for compliance with hoisting equipment manufacturer's specifications
- Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, or moisture accumulation
- Hydraulic system for proper fluid level
- Tires for proper inflation and condition
- Ground conditions around the hoisting equipment for proper support, including ground settling under and around outriggers, ground water accumulation, or similar conditions
- The hoisting equipment for level position
- The hoisting equipment for level position after each move and setup

If any deficiency is identified, an immediate determination shall be made by the competent person as to whether the deficiency constitutes a hazard. If the deficiency is determined to constitute a hazard, the hoisting equipment shall be removed from service until the deficiency has been corrected.

A qualified rigger (a rigger who is also a qualified person) shall inspect the rigging prior to each shift in accordance with § 1926.251, as follows:

> *A thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of; frequency of sling use; severity of service conditions; nature of lifts being made; and experience gained on the service life of slings used in similar circumstances. Such inspections shall in no event be at intervals greater than once every 12 months.*
>
> *The owning employer shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected and shall keep such record available for examination.*

## WIRE ROPE

Thorough inspection to ensure plow-steel wire rope is not used, load limits are permanently affixed and legible to include identification markings prescribed by the manufacture. Inspect protruding ends of strands in splices on slings and bridles shall be covered or blunted. Wire ropes shall not be secured by knots. Except for scraper haul back lines.

The following limitations shall apply to the use of wire rope:

- An eye splice made in any wire rope shall have not less than three full tucks. However, this requirement shall not operate to preclude the use of another form of splice or connection which can be shown to be as efficient and which is not otherwise prohibited. Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering, or in pulling loads, shall consist of one continuous piece without a knot or

splice.

- Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.
- Wire rope shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.
- When U-bolt wire rope clips are used to form eyes, Table H-2 of 29 CFR 1926.251 shall be used to determine the number and spacing of clips.
- When used for eye splices, the U-bolt shall be applied so that the “U” section is in contact with the dead end of the rope.

## SLINGS

The following shall apply to slings:

- Slings shall not be shortened with knots or bolts or other makeshift devices.
- Sling legs shall not be kinked.
- Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- Slings shall be padded or protected from the sharp edges of their loads.
- Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load. Shock loading is prohibited.
- A sling shall not be pulled from under a load when the load is resting on the sling.

## MINIMUM SLING LENGTHS

Cable laid and 6 × 19 and 6 × 37 slings shall have a minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves or end fittings.

Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.

Cable laid grommets, strand laid grommets and endless slings shall have a minimum circumferential length of 96 times their body diameter.

## SAFE OPERATING TEMPERATURES

Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200 °F (93.33 °C). When non-fiber core wire rope slings of any grade are used at temperatures above 400 °F (204.44 °C) or below minus 60 °F (15.55 °C), recommendations of the sling manufacturer regarding use at that temperature shall be followed.

## END ATTACHMENTS

Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling. All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of the proof test and make it available for

examination.

Wire rope slings shall have permanently affixed, legible identification markings stating size, rated capacity for the type(s) of hitch(es) used and the angle upon which it is based, and the number of legs if more than one.

## NATURAL ROPE, AND SYNTHETIC FIBER

Employers must not use natural- and synthetic-fiber rope slings with loads in excess of the rated capacities (i.e., working load limits) indicated on the sling by permanently affixed and legible identification markings prescribed by the manufacturer.

All splices in rope slings provided by the employer shall be made in accordance with the fiber rope manufacturer's recommendations.

In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the centerline of the splice).

In layed synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the centerline of the splice).

Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1-inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes 1-inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support. Knots shall not be used in lieu of splices.

## SAFE OPERATING TEMPERATURES

Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20 °F (-28.88 °C) to plus 180 °F (82.2 °C) without decreasing the working load limit. For operations outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.

## SPLICING

Spliced fiber rope slings shall not be used unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:

- In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.

- In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.

- Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under 1 inch (2.54 cm) in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope 1 inch (2.54 cm) in diameter and larger, the tail shall project at least 6 inches (15.24 cm) beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

- Fiber rope slings shall have a minimum clear length of rope between eye splices equal to 10 times the rope diameter. Knots shall not be used in lieu of splices. Clamps not designed specifically for fiber ropes shall not be used for splicing.

- For all eye splices, the eye shall be of such size to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.

## END ATTACHMENTS

Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.

## REMOVAL FROM SERVICE

Natural and synthetic fiber rope slings shall be immediately removed from service if any of the following conditions are present:

- Abnormal wear

- Powdered fiber between strands

- Broken or cut fibers

- Variations in the size or roundness of strands

- Discoloration or rotting

- Distortion of hardware in the sling

Employers must use natural- and synthetic-fiber rope slings that have permanently affixed and legible identification markings that state the rated capacity for the type(s) of hitch(es) used and the angle upon which it is based, type of fiber material, and the number of legs if more than one.

## SYNTHETIC WEBBING (NYLON, POLYESTER, AND POLYPROPYLENE)

The employer shall have each synthetic web sling marked or coded to show:

- Name or trademark of manufacturer;

- Rated capacities for the type of hitch;

- Type of material;

- Rated capacity shall not be exceeded;

Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

## FITTINGS

Fittings shall be of a minimum breaking strength equal to that of the sling and free of all sharp edges that could in any way damage the webbing.

## ATTACHMENT OF END FITTINGS TO WEBBING AND FORMATION OF EYES

Stitching shall be the only method used to attach end fittings to webbing and to form eyes. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

## ENVIRONMENTAL CONDITIONS

When synthetic web slings are used, the following precautions shall be taken:

- Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.
- Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.
- Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

Safe operating temperatures: Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180 °F (82.2 °C). Polypropylene web slings shall not be used at temperatures in excess of 200 °F (93.33 °C).

Removal from service: Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

- Acid or caustic burns
- Melting or charring of any part of the sling surface
- Snags, punctures, tears or cuts
- Broken or worn stitches
- Distortion of fittings

## SHACKLES AND HOOKS

Employers must not use shackles with loads in excess of the rated capacities (i.e., working load limits) indicated on the shackle by permanently affixed and legible identification markings prescribed by the manufacturer.

The manufacturer’s recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer’s recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests

The headache ball, hook or load shall not be used to transport personnel except under the following conditions:

Safety latches on hooks shall not be deactivated or made inoperable except:

- When a qualified rigger has determined that the hoisting and placing of purlins and single joists can be performed more safely by doing so; or
- When equivalent protection is provided in a site-specific erection plan

## WORKING UNDER LOADS

Routes for suspended loads shall be pre-planned to ensure that no employee is required to work directly below a suspended load, with the exception of the following:

- Employees engaged in the initial connection of the steel; or
- Employees necessary for the hooking or unhooking of the load.

When working under suspended loads, the following criteria shall be met:

- Materials being hoisted shall be rigged to prevent unintentional displacement;
- Hooks with self-closing safety latches or their equivalent shall be used to prevent components from slipping out of the hook; and
- All loads shall be rigged by a qualified rigger.

## MULTIPLE LIFT RIGGING PROCEDURE

A multiple lift shall only be performed if the following criteria are met:

- A multiple lift rigging assembly is used;
- A maximum of five members are hoisted per lift;
- Only beams and similar structural members are lifted; and
- All employees engaged in the multiple lift have been trained in these procedures in accordance with § 1926.761(c)(1).

No crane is permitted to be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.

Components of the multiple lift rigging assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a 5 to 1 safety factor for all components.

The multiple lift rigging assembly shall be rigged with members:

- Attached at their center of gravity and maintained reasonably level;
- Rigged from top down; and
- Rigged at least 7 feet (2.1 m) apart.

The members on the multiple lift rigging assembly shall be set from the bottom up.

Controlled load lowering shall be used whenever the load is over the connectors.

The total load shall not exceed:

- The rated capacity of the hoisting equipment specified in the hoisting equipment load charts; or

- The rigging capacity specified in the rigging rating chart.

## ERECTION PROCESS

Structural stability shall be maintained at all times during the erection process.

NOTE: Additional requirements for roadway construction, reference 29 CFR 1926.754.

## MULTI-STORY STRUCTURES

The following additional requirements shall apply for multi-story structures:

The permanent floors shall be installed as the erection of structural members progresses, and there shall be not more than eight stories between the erection floor and the upper-most permanent floor, except where the structural integrity is maintained as a result of the design.

At no time shall there be more than four floors or 48 feet (14.6 m), whichever is less, of unfinished bolting or welding above the foundation or uppermost permanently secured floor, except where the structural integrity is maintained as a result of the design.

A fully planked or decked floor or nets shall be maintained within two stories or 30 feet (9.1 m), whichever is less, directly under any erection work being performed.

## WALKING/WORKING SURFACES — SHEAR CONNECTORS AND OTHER SIMILAR DEVICES

Shear connectors (such as headed steel studs, steel bars or steel lugs), reinforcing bars, deformed anchors or threaded studs shall 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 to prevent tripping hazards. When constructing composite floors, roofs and bridge decks, employees shall lay out and install the shear connectors after the metal decking has been installed, using the metal decking as a working platform. Shear connector shall not be installed from within a controlled decking zone (CDZ), as specified in § 1926.760(c)(8).

## PLUMBING-UP

When deemed necessary by a competent person, plumbing-up equipment shall be installed in conjunction with the steel erection process to ensure the stability of the structure. When used, plumbing-up equipment shall be in place and properly installed before the structure is loaded with construction material such as loads of joists, bundles of decking or bundles of bridging. Plumbing-up equipment shall be removed only with the approval of a competent person.

## HOISTING, LANDING AND PLACING OF METAL DECKING BUNDLES

Bundle packaging and strapping shall not be used for hoisting unless specifically designed for that purpose. If loose items such as dunnage, flashing, or other materials are placed on the top of metal decking bundles to be hoisted, such items shall be secured to the bundles. Bundles of metal decking on joists shall be landed in accordance with § 1926.757(e)(4). Metal decking bundles shall be landed on framing members so that enough support is provided to allow the bundles to be un-banded without dislodging the bundles from the supports. At the end of the shift or when environmental or jobsite conditions require, metal decking shall be secured against displacement

## ROOF AND FLOOR HOLES AND OPENINGS

Metal decking at roof and floor holes and openings shall be installed as follows:

- Framed metal deck openings shall have structural members turned down to allow continuous deck installation except where not allowed by structural design constraints or constructability.
- Roof and floor holes and openings shall be decked over. Where large size, configuration or other structural design does not allow openings to be decked over (such as elevator shafts, stair wells, etc.) employees shall be protected in accordance with § 1926.760(a)(1).
- Metal decking holes and openings shall not be cut until immediately prior to being permanently filled with the equipment or structure needed or intended to fulfill its specific use and which meets the strength requirements of paragraph 29 CFR 1926.754 (e)(3), or shall be immediately covered.

## COVERING ROOF AND FLOOR OPENINGS

Additionally, 29 CFR 1926 .754 requires:

- Covers for roof and floor openings shall be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time.
- All covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees.
- All covers shall be painted with high-visibility paint or shall be marked with the word “HOLE” or “COVER” to provide warning of the hazard.
- Smoke dome or skylight fixtures that have been installed are not considered covers for the purpose of this section unless they meet the strength requirements of paragraph 29 CFR 1926.754 (e)(3)(i).

## DECKING GAPS AROUND COLUMNS

Wire mesh, exterior plywood, or equivalent, shall be installed around columns where planks or metal decking do not fit tightly. The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.

## INSTALLATION OF METAL DECKING

Except as provided in § 1926.760(c), metal decking shall be laid tightly and immediately secured upon placement to prevent accidental movement or displacement. During initial placement, metal decking panels shall be placed to ensure full support by structural members.

## DERRICK FLOORS

A derrick floor shall be fully decked and/or planked and the steel member connections completed to support the intended floor loading. Temporary loads placed on a derrick floor shall be distributed over the underlying support members so as to prevent local overloading of the deck material.

## COLUMN ANCHORAGE

All columns shall be anchored by a minimum of 4 anchor rods (anchor bolts). Each column anchor rod (anchor bolt) assembly, including the column-to-base plate weld and the column foundation, shall be designed to resist a minimum eccentric gravity load of 300 pounds (136.2 kg) located 18 inches (.46m) from the extreme outer face of

the column in each direction at the top of the column shaft. Columns shall be set on level finished floors, pre-grouted leveling plates, leveling nuts, or shim packs which are adequate to transfer the construction loads. All columns shall be evaluated by a competent person to determine whether guying or bracing is needed; if guying or bracing is needed, it shall be installed.

## REPAIR, REPLACEMENT OR FIELD MODIFICATION OF ANCHOR RODS (ANCHOR BOLTS)

Anchor rods (anchor bolts) shall not be repaired, replaced or field-modified without the approval of the project structural engineer of record. Prior to the erection of a column, the controlling contractor shall provide written notification to the steel erector if there has been any repair, replacement or modification of the anchor rods (anchor bolts) of that column.

## BEAMS AND COLUMNS

During the final placing of solid web structural members, the load shall not be released from the hoisting line until the members are secured with at least two bolts per connection, of the same size and strength as shown in the erection drawings, drawn up wrench-tight or the equivalent as specified by the project structural engineer of record, except as specified in 29 CFR 1926.756(b). A competent person shall determine if more than two bolts are necessary to ensure the stability of cantilevered members; if additional bolts are needed, they shall be installed.

## DIAGONAL BRACING

Solid web structural members used as diagonal bracing shall be secured by at least one bolt per connection drawn up wrench-tight or the equivalent as specified by the project structural engineer of record.

## DOUBLE CONNECTIONS AT COLUMNS AND/OR AT BEAM WEBS OVER A COLUMN

When two structural members on opposite sides of a column web, or a beam web over a column, are connected sharing common connection holes, at least one bolt with its wrench-tight nut shall remain connected to the first member unless a shop-attached or field-attached seat or equivalent connection device is supplied with the member to secure the first member and prevent the column from being displaced (See 29 CFR Subpart R, Appendix H for examples of equivalent connection devices). If a seat or equivalent device is used, the seat (or device) shall be designed to support the load during the double connection process. It shall be adequately bolted or welded to both a supporting member and the first member before the nuts on the shared bolts are removed to make the double connection.

## COLUMN SPLICES

Each column splice shall be designed to resist a minimum eccentric gravity load of 300 pounds (136.2 kg) located 18 inches (.46 m) from the extreme outer face of the column in each direction at the top of the column shaft.

## PERIMETER COLUMNS

Perimeter columns shall not be erected unless:

- The perimeter columns extend a minimum of 48 inches (1.2 m) above the finished floor to permit installation of perimeter safety cables prior to erection of the next tier, except where constructability does not allow (see CFR Subpart R, Appendix F);

- The perimeter columns have holes or other devices in or attached to perimeter columns at 42-45 inches (107-114 cm) above the finished floor and the midpoint between the finished floor and the top cable to permit installation of perimeter safety cables required by § 1926.760(a)(2), except where constructability does not allow. (See CFR Subpart R, Appendix F).

## OPEN WEB STEEL JOISTS

Except as provided in 29 CFR 1926.757(a)(2), where steel joists are used and columns are not framed in at least two directions with solid web structural steel members, a steel joist shall be field-bolted at the column to provide lateral stability to the column during erection. For the installation of this joist:

A vertical stabilizer plate shall be provided on each column for steel joists. The plate shall be a minimum of 6 inch by 6 inch (152 mm by 152 mm) and shall extend at least 3 inches (76 mm) below the bottom chord of the joist with a 13/16 inch (21 mm) hole to provide an attachment point for guying or plumbing cables.

The bottom chords of steel joists at columns shall be stabilized to prevent rotation during erection.

Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted, and each end of the bottom chord is restrained by the column stabilizer plate

Where constructability does not allow a steel joist to be installed at the column an alternate means of stabilizing joists shall be installed on both sides near the column and shall:

- provide stability equivalent to 29 CFR 1926.757(a)(2) as definied above;
- be designed by a qualified person;
- be shop installed; and
- be included in the erection drawings.

Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted and the joist is stabilized according to the following criteria:

- Where steel joists at or near columns span 60 feet (18.3 m) or less, the joist shall be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging.
- Where steel joists at or near columns span more than 60 feet (18.3 m), the joists shall be set in tandem with all bridging installed unless an alternative method of erection, which provides equivalent stability to the steel joist, is designed by a qualified person and is included in the site-specific erection plan. For joists over 60 feet, both ends of the joist shall be attached as specified in paragraph (b) of this section and the provisions of paragraph (d) of this section met before the hoisting cables are released.

A steel joist or steel joist girder shall not be placed on any support structure unless such structure is stabilized.

When steel joist(s) are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

No modification that affects the strength of a steel joist or steel joist girder shall be made without the approval of the project structural engineer of record.

## FIELD-BOLTED JOISTS

Except for steel joists that have been pre-assembled into panels, connections of individual steel joists to steel structures in bays of 40 feet (12.2 m) or more shall be fabricated to allow for field bolting during erection. These connections shall be field-bolted unless constructability does not allow. Steel joists and steel joist girders shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a qualified person. A bridging terminus point shall be established before bridging is installed. (See 29 CFR 1926 Subpart R, Appendix C.)

## ATTACHMENT OF STEEL JOISTS AND STEEL JOIST GIRDERS

Each end of “K” series steel joists shall be attached to the support structure with a minimum of 2, one eighth inch (3 mm) fillet welds 1 inch (25 mm) long or with 2, one half inch (13 mm) bolts, or the equivalent. Each end of “LH” and “DLH” series steel joists and steel joist girders shall be attached to the support structure with a minimum of 2, one quarter inch (6 mm) fillet welds 2 inches (51 mm) long, or with 2 three quarter inch (19 mm) bolts, or the equivalent. Each steel joist shall be attached to the support structure, at least at one end on both sides of the seat, immediately upon placement in the final erection position and before additional joists are placed. Exception: panels that have been pre-assembled from steel joists with bridging shall be attached to the structure at each corner before the hoisting cables are released.

## ERECTION OF STEEL JOISTS

Both sides of the seat of one end of each steel joist that requires bridging under Tables A and B of 29 CFR 1926.757(c)(3) shall be attached to the support structure before hoisting cables are released.

For joists over 60 feet, both ends of the joist shall be attached as specified in paragraph above and where steel joists at or near columns span more than 60 feet (18.3 m), the joists shall be set in tandem with all bridging installed unless an alternative method of erection, which provides equivalent stability to the steel joist, is designed by a qualified person and is included in the site-specific erection plan, before the hoisting cables are released.

On steel joists that do not require erection bridging under Tables A and B of 29 CFR 1926.757(c)(3), only one employee shall be allowed on the joist until all bridging is installed and anchored. (see the CFR for tables)

NOTE: Tables of the CFR delineate spans requiring additional bridging and bolting for spans zero to 60 feet. Reference the table for specific requirements.

Employees shall not be allowed on steel joists where the span of the steel joist is equal to or greater than the span shown in Tables A and B of 29 CFR 1926.757(c)(3) except in accordance with § 1926.757(d).

When permanent bridging terminus points cannot be used during erection, additional temporary bridging terminus points are required to provide stability. (See 29 CFR 1926 Subpart R, Appendix C.)

## ERECTION BRIDGING

Where the span of the steel joist is equal to or greater than the span shown in Tables A and B of 29 CFR 1926.757(c)(3), the following shall apply:

- A row of bolted diagonal erection bridging shall be installed near the midspan of the steel joist;
- Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
- No more than one employee shall be allowed on these spans until all other bridging is installed and anchored.

Where the span of the steel joist is over 60 feet (18.3 m) through 100 feet (30.5 m), the following shall apply:

- All rows of bridging shall be bolted diagonal bridging;
- Two rows of bolted diagonal erection bridging shall be installed near the third points of the steel joist;
- Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
- No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.

Where the span of the steel joist is over 100 feet (30.5 m) through 144 feet (43.9 m), the following shall apply:

- All rows of bridging shall be bolted diagonal bridging;
- Hoisting cables shall not be released until all bridging is installed and anchored; and
- No more than two employees shall be allowed on these spans until all bridging is installed and anchored.

For steel members spanning over 144 feet (43.9 m), the erection methods used shall be in accordance with § 1926.756.

## BOTTOM CHORD BEARING JOIST

Where any steel joist over 60 feet, and equal to or greater than the span shown in Tables A and B of 29 CFR 1926.757(c)(3), is a bottom chord bearing joist, a row of bolted diagonal bridging shall be provided near the support(s). This bridging shall be installed and anchored before the hoisting cable(s) is released.

When bolted diagonal erection bridging is required by this section, the following shall apply:

- The bridging shall be indicated on the erection drawing;
- The erection drawing shall be the exclusive indicator of the proper placement of this bridging;
- Shop-installed bridging clips, or functional equivalents, shall be used where the bridging bolts to the steel joists;
- When two pieces of bridging are attached to the steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second; and
- Bridging attachments shall not protrude above the top chord of the steel joist

## LANDING AND PLACING LOADS

During the construction period, the employer placing a load on steel joists shall ensure that the load is distributed so as not to exceed the carrying capacity of any steel joist. The weight of a bundle of joist bridging shall not exceed a total of 1,000 pounds (454 kg). A bundle of joist bridging shall be placed on a minimum of three steel joists that are secured at one end. The edge of the bridging bundle shall be positioned within 1 foot (.30 m) of the secured end. No construction loads are allowed on the steel joists until all bridging is installed and anchored and all joist-bearing ends are attached. Exception: Construction loads consisting of bundled decking.

No bundle of decking may be placed on steel joists until all bridging has been installed and anchored and all joist bearing ends attached, unless all of the following conditions are met:

- The employer has first determined from a qualified person and documented in a site-specific erection plan that the structure or portion of the structure is capable of supporting the load;
- The bundle of decking is placed on a minimum of three steel joists;
- The joists supporting the bundle of decking are attached at both ends;
- At least one row of bridging is installed and anchored;
- The total weight of the bundle of decking does not exceed 4,000 pounds (1816 kg); and

• Placement of the bundle of decking shall be placed within 1 foot (.30 m) of the bearing surface of the joist end.

## SYSTEMS-ENGINEERED METAL BUILDINGS

All of the requirements of this subpart apply to the erection of systems-engineered metal buildings, except § 1926.755 (column anchorage) and 1926.757 (open web steel joists).

Each structural column shall be anchored by a minimum of four anchor rods (anchor bolts).

Rigid frames shall have 50 percent of their bolts or the number of bolts specified by the manufacturer (whichever is greater) installed and tightened on both sides of the web adjacent to each flange before the hoisting equipment is released.

Construction loads shall not be placed on any structural steel framework unless such framework is safely bolted, welded or otherwise adequately secured.

In girt and eave strut-to-frame connections, when girts or eave struts share common connection holes, at least one bolt with its wrench-tight nut shall remain connected to the first member unless a manufacturer-supplied, field-attached seat or similar connection device is present to secure the first member so that the girt or eave strut is always secured against displacement.

Both ends of all steel joists or cold-formed joists shall be fully bolted and/or welded to the support structure before:

• Releasing the hoisting cables;

• Allowing an employee on the joists; or

• Allowing any construction loads on the joists.

Purlins and girts shall not be used as an anchorage point for a fall arrest system unless written approval is obtained from a qualified person. Purlins may only be used as a walking/working surface when installing safety systems, after all permanent bridging has been installed and fall protection is provided.

Construction loads may be placed only within a zone that is within 8 feet (2.5 m) of the center-line of the primary support member.

## FALLING OBJECT PROTECTION

All materials, equipment, and tools, which are not in use while aloft, shall be secured against accidental displacement. The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided.

## FALL PROTECTION

Each employee engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet (4.6 m) above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems. Except as provided by designation as a connector or working in a controlled decking zone, see below.

## PERIMETER SAFETY CABLES

On multi-story structures, perimeter safety cables shall be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed.

Connectors and employees working in controlled decking zones shall be protected from fall hazards as provided in the following paragraphs, respectively.

## CONNECTORS

Each connector shall:

- Be protected by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems, from fall hazards of more than two stories or 30 feet (9.1 m) above a lower level, whichever is less;
- Have completed connector training in accordance with § 1926.761; and
- Be provided, at heights over 15 and up to 30 feet above a lower level, with a personal fall arrest system, positioning device system or fall restraint system and wear the equipment necessary to be able to be tied off.

## CONTROLLED DECKING ZONE (CDZ)

A controlled decking zone may be established 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. In each CDZ, the following shall apply:

- Each employee working at the leading edge in a CDZ shall be protected from fall hazards of more than two stories or 30 feet (9.1 m), whichever is less.
- Access to a CDZ shall be limited to only those employees engaged in leading edge work.
- The boundaries of a CDZ shall be designated and clearly marked. The CDZ shall not be more than 90 feet (27.4 m) wide and 90 (27.4 m) feet deep from any leading edge. The CDZ shall be marked by the use of control lines or the equivalent. Examples of acceptable procedures for demarcating CDZ's can be found in Appendix D of 29 CFR 1926 Subpart R.
- Each employee working in a CDZ shall have completed CDZ training in accordance with § 1926.761.
- Unsecured decking in a CDZ shall not exceed 3,000 square feet (914.4 m 2).
- Safety deck attachments shall be performed in the CDZ from the leading edge back to the control line and shall have at least two attachments for each metal decking panel.
- Final deck attachments and installation of shear connectors shall not be performed in the CDZ.

## CRITERIA FOR FALL PROTECTION EQUIPMENT

Guardrail systems, safety net systems, personal fall arrest systems, positioning device systems and their components shall conform to the criteria in § 1926.502 (see Appendix G of 29 CFR 1926 Subpart R).

Fall arrest system components shall be used in fall restraint systems and shall conform to the criteria in § 1926.502 (see Appendix G of 29 CFR 1926 Subparte R). Either body belts or body harnesses shall be used in fall restraint systems.

Perimeter safety cables shall meet the criteria for guardrail systems in § 1926.502 (see Appendix G of 29 CFR 1926 Subparte R).

## CUSTODY OF FALL PROTECTION

Fall protection provided by the steel erector shall remain in the area where steel erection activity has been completed, to be used by other trades, only if the controlling contractor or its authorized representative:

- Has directed the steel erector to leave the fall protection in place; and
- Has inspected and accepted control and responsibility of the fall protection prior to authorizing persons other than steel erectors to work in the area.

## TRAINING

Training required by this section shall be provided by a qualified person(s).

The employer shall train each employee exposed to a fall hazard in accordance with the requirements of 29 CFR 1926.761. The employer shall institute a training program and ensure employee participation in the program.

## SPECIAL TRAINING PROGRAMS

In addition to fall hazard training the qualified person designated by the employer shall provide special training to employees engaged in the following activities.

## MULTIPLE LIFT RIGGING

Multiple lift rigging procedure; The employer shall ensure that each employee who performs multiple lift rigging has been provided training in the following areas:

- The nature of the hazards associated with multiple lifts; and
- The proper procedures and equipment to perform multiple lifts required by § 1926.753(e)

## CONNECTOR PROCEDURES

The employer shall ensure that each connector has been provided training in the following areas:

- The nature of the hazards associated with connecting; and
- The establishment, access, proper connecting techniques and work practices required by § 1926.756(c) and § 1926.760(b).

## CONTROLLED DECKING ZONE PROCEDURES

Where CDZs are being used, the employer shall assure that each employee has been provided training in the following areas:

- The nature of the hazards associated with work within a controlled decking zone; and
- The establishment, access, proper installation techniques and work practices required by § 1926.760(c) and § 1926.754(e).

## DEFINITIONS

***Competent* person** (also defined in § 1926.32) means one who is capable of identifying existing and predictable

hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

**Connector** means an employee who, working with hoisting equipment, is placing and connecting structural members and/or components.

**Controlled Decking Zone (CDZ)** means an area in which certain work (for example, initial installation and placement of metal decking) may take place without the use of guardrail systems, personal fall arrest systems, fall restraint systems, or safety net systems and where access to the zone is controlled.

**Controlled load lowering** means lowering a load by means of a mechanical hoist drum device that allows a hoisted load to be lowered with maximum control using the gear train or hydraulic components of the hoist mechanism. Controlled load lowering requires the use of the hoist drive motor, rather than the load hoist brake, to lower the load.

**Critical lift** means a lift that (1) exceeds 75 percent of the rated capacity of the crane or derrick, or (2) requires the use of more than one crane or derrick.

**Derrick floor** means an elevated floor of a building or structure that has been designated to receive hoisted pieces of steel prior to final placement.

**Erection bridging** means the bolted diagonal bridging that is required to be installed prior to releasing the hoisting cables from the steel joists.

**Opening** means a gap or void 12 inches (30.5 cm) or more in its least dimension in a floor, roof or other walking/working surface. For the purposes of this subpart (Subpart R), skylights and smoke domes that do not meet the strength requirements of § 1926.754(e)(3) shall be regarded as openings.

**Post** means a structural member with a longitudinal axis that is essentially vertical, that: (1) weighs 300 pounds or less and is axially loaded (a load presses down on the top end), or (2) is not axially loaded, but is laterally restrained by the above member. Posts typically support stair landings, wall framing, mezzanines and other substructures.

**Qualified person** (also defined in § 1926.32) means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

**Steel joist** means an open web, secondary load-carrying member of 144 feet (43.9 m) or less, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses or cold-formed joists.

**Steel joist girder** means an open web, primary load-carrying member, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses.

**Steel truss** means an open web member designed of structural steel components by the project structural engineer of record. For the purposes of this subpart, a steel truss is considered equivalent to a solid web structural member.

## APPENDICES TO SUBPART R (STEEL ERECTION) FOR REFERENCE:

1926 Subpart R App A; Guidelines for establishing the components of a site-specific erection plan: Non-Mandatory Guidelines for Complying with 1926.752(e)

1926 Subpart R App B; Reserved Not Used

1926 Subpart R App C; Illustrations of Bridging Terminus Points: Non-Mandatory Guidelines for Complying with

1926.757(a)(10) and 1926.757(c)(5)

1926 Subpart R App D; Illustration of the Use of Control Lines to Demarcate Controlled Decking Zones (CDZs): Non-mandatory Guidelines for Complying with 1926.760(c)(3)

1926 Subpart R App E; Training: Non-mandatory Guidelines for Complying with 1926.761

1926 Subpart R App F; Perimeter Columns: Non-Mandatory Guidelines for Complying with 1926.756(e) To Protect the Unprotected Side or Edge of a Walking/Working Surface

1926 Subpart R App G; 1926.502 (b)-(e) Fall Protection Systems Criteria and Practices

1926 Subpart R App H; Double Connections: Illustration of a Clipped End Connection and a Staggered Connection: Non-Mandatory Guidelines for Complying with 1926.756(c)(1)

*Section 31:*

# Welding and Cutting

***This plan is adopted in accordance with 29 CFR 1926 Subpart J.***

## TRANSPORTING, MOVING, AND STORING COMPRESSED GAS CYLINDERS

1. Valve protection caps shall be in place and the cylinder secured upright with a chain or wire rope.

2. When cylinders are hoisted, they shall be secured on a cradle, sling board, or pallet. They will not be hoisted or transported by means of magnets or choker slings.

3. Cylinders shall be moved by tilting and rolling them on their bottom edges; they will not be intentionally dropped, struck, or permitted to strike each other violently.

4. When powered vehicles transport cylinders, they shall be secured in a vertical position.

5. Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve protection caps to pry cylinders loose when frozen. Warm, not boiling, water shall be used to thaw cylinders loose.

6. Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.

7. A suitable cylinder truck, chain, or other steadying device will be used to keep cylinders from being knocked over while in use.

8. When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valve shall be closed.

9. Compressed gas cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.

    › Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high, maintaining a fire-resistance rating of at least one-half hour.

    › Inside buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location, at least 20 feet (6.1 m) from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage places shall be located where cylinders will not be knocked over or damaged by passing or falling objects or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures, such as lockers and cupboards.

    › The in-plant handling, storage, and utilization of all compressed gases in cylinders, portable tanks, rail tank cars, or motor vehicle cargo tanks shall be in accordance with Compressed Gas Association Pamphlet P-1-1965 and ANSI Z49.1-1967.

## PLACING CYLINDERS

1. Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag,

or flame will not reach them. When this is impractical, fire resistant shields shall be provided.

2. Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.

3. Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.

4. Cylinders containing oxygen, acetylene, or other fuel gas shall not be taken into confined spaces.

## TREATMENT OF CYLINDERS

1. Cylinders, whether full or empty, shall not be used as rollers or supports.

2. No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him shall refill a cylinder. No one shall use a cylinder's contents for purposes other than those intended by the supplier. All cylinders used shall meet the Department of Transportation requirements published in 49 CFR Part 178, Subpart C and specification for cylinders.

3. No damaged or defective cylinder shall be used.

4. Use of fuel gas. The employer shall thoroughly instruct employees in the safe use of fuel gas as follows:

   › Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve shall stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame, or other possible sources of ignition.

   › The cylinder valve shall always be opened slowly to prevent damage to the regulator.

   › For quick closing, valves on fuel gas cylinders shall not be opened more than one and a half turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifold or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.

   › Fuel gas shall not be used from cylinders through torches or other devices that are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

   › Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.

5. If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve rather than from the valve stem, and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.

6. If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

## FUEL GAS AND OXYGEN MANIFOLDS

1. Fuel gas and oxygen manifolds shall bear the name of the substance they contain in letters at least one inch high, which shall be either painted on the manifold or on a sign permanently attached to it.

2. Fuel gas and oxygen manifolds shall be placed in safe, well ventilated, and accessible locations. They shall not be located within enclosed spaces.

3. Manifold hose connections, including both ends of the supply hose that lead to the manifold, shall be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Adapters shall not be used to permit the interchange of hose. Hose connections shall be kept free of grease and oil.

4. When not in use, manifold and header hose connections shall be capped.

5. Nothing shall be placed on top of a manifold, when in use, which will damage the manifold or interfere with the quick closing of the valves.

## HOSE

1. Fuel gas hose and oxygen hose shall be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.

2. When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 12 inches shall be covered by tape.

3. All hose in use carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite, enter into combustion, or cause any harm to employees shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.

4. Hose that has been subject to flashback or shows evidence of severe wear or damage shall be tested to twice the normal pressure to which it is subject but in no case less than 300 psi. Defective hose, or hose in doubtful condition, shall not be used.

5. Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

6. Boxes used for the storage of gas hose shall be ventilated.

7. Hoses, cables, and other equipment shall be kept clear of passageways, ladders, and stairs.

## TORCHES

1. Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills, or other devices designed for such purpose.

2. Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings and tip connections. Defective torches shall not be used.

3. Friction lighters shall light torches or other approved devices and not by matches or from hot work.

4. Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order while in use.

5. Oxygen cylinders and fittings shall be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

6. For additional details not covered in this subpart, applicable technical portions of American National Standards Institute, Z49.1-1967, Safety in Welding and Cutting, shall apply.

## MANUAL ELECTRODE HOLDERS

1. Only manual electrode holders which are specifically designed for arc welding and cutting and are of a capacity capable of safely handling the maximum rated current required by the electrodes shall be used.

2. Any current-carrying parts passing through the portion of the holder gripped by the arc welder or cutter's hand and the outer surfaces of the holder's jaws shall be fully insulated against the maximum voltage, encountered to ground.

## WELDING CABLES AND CONNECTORS

1. All arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

2. Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected shall be used, except cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.

3. When it becomes necessary to connect or splice lengths of one cable to another, substantially insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are affected by means of cable lugs, they shall be securely fastened together to give good electrical contact and the exposed metal parts of the lugs shall be completely insulated.

4. Cables in need of repair shall not be used. When a cable becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tape or other equivalent insulation.

## GROUND RETURNS AND MACHINE GROUNDING

1. A ground return cable shall have a safe current-carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit which it services. When a single ground return cable services more than one unit, its safe current-carrying capacity shall equal or exceed the total specified maximum output capacities of all the units which it services.

2. Pipelines containing gases or flammable liquids, or conduits containing electrical circuits, shall not be used as a ground return. For welding on natural gas pipelines, the technical portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, 49 CFR Part 192, Minimum Federal Safety Standards for Gas Pipelines, shall apply.

3. When a structure or pipeline is employed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks, or heat at any point shall cause rejection of the structures as a ground circuit.

4. When a structure or pipeline is continuously employed as a ground return circuit, all joints shall be bonded, and periodic inspections shall be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.

5. The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits, other than by means of the structure, shall be checked to ensure the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current flow to cause the fuse or circuit breaker to interrupt the current.

6. All ground connections shall be inspected to ensure they are mechanically strong and electrically adequate for the required current.

7. Operating instructions — employers shall instruct employees in the safe means of arc welding and cutting as follows:

   › When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.

   › Hot electrode holders shall not be dipped in water; to do so may expose the arc welder or cutter to electric shock.

   › When the arc welder or cutter has occasion to leave his work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment shall be opened (placed in the OFF position).

   › Any faulty or defective equipment shall be reported to the competent person.

## SHIELDING

1. Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flameproof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

2. When practical, objects to be welded, cut, or heated shall be moved to a designated safe location or, if the objects cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place or otherwise protected.

3. If the object to be welded, cut, or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks, and slag and to protect the immovable fire hazards from them.

4. No welding, cutting, or heating shall be done where the application of flammable paints, the presence of other flammable compounds, or heavy dust concentrations create a hazard.

5. Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

6. When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed and for a sufficient period of time after completion of the work to ensure

no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.

7. When welding, cutting, or heating is performed on walls, floors, and ceilings, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.

8. To minimize the risk of fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period.

9. Overnight and at the change of shifts, the torch and hose shall be removed from the confined space. Open-end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.

10. Except when the contents are being removed or transferred, drums, pails, and other containers that contain or have contained flammable liquids shall be kept closed. Empty containers shall be removed to a safe area apart from hot work operations or open flames.

11. Drums, containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances, ventilated, and tested. For welding, cutting, and heating on steel pipelines containing natural gas, the pertinent portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, 49 CFR Part 192, Minimum Federal Safety Standards for Gas Pipelines shall apply.

12. Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.

## MECHANICAL VENTILATION

For purposes of this section, mechanical ventilation shall meet the following requirements:

1. Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems.

2. General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits.

3. Local exhaust ventilation shall consist of freely movable hoods placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits.

4. Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air.

5. All replacement air shall be clean and respirable.

6. Oxygen shall not be used for ventilation purposes, comfort cooling, blowing dust from clothing, or for cleaning the work area.

## WELDING, CUTTING, AND HEATING IN CONFINED SPACES

General mechanical or local exhaust ventilation will be provided whenever welding, cutting, or heating is performed

in a confined space. When sufficient ventilation cannot be obtained without blocking the means of access, airline respirators shall protect employees in the confined space. An employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency.

Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose, they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a pre-planned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

## WELDING, CUTTING, OR HEATING OF METALS OF TOXIC SIGNIFICANCE

Welding, cutting, or heating in any enclosed spaces involving the following metals shall be performed with either general mechanical or local exhaust ventilation.

1. Zinc-bearing base or filler metals or metals coated with zinc-bearing materials

2. Lead base metals

3. Cadmium-bearing filler materials

4. Chromium-bearing metals or metals coated with chromium-bearing materials

Employees will be protected by air-supplied respirators when welding, cutting, or heating in any enclosed space involving:

1. Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials

2. Cadmium-bearing or cadmium-coated base metals

3. Metals coated with mercury-bearing metals

4. Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-supplied respirators.

Employees performing such operations in the open air shall be protected by filter-type respirators except when such operations involve beryllium-containing base or filler metals which airline respirators will protect.

Any person with a probable exposure to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner.

## INERT-GAS/METAL-ARC WELDING

Since the inert-gas metal-arc welding process involves the production of ultra-violet radiation 5 to 30 times as intense as those produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in or be exposed to the process until the following special precautions have been taken:

1. The use of chlorinated solvents shall be kept at least 200 feet, unless shielded, from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such

surfaces.

2. Filter lenses shall protect employees in the area not protected from the arc by screening. When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type shall be worn under welding helmets. Hand shields to protect the welder against flashes and radiant energy shall be used when either the helmet is lifted or the shield is removed.

3. Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks/openings and highly reflective surfaces.

## GENERAL WELDING, CUTTING, AND HEATING

General welding, cutting, and heating not involving special conditions or materials may normally be done without mechanical ventilation or respiratory protective equipment. In the event of unusual physical or atmospheric conditions resulting in the unsafe accumulation of contaminants, suitable mechanical ventilation or respiratory protective equipment shall be provided.

The following protocol is implemented for general welding, cutting, and heating:

1. Employees performing any type of welding, cutting, or heating shall be protected by suitable eye protective equipment.

2. Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

3. Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

## PROTECTION AGAINST TOXIC PRESERVATIVE COATINGS

1. In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least four inches from the area of heat application, or air-supplied respirators shall protect the employees.

2. The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area to be cleaned.

# ATTACHMENTS

# Confined Space Checklist

BjERK BUILDERS, Inc.

## SITE INFORMATION

Project: _____ Project number: _____ Date: _____

Attendant: _____ Supervisor: _____

PRE-ENTRY CHECKLIST

| | | ***YES*** | ***NO*** |
|---|---|---|---|
| 1. | Has the surrounding area been surveyed and found free of hazardous vapors from tanks, piping, sewers, vehicle exhausts, and other potential engulfment hazards? | ☐ | ☐ |
| 2. | Is the work area, in your opinion, likely to remain free of any dangerous air contaminants? | ☐ | ☐ |
| 3. | Have all personnel in the designated work are been briefed on proper work procedure and the location of communication, and who to contact in an emergency? | ☐ | ☐ |
| 4. | Have you been trained to properly operate the gas monitoring equipment? | ☐ | ☐ |
| 5. | Do all areas of work and machinery have some type of lock out/tag out installed in the proper place? | ☐ | ☐ |
| 6. | Has the atmosphere of the confined space area been tested prior to entry? | ☐ | ☐ |
| 7. | Did the atmosphere levels fall within the acceptable levels? | ☐ | ☐ |
| 8. | Will testing be done continuously while the space is occupied? | ☐ | ☐ |
| 9. | Is all safety equipment to be used in good condition and in proper working condition? | ☐ | ☐ |

NOTICE: If any of the above questions are answered “NO”, do not enter! Contact your immediate supervisor.

# Confined Space Entry Permit

BjERK BUILDERS, Inc.

## PART A - PROJECT INFORMATION

| | | |
|---|---|---|
| Project | Space name/ID | Purpose of entry |
| Controlling contractor | Entry contractor | Entry number |

## PART B - ENTRY INFORMATION AND PERSONNEL

| | | |
|---|---|---|
| Authorized entry date | Authorized entry times | Permit expires |
| Entry attendant | Entry supervisor | Competent person |
| Entrant | Entrant | Entrant |
| Entrant | Entrant | Entrant |

## PART C - ENTRY TYPE

*All spaces are unique and must be properly evaluated prior to each entry. Use forms and checklist in Part E of this Permit to document hazards, controls, elimination, PPE and atmospheric conditions. All entrants are to be aware of conditions and hazards and are to be given the opportunity to review any controls or atmospheric testing prior to entry.*

| | | | |
|---|---|---|---|
| ☐ | ***Temporary reclassification to non-permit space*** Requires signature by competent person verifying elimination/control of all hazards | Signature of competent person certifying reclassification | Date and Time |
| ☐ | ***Modified entry procedure for controllable atmospheric hazard only*** Requires competent person signature, continuous monitoring and mechanical ventilation | Signature of competent person authorizing modified entry | Date and Time |
| ☐ | ***Permit entry*** Requires identification of attendant, rescue method, adherence to all permit procedures | Signature of competent person authorizing modified entry | Date and Time |
| | ***Additional instructions*** If **YES**, list in Part E ☐ | | |
| | ***Additional permits required?*** If **YES**, attach ☐ | Signature of Attendant | Date and Time |

### Rescue Procedure

### Communication Procedure

# Confined Space Entry Permit (continued)

BjERK BUILDERS, Inc.

## PART D - ENTRY COMPLETE AND PERMIT CANCELLED

*Must be completed and signed by entry supervisor for permit-entry or competent person for reclassified space or modified entry procedure*

| Name | Signature | Date and Time |
|---|---|---|

Unexpected conditions or circumstances to be reported - Describe in *Part F Confined Space Entry Permit* (below)

## PART E - HAZARDS AND CONTROLS

*All confined spaces must be examined by a competent person and designated as a permit-required or non-permit space. Once a space has been designated by anyone (owner, general contractor or any sub-contractor) as a permit-required space, a competent person must evaluate the space and determine the means of entry to be followed. If questions 1-6 are all answered YES, the competent person may determine that the space can be temporarily reclassified as a non-permit space. If Questions 3–9 are all answered YES, the competent person may determine that the modified entry procedures applicable to spaces with only controllable atmospheric hazard potential can be used. If any of the questions 3-9 are answered NO, a space specific procedure must be developed and all permit-required confined space entry procedures must be followed. Use the confined space permit to document all permit entries, reclassifications, and modified entries.*

| **Pre-Entry Checklist - Use as a guide to determining entry** | **YES** | **NO** |
|---|---|---|
| 1. Has the surrounding area been surveyed and found free of hazardous vapors from tanks, piping,sewers or equipment exhaust? | ☐ | ☐ |
| 2. Is the inside and outside air safe for breathing and mechanical ventilation will not be needed? | ☐ | ☐ |
| 3. Have all hazards (except atmospheric), including those previously identified for the space been eliminated or controlled? | ☐ | ☐ |
| 4. Has any hazardous energy been controlled through a proper lock out procedure? | ☐ | ☐ |
| 5. Verified that work to be done inside the space will not create additional hazards? | ☐ | ☐ |
| 6. All entrants have been briefed on the potential hazards and been given the opportunity to verify hazard controls and atmospheric testing? | ☐ | ☐ |
| 7. If Questions 1 and/or 2 were answered NO - Has the atmosphere of the confined space area been tested and found safe for breathing prior to entry? | ☐ | ☐ |
| 8. If Questions 1 and/or 2 were answered NO – will continuous atmospheric monitoring be conducted while the space is occupied? | ☐ | ☐ |
| 9. If Questions 1 and/or 2 were answered NO – will continuous mechanical ventilation be provided while the space is occupied? | ☐ | ☐ |

| **Atmospheric Testing Results** | **Time** | **Time** | **Time** | **Time** | **non-IDLH values** |
|---|---|---|---|---|---|
| Oxygen level (O2) | | | | | Min 19.5% Max 23.5% |
| Flammability (LEL) | | | | | <10% |
| Hydrogen sulfide (H2S) | | | | | <1 ppm |
| Carbon monoxide (CO) | | | | | <5ppm |
| Other (specify) | | | | | |
| Other (specify) | | | | | |

# Confined Space Entry Permit (continued)

BjERK BUILDERS, Inc.

| Hazard | Controls Required for Acceptable Entry | PPE Required for Acceptable Entry |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

## PART F - ENTRY SUMMARY AND REVIEW

| | | |
|---|---|---|
| Project | Space name/ID | Purpose of entry |
| Controlling contractor | Entry contractor | Entry number |

### Entry Description/Summary

### What Went Well

### Items for Improvement

### Reviewed by

| | | |
|---|---|---|
| Name | Signature | Date and time |

# Confined Space Entry Review Sheet

Entry Date: _____ Job Number: _____

Job Description:

| |
|---|
| |

What went well?

| |
|---|
| |

What needs improvement?

| |
|---|
| |

Name of reviewer: _____ Position: _____

# Corrective Action Form

BjERK BUILDERS, Inc.

Work environment: _____ Date: _____

Competent person: _____ Employee: _____

Describe reason for corrective action:

Describe corrective action taken:

Describe future actions for violations of company policies and procedures:

| EMPLOYEE NAME | EMPLOYEE SIGNATURE | DATE |
|---|---|---|
| COMPETENT PERSON NAME | COMPETENT PERSON SIGNATURE | DATE |

# Crane Safety Checklist

| ADMINISTRATIVE: | STATUS (CHECK ONE) | | |
|---|---|---|---|
| | YES | NO | N/A |
| **Lift plan submitted, approved and on site** | ☐ | ☐ | ☐ |
| The lift plan must include; load chart representative of planned configuration and demonstrated to be out of critical range; maximum reach distance; boom length, angle, swing and anticipated load. All rigging including spreaders, if used, calculated in the overall load chart. Diagram representative of the crane pick and set up location. The lift plan must also identify all parties involved in the process; crane owner, crane operator, competent person, lift director, qualified riggers and signalers. Authorization for the placement of the crane must be signed by the property owner and/or their designated representative. Ground surface conditions should be assessed and known underground utilities must be identified. All parties should be familiar with the local weather forecast to include anticipated precipitation and wind speeds. | | | |
| **Certification and training for operator, riggers, and signalers** | ☐ | ☐ | ☐ |
| All crane operators must have a valid certification from National Commission for the Certification of Crane Operators (NCCCO) and this ID must be available at the worksite. Qualified signalers must meet the requirements of CFR 1926.1419; 1926.1422 and 1926.1428 and the documentation verifying their qualification must be at the work-site. A qualified rigger do not need certification training; they must meet the same qualifications as a competent person as defined by OSHA. They must possess the ability to recognize hazards associated with crane rigging and have the authority to take corrective action when they recognize unsafe conditions. | | | |
| **Annual crane service inspection** | ☐ | ☐ | ☐ |
| Annual comprehensive inspection documentation must be available for review at the work-site. The inspection report must include all items identified in CFR 1926.1412 (Subpart CC) and any additional requirements incorporated by reference by the crane manufacturer. The inspection report must list all items checked, date of inspection, name of qualified person doing the inspection and their signature. | | | |
| **Emergency Action Plan** | ☐ | ☐ | ☐ |
| The emergency action plan should include point of contact, physical address and telephone number of all primary contacts for the worksite, closest emergency response service provider, closest emergency room and/or urgent care center, on-call qualified crane service provider, identified utility owners, and facility owner. Routes of evacuation and emergency contact procedures for the lift should be incorporated into the plan. | | | |
| **Form FAA 7460-1–Notice of Proposed Construction or Alteration (when applicable)** | ☐ | ☐ | ☐ |
| When cranes or other equipment could interfere with airports and/or helipads, the competent person should complete the FAA7460-1 before beginning any work (45 days' notice is required). This would include military facilities, emergency responder aircraft (hospitals, police, FBI, forest service, etc.) and private runways. | | | |
| **Traffic Control Plan (when applicable)** | ☐ | ☐ | ☐ |
| When traffic will need to be altered as the result of an impending lift, the competent person should submit a Traffic Control Plan to Maricopa County Department of Transportation for review and approval. To make sure that deadlines are met without delay, this plan should be submitted approximately 15 working days prior to work starting. Arizona Revised Statute §28-641and §28-643 identifies that the Manual of Uniform Traffic Control Devices (MUTCD) and the current Arizona Department of Transportation (ADOT) supplement are the legal standards for traffic control devices for all jurisdictions within Arizona. Signs, barricades and channelizing devices shall be: 1) Installed prior to the start of any work; 2) Properly maintained and operated when restrictions exist; 3) Kept clean and fresh appearing at all times; 4) Kept in place only as long as needed; 5) Removed from travelled way during non-working hours when restriction no longer exists; 6) Removed from the right-of-way within two working days of completing work; 7) In accordance with MUTCD Standards. 8) Affixed with a 24-hour emergency telephone number on each device. *State and County references similar to those above may apply in states other than Arizona and shall be consulted to create a Traffic Control Zone.* | | | |

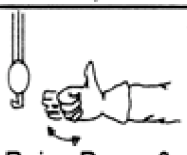
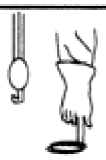
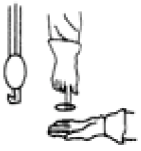
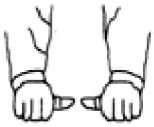
I have read the above information and the attached packet includes all the above documents.

Competent person: _____ Date: _____

| CRANES: | STATUS (CHECK ONE) | | |
|---|---|---|---|
| | YES | NO | N/A |
| **Verification of pre-lift crane inspection** | ☐ | ☐ | ☐ |
| Cranes must be inspected by the operator after set-up and prior to initial lift, before each shift, and after any malfunction. The inspection will, at a minimum, comply with the manufacturer's inspection guidelines, and must be in writing to include the operators name, signature and date of inspection. Inspection documentation must remain on site. | | | |
| **Verification of rigging equipment inspection** | ☐ | ☐ | ☐ |
| The rigger will inspect all rigging equipment daily for condition and will ensure the proper configuration and use of rigging equipment. The rigger is responsible for knowing and identifying the weight of items to be hoisted, and for ensuring that the rigging used is of sufficient capacity. At a minimum, the use and inspection of rigging equipment shall comply with 29 CFR 1926.251, applicable ANSI standards, and the manufacturer's recommendations and requirements. | | | |
| **Verification of crane load chart available for operator** | ☐ | ☐ | ☐ |
| The crane load chart must be available in the cab of the crane or other conspicuous place where the crane operator can access the chart. Computerized or electronic capacity-indicating or load-indicating devices, whether integral to the crane or not, will not be used to determine the capacity of the crane. These instruments will only be used to verify and confirm the capacities listed on the load chart. | | | |
| **Verification of communication system for operator, riggers and signalers** | ☐ | ☐ | ☐ |
| Signal persons must be qualified in accordance with 29 CFR 1926.1428. Documentation of qualifications for signal persons will remain on site during lift operations. The signal person is responsible for ensuring that the hoist path remains free and clear of obstructions and that no one walks under a hoisted load. The signal person is responsible for ensuring that the signaling method used between them and the crane operator is appropriate and agreed upon, and accommodates continuous communication. The signal person is responsible for immediately halting any lift if a condition or circumstance presents itself that may jeopardize the safety of personnel or the integrity of the crane. | | | |
| **Verification of swing radius flagged off** | ☐ | ☐ | ☐ |
| The swing radius will be free and clear of all obstructions. The entire swing radius of the crane including any attachments will be appropriately guarded using high-visibility flagging and signs. | | | |
| **Verification of pedestrian walkways closed and/or diverted** | ☐ | ☐ | ☐ |
| All pedestrian walkways that could place pedestrians under elevated loads or in close proximity to lift operations will be blocked and/or appropriately diverted to include warning signs that crane operations are in progress. The lift team will ensure that sufficient area is secured to include safe distance for catastrophic failure of load and/or crane. | | | |
| **Verification of overhead encumbrances identified and abated** | ☐ | ☐ | ☐ |
| The hoist path for crane operations will be pre-determined, and coordinated with all parties engaged in the crane lift plan. The presence or non-presence of overhead power lines and/or other obstructions will be identified during pre-lift planning and documented in the lift plan. | | | |

Competent person: _____ Date: _____

# Crane Hand Signals

| | | | | |
|---|---|---|---|---|
|  Main Hoist |  Auxiliary Hoist |  Hoist Load |  Hoist Load Slowly |  Stop |
|  Raise Boom |  Raise Boom & Lower Load |  Lower Load |  Lower Load Slowly |  Emergency Stop |
|  Lower Boom |  Lower Boom & Raise Load |  Swing Boom |  Swing Boom Slowly |  Travel (mobile eqpt) |
|  Retract Boom 2 hands |  Retract Boom 1 hand |  Extend Boom 2 hands |  Extend Boom 1 hand |  Dog Everything |

# Crane Lift Plan

BjERK BUILDERS, Inc.

## SITE INFORMATION

Job name: _____ Address: _____

Competent person: _____ Phone number: _____

### CRANE / OPERATOR

Model: _____

Base: _____

Counterweight: _____

Lift radius: _____

Crane capacity: _____

Operator name: _____

### CRANE LOAD

Hook: _____

Sling: _____

Rigging: _____

**Total rigging weight:** _____

Load: _____

**Total load:** _____

### CRANE RADIUS *Provide image (or drawing) of crane radius below.*

Title: _____

Project: _____ Customer: _____

Description: _____

Image drawn/provided by: _____ Date: _____

## CRANE SAFETY CHECKLIST

| | YES | NO | N/A |
|---|---|---|---|
| **Lift plan has been submitted and approved and is on site.** | ☐ | ☐ | ☐ |
| The lift plan must include: load chart representative of planned configuration and demonstrated to be out of critical range; maximum reach distance; boom length, angle, swing and anticipated load. All rigging including spreaders, if used, calculated in the overall load chart. Diagram representative of the crane pick and set up location. The lift plan must also identify all parties involved in the process: crane owner, crane operator, competent person, lift director, qualified riggers, and signalers. Authorization for the placement of the crane must be signed by the property owner and/or their designated representative. Ground surface conditions should be assessed and known underground utilities must be identified. All parties should be familiar with the local weather forecast to include anticipated precipitation and wind speeds. | | | |
| **Operator, riggers, and signalers have been trained and certified.** | ☐ | ☐ | ☐ |
| All crane operators must have a valid certification from National Commission for the Certification of Crane Operators (NCCCO) and this ID must be available at the worksite. Qualified signalers must meet the requirements of CFR 1926.1419; 1926.1422 and 1926.1428 and the documentation verifying their qualification must be at the work-site. A qualified rigger does not need certification training; they must meet the same qualifications as a competent person as defined by OSHA. They must possess the ability to recognize hazards associated with crane rigging and have the authority to take corrective action when they recognize unsafe conditions. | | | |

## JOB SAFETY ANALYSIS

| *Required personal protective equipment:* | *SDS(s) associated with the job:* |
|---|---|
| | |

| *Common hazards* | *Common safe job practices* |
|---|---|
| **Slips, trips, and falls** | • Use of personal fall protection system is mandated when working where employees are exposed to falls greater than 6 feet.<br>• To reduce the risk of slipping, non-skid material has been applied to walkways and platforms. However, walkways and platforms can be slippery when wet and oil or grease is spilled on them. *Keep walkways and platforms clean and dry to prevent slipping.*<br>• Ensure boots are free from any mud or debris before climbing onto the crane or entering the crane cab.<br>• Do not use the top of boom or jib as a walkway.<br>• Maintain three points of contact while climbing onto and off of cranes and use the handrails, steps, and ladders provided.<br>• Lift tools and other equipment which cannot be carried in pockets or tool belts onto and off of the crane with hand lines or hoists. |
| **Crushing injury hazard** | • Barricade all accessible areas to crane so personnel cannot be struck or crushed when loads are being swung.<br>• Do not climb onto or off of the crane while it is being traveled.<br>• Signal the operator that you need to climb onto or off of the crane.<br>• Operator: do not swing or travel while personnel are climbing onto or off of the crane. Stop swing and travel motions. Apply swing brake as necessary.<br>• Use dedicated spotters and signal persons when flying objects with cranes.<br>• Use tag lines. |
| **Struck by / caught between / pinch point hazards** | • Hard hats, safety glasses, and gloves shall be worn at all times during the assembly/disassembly of this crane.<br>• Never handle wire rope with bare hands. Always wear heavy-duty gloves to prevent being cut by broken wires.<br>• Do not attempt to maintain or repair any part of the crane while the engine is running unless absolutely necessary.<br>• If the engine must be run, keep your clothing and all parts of your body away from moving parts. Maintain constant verbal communication between the person at the controls and the person performing maintenance or repair procedures.<br>• Do not use your hands to check for air or hydraulic oil leaks.<br>• Relieve pressure before disconnecting air, coolant, and hydraulic lines and fittings.<br>• Do not attempt to lift heavy components by hand. Use a hoist, jacks, or blocking to lift components.<br>• Store tools, oil cans, spare parts, and other necessary equipment in tool boxes. Do not allow these items to lie around loose in the operator's cab or on walkways or stairs.<br>• Use dedicated spotters to direct and signal all vehicle traffic.<br>• Before a crew member goes to a location that is out of view of the operator and in, on, or under the equipment (or near enough that its movement could injure the crew member), the crew member must inform the operator they are going to that location. The operator must then not move any part of the equipment (or load) until informed (in accordance with a prearranged system of communication) the crew member is in a safe position. |

| *Common hazards* | *Common safe job practices* |
|---|---|
| **Designate assembly areas** | • Select a good location to assemble the crane.<br>• Ensure ground conditions are firm, level, and uniformly supportive in compliance with the engineer's soil data.<br>• Select an area large enough and free of any underground or overhead obstructions or hazards to accommodate the crane, selected boom and jib length, and movement of trailers.<br>• Erection area should not interfere with or pose a hazard to other onsite personnel. Erection area is to be clearly marked and barricaded. |
| **Assist crane requirements** | • The assist crane shall be sized in accordance with site restrictions and manufacturer's specifications.<br>• Site conditions and matting must be suitable for maximum loading of the assist crane.<br>• The assist crane will be assembled in accordance with the manufacturer's instructions. |
| **Rigging failure** | • Rigging shall be inspected per applicable OSHA/ASME standards, at a minimum, daily and prior to use. Examples of unserviceable rigging wire or rope would be bird caging, kinks, and broken wires. |
| **Electrical shock hazard** | • Ensure adequate clearance from power lines is continuously maintained per ASME B30.5. |
| **Operational test loads (if required)** | • Test loads shall not exceed 100% of the manufacturer's load rating.<br>• Test loads shall never exceed 110% of the manufacturer's load rating.<br>• Test loads must be freely suspended. Testing using anchored loads is prohibited.<br>• All rigging must be inspected and approved prior to load-testing.<br>• The weight and radius of the load test shall be determined by:<br>» manufacturer's load chart<br>» site conditions<br>• Winch line pull (i.e. the test load must be lifted while staying within the line-pull capacity of the drum utilized.) |

*Note: At no time will a trainee, apprentice, or oiler operate any crane during the assembly, reconfiguration, and/or disassembly process or while the crane is in bypass.*

| *Basic job steps* | *Potential hazards* | *Safe job practices* |
|---|---|---|
| **Position crane in assembly area or work area**<br>• ensure crane is level with 1%<br>• preassemble meeting with all personnel involved<br>• address any underground or overhead obstacle<br>• allow only authorized personnel in work area | • see common hazards above | • see common safe job practices above<br>• follow manufacturer's instructions for crane setup and determining crane capacity<br>• assign a qualified signal person<br>• confirm all stop signals and ensure anyone can stop crane activity for potential problems or unsafe acts |
| **Set crane on half outriggers**<br>• ensure crane is level within 1%<br>• inspect crane<br>• set outrigger floats on matting<br>• take boom out of cradle/dolly (if rqeuired)<br>• chalk and secure dolly (if required) | • see common hazards above | • see common safe job practices above<br>• ensure 100% support/blocking/ matting under outrigger floats |

| *Basic job steps* | *Potential hazards* | *Safe job practices* |
|---|---|---|
| **Install matting/blocking**<br>• use spotters on tractor/trailers | • see common hazards above<br>• tipping hazard<br>• struck-by hazard | • see common safe job practices above<br>• follow manufacturer's instructions for crane setup and determining crane capacity<br>• ensure tag lines are used |
| **Extend outriggers to full**<br>• confirm crane remains within 1% level<br>• red tape 360 degrees around crane | • see common hazards above<br>• tripping hazard | • see common safe job practices above<br>• follow manufacturer's instructions for crane setup and determining crane capacity |
| **Reeve or rig crane as required** | • see common hazards above<br>• hand injury / cut abrasions<br>• crushing hazard<br>• pinch points | • see common safe job practices above<br>• inspect cables to ensure safe handling<br>• all employees shall wear required PPE (leather gloves are mandatory) |
| **Install swing-away jib (if required)**<br>• lower main boom to the ground<br>• extend boom to the fly jib<br>• remove winch rope and set aside<br>• remove jib connecting pins from storage holder | • see common hazards above | • see common safe job practices above |
| **Install connecting pins**<br>• ensure pin keepers are installed | • see common hazards above<br>• struck by / crushing hazard | • see common safe job practices above<br>• ensure pins are properly installed before operating the crane |
| **Reeve crane as required** | • see common hazards above<br>• hand injury / cut abrasions<br>• crushing hazard<br>• pinch points | • see common safe job practices above<br>• inspect cables to ensure safe handling<br>• all employees shall wear required PPE (leather gloves are mandatory) |
| **Make electrical connections** | • see common hazards above | • see common safe job practices above |
| **Conduct required pre-lift inspections**<br>• perform final crane and rigging inspections<br>• hold a pre-lift meeting | • see common hazards above | • see common safe job practices above<br>• assign a qualified signal person<br>• confirm all stop signals and ensure anyone can stop crane activity for potential problems or unsafe acts |

## *Additional comments*

*Below, list any additional observations or comments regarding this job task.*

## SIGNATURES

| | | |
|---|---|---|
| PROPERTY OWNER | SIGNATURE | DATE |
| CRANE OPERATOR | SIGNATURE | DATE |
| COMPETENT PERSON | SIGNATURE | DATE |
| LIFT DIRECTOR | SIGNATURE | DATE |
| QUALIFIED RIGGER | SIGNATURE | DATE |
| QUALIFIED RIGGER | SIGNATURE | DATE |
| QUALIFIED SIGNALER | SIGNATURE | DATE |
| QUALIFIED SIGNALER | SIGNATURE | DATE |
| SAFETY REPRESENTATIVE | SIGNATURE | DATE |

*This job safety analysis is intended to comply with "Assembly/Disassembly—Employer Procedures—General Requirements," Cranes and Derricks in Construction, 73 Fed. Reg. 59924 (to be codified at 29 C.F.R. Pt 1926) (proposed October 9, 2008), to be used by Bjerk Builders and its respective employees only and shall not be distributed to third-parties without the express written consent of Bjerk Builders.*

# Daily Job Hazard Analysis

BjERK BUILDERS, Inc.

## GENERAL INFORMATION

| DATE: |
|---|

| PROJECT NUMBER | PROJECT NAME | GENERAL CONTRACTOR |
|---|---|---|
| | | |

| PROJECT ADDRESS | CITY | STATE | ZIP |
|---|---|---|---|
| | | | |

| NEAREST MEDICAL FIRST AID CENTER | ADDRESS | CITY | PHONE |
|---|---|---|---|
| | | | |

| NEAREST TRAUMA CENTER (HOSPITAL) | ADDRESS | CITY | PHONE |
|---|---|---|---|
| | | | |

## ACCOUNTABLE PERSONNEL AND AUTHORIZED AGENTS

| PROJECT MANAGER | |
|---|---|
| NAME | |
| EMAIL | |
| CELL | |

| SUPERINTENDENT | |
|---|---|
| NAME | |
| EMAIL | |
| CELL | |

| FOREMAN | |
|---|---|
| NAME | |
| EMAIL | |
| CELL | |

| SAFETY REPRESENTATIVE | |
|---|---|
| NAME | |
| EMAIL | |
| CELL | |

| COMPETENT PERSON | |
|---|---|
| NAME | |
| EMAIL | |
| CELL | |

| EMERGENCY CONTACT PERSON | |
|---|---|
| NAME | |
| EMAIL | |
| CELL | |

| CREW SIGNATURE | |
|---|---|
| NAME | |
| SIGNATURE | |
| CELL | |

| CREW SIGNATURE | |
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| NAME | |
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| NAME | |
| SIGNATURE | |
| CELL | |

| RISK MANAGER | | | | |
|---|---|---|---|---|
| Premier Risk Management | WEB | www.premierrm.com | PHONE | 800-980-RISK |

## SITE INFORMATION

| SEQUENCE OF STEPS | POTENTIAL HAZARDS | RECOMMENDED ACTIONS/PROCEDURES |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| AUTHORIZED WORK DAYS | AUTHORIZED WORK HOURS |
|---|---|
| | |

## SCOPE OF WORK

| BRIEF DESCRIPTION OF PROJECT |
|---|
| |

### *Engineering Controls and PPE*

- ☐ PFS/guard rails
- ☐ GFCI
- ☐ Hard hats
- ☐ Guard rails
- ☐ Respiratory protection
- ☐ Gloves
- ☐ Trench fence
- ☐ Safety glasses
- ☐ LOTO

### *Environmental Hazards*

- ☐ Confined Spaces
- ☐ Asbestos
- ☐ Lead
- ☐ Silica Dust

### *Identifiable Exposures*

- ☐ Fall-from height
- ☐ Excavation/trenches
- ☐ Ladders
- ☐ Scaffolds
- ☐ Cranes
- ☐ Electric shock
- ☐ Lasers
- ☐ Pedestrians
- ☐ Traffic

### *Alternate Procedures*

- ☐ Safety monitors
- ☐ Controlled access zone

### *Other Considerations*

### *Additional Comments/Suggestions*

# Energized Work Permit

BjERK BUILDERS, Inc.

This Energized Work Permit is not valid until all line items have been completed and detailed work procedures have been submitted and approved.

All signature blocks must be signed by Authorized Individuals and signatures verified.

## DE-ENERGIZED PARTS

Energized parts to which an employee may be exposed shall be de-energized before the employee works on or near them unless the employer can demonstrate de-energizing introduces additional or increased hazards, or is infeasible due to equipment design or operational limitations.

Examples of increased or additional hazards include: 1) interruption of life support equipment, 2) deactivation of emergency alarm systems, 3) shutdown of hazardous location ventilation equipment, and 3) removal of illumination for an area.

Instances in which work may be performed on or near energized circuit parts because equipment design or operational limitations make de-engergizing infeasible include: 1) testing of electric circuits requiring circuit energized, and 2) working on circuits forming an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

24/7 Data Centers are not “mission-critical”; *no electrical work may be done in power cabinets/centers in which any portion of the cabinet is energized.*

---

## SECTION 1: TO BE COMPLETED BY THE REQUESTER

| | Check when complete |
|---|---|
| 1. Description of circuit/equipment/job locations: | ☐ |
| 2. Description of work to be done: | ☐ |
| 3. Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage: | ☐ |

| REQUESTER / FACILITY OWNER | SIGNATURE | DATE |
|---|---|---|

## SECTION 2: TO BE COMPLETED BY THE QUALIFIED PERSONS *DOING* THE WORK

| | Check when complete |
|---|---|
| 1. Detailed job description procedure to be used in performing the previously detailed work: | ☐ |
| 2. Description of the Safe Work Practices to be employed: | ☐ |
| 3. Results of the Task Hazard Analysis: | ☐ |
| 4. Determination of Shock Protection Boundary: | ☐ |
| 5. Results of the Flash Hazard Analysis: | ☐ |
| 6. Determination of the Flash Protection Boundary: | ☐ |
| 7. Necessary personal protective equipment to safely perform the assigned task: | ☐ |
| 8. Means employed to restrict the access of unqualified persons from the work: | ☐ |
| 9. Evidence of completion of a Job Briefing including discussion of any job-related hazards: | ☐ |

10. Do you agree the work can be completed safely? ◯ YES ◯ NO (If NO, return to requester)

*By signing below, I am certifying I have reviewed Section 1 of this Energized Work Permit and completed Section 2 of this Energized Work Permit. This Energized Work Permit request meets the minimum requirements of the Code of Federal Regulations, National Fire Protection Agency (NFPA 70E), and the National Electric Code, as applicable. It is my recommendation the permit be approved.*

| QUALIFIED TECHNICIAN | SIGNATURE | DATE |
|---|---|---|
| CONTRACTOR (PROJECT MANAGER) | SIGNATURE | DATE |

## SECTION 3: APPROVAL(S) TO PERFORM THE WORK WHILE ENERGIZED

*By signing this Energized Work Permit I am certifying I have reviewed section 1 and section 2 of this completed Energized Work Permit. This Energized Work Permit request meets the minimum requirements of the Code of Federal Regulations, National Fire Protection Agency (NFPA 70E) and the National Electric Code. I am authorizing the work to proceed as described in this Energized Work Permit.*

| | | |
|---|---|---|
| CLIENT REPRESENTATIVE REQUESTING WORK | SIGNATURE | DATE |
| FACILITIES MANAGER | SIGNATURE | DATE |
| PROJECT MANAGER | SIGNATURE | DATE |
| (GC) SAFETY MANAGER | SIGNATURE | DATE |
| (GC) PROJECT SUPERINTENDENT | SIGNATURE | DATE |
| DIRECTOR OF FIELDS OPERATIONS | SIGNATURE | DATE |

# Excavation Checklist

BjERK BUILDERS, Inc.

*To be completed by a competent person.*

Site location: _____

Date: _____ Time: _____ Competent person: _____

Soil type (See attached form): _____

Soil classification: _____ Excavation depth: _____ Excavation width: _____

Type of protective system used: _____

| 1. GENERAL INSPECTION OF WORKPLACE | YES | NO | N/A |
|---|---|---|---|
| A. Excavations, adjacent areas, and protective systems inspected by a competent person daily before the start of work. | ☐ | ☐ | ☐ |
| B. Competent person has the authority to remove employees from the excavation immediately. | ☐ | ☐ | ☐ |
| C. Surface encumbrances removed or supported. | ☐ | ☐ | ☐ |
| D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation. | ☐ | ☐ | ☐ |
| E. Hard hats worn by all employees. | ☐ | ☐ | ☐ |
| F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation. | ☐ | ☐ | ☐ |
| G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc. | ☐ | ☐ | ☐ |
| H. Walkways and bridges over excavations four feet or more in depth are equipped with standard guard-rails and toe boards. | ☐ | ☐ | ☐ |
| I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic. | ☐ | ☐ | ☐ |
| J. Employees required to stand away from vehicles being loaded or unloaded. | ☐ | ☐ | ☐ |
| K. Warning system established and utilized when mobile equipment is operating near the edge of the excavation. | ☐ | ☐ | ☐ |
| L. Employees prohibited from going under suspended loads. | ☐ | ☐ | ☐ |
| M. Employees prohibited from working on the faces of slopes or benched excavations above other employees. | ☐ | ☐ | ☐ |

| 2. UTILITIES | YES | NO | N/A |
|---|---|---|---|
| A. Utility companies contacted and/or utilities located. | ☐ | ☐ | ☐ |
| B. Exact location of utilities marked. | ☐ | ☐ | ☐ |
| C. Underground installations protected, supported, or removed when excavation is open. | ☐ | ☐ | ☐ |

| 3. MEANS OF ACCESS AND EGRESS | YES | NO | N/A |
|---|---|---|---|
| A. Lateral travel to means of egress no greater than 25 feet in excavations four feet or more in depth. | ☐ | ☐ | ☐ |
| B. Ladders used in excavations secured and extended three feet above the edge of the trench. | ☐ | ☐ | ☐ |
| C. Structural ramps used by employees designed by a competent person. | ☐ | ☐ | ☐ |
| D. Structural ramps used for equipment designed by a registered professional engineer (RPE). | ☐ | ☐ | ☐ |
| E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface. | ☐ | ☐ | ☐ |
| F. Employees protected from cave-ins when entering or exiting the excavation. | ☐ | ☐ | ☐ |

| 4. WET CONDITIONS | YES | NO | N/A |
|---|---|---|---|
| A. Precautions taken to protect employees from the accumulation of water. | ☐ | ☐ | ☐ |
| B. Water removal equipment monitored by a competent person. | ☐ | ☐ | ☐ |
| C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation. | ☐ | ☐ | ☐ |
| D. Inspections made after every rainstorm or other hazard-increasing occurrence. | ☐ | ☐ | ☐ |

| 5. HAZARDOUS ATMOSPHERE | YES | NO | N/A |
|---|---|---|---|
| A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard. | ☐ | ☐ | ☐ |
| B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres. | ☐ | ☐ | ☐ |
| C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas. | ☐ | ☐ | ☐ |
| D. Testing conducted often to ensure that the atmosphere remains safe. | ☐ | ☐ | ☐ |
| E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist. | ☐ | ☐ | ☐ |
| F. Employees trained to use personal protective and other rescue equipment. | ☐ | ☐ | ☐ |
| G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations. | ☐ | ☐ | ☐ |

| 6. SUPPORT SYSTEMS | YES | NO | N/A |
|---|---|---|---|
| A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads. | ☐ | ☐ | ☐ |
| B. Tabulated data for system is available on site. | | | |
| C. Materials and equipment used for protective systems inspected and in good condition. | ☐ | ☐ | ☐ |
| D. Materials and equipment not in good condition have been removed from service. | ☐ | ☐ | ☐ |
| E. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service. | ☐ | ☐ | ☐ |
| F. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment. | ☐ | ☐ | ☐ |
| G. Members of support system securely fastened to prevent failure. | ☐ | ☐ | ☐ |
| H. Support systems provided ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc. | ☐ | ☐ | ☐ |
| I. Excavations below the level of the base or footing supported, approved by an RPE. | ☐ | ☐ | ☐ |
| J. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure. | ☐ | ☐ | ☐ |
| K. Backfilling progresses with removal of support system. | ☐ | ☐ | ☐ |
| L. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth. | ☐ | ☐ | ☐ |
| M. Shield system placed to prevent lateral movement. | ☐ | ☐ | ☐ |
| N. Employees are prohibited from remaining in shield system during vertical movement. | ☐ | ☐ | ☐ |

# Excavation Daily Inspection

BjERK BUILDERS, Inc.

Date: _____ Signature: _____

Weather: _____ Project: _____

Was the call system contacted? ◯ YES ◯ NO

Protective system(s): ◯ Trench shield (box) ◯ Wood shoring ◯ Sloping ◯ Other(s) _____

Purpose(s) of trenching: ◯ Drainage ◯ Water ◯ Sewer ◯ Gas ◯ Other(s) _____

Were visual soil tests made? ◯ YES ◯ NO

If YES, what type? _____

Were manual soil tests made? ◯ YES ◯ NO

If YES, what type? _____

Type of soil: ◯ Stable rock ◯ Type A ◯ Type B ◯ Type C

Were there surface encumbrances? ◯ YES ◯ NO

If YES, what type? _____

Water conditions: ◯ Wet ◯ Dry ◯ Submerged

Is the atmosphere hazardous in any way? ◯ YES ◯ NO
*If YES, follow confined space entry procedures policy, complete Confined Space Entry permit, and monitor for toxic gas(es).*

Is trenching or excavation exposed to public vehicular traffic (exhaust emission)? ◯ YES ◯ NO
*If YES, follow confined space entry procedures policy, complete Confined Space Entry permit, and monitor for toxic gas(es).*

Measurements of trench: Depth: _____ Length: _____ Width: _____

Is ladder within 25 feet of all workers? ◯ YES ◯ NO

Is excavated material stored two or more feet from edge of excavation? ◯ YES ◯ NO

Are employees exposed to public vehicular traffic? ◯ YES ◯ NO

Are other utilities (water, sewer, gas, or other structures) protected? ◯ YES ◯ NO

Are sewer or natural gas lines exposed? ◯ YES ◯ NO
*If YES, follow confined space entry procedures policy, complete Confined Space Entry permit, and monitor for toxic gas(es).*

Are periodic inspections performed? ◯ YES ◯ NO

Did employees receive training in excavating? ◯ YES ◯ NO

# Fire Prevention Checklist

| *Monthly inspections on following items:* | YES | NO |
|---|---|---|
| 1. Ready access to any and all buildings. | ☐ | ☐ |
| 2. Ready egress from any and all buildings. | ☐ | ☐ |
| 3. Ready access to all fire fighting equipment. | ☐ | ☐ |
| 4. All fire fighting equipment conspicuously located. | ☐ | ☐ |
| 5. Temporary or permanent water supply when combustibles on site. | ☐ | ☐ |
| 6. Keep any stored material at least 36" from access and egress doors. | ☐ | ☐ |
| 7. Exit signs at all exit locations. | ☐ | ☐ |
| 8. Flammable material kept in fire resistant cabinet. | ☐ | ☐ |
| 9. Flammable material stored at least 50' from any ignition source. | ☐ | ☐ |

| *Miscellaneous Fire Prevention Requirements include:* | YES | NO |
|---|---|---|
| 1. Monthly inspections logged on all fire extinguishers. | ☐ | ☐ |
| 2. Annual servicing for fire extinguishers (when applicable) | ☐ | ☐ |
| 3. Proper fire extinguishers in appropriate areas. | ☐ | ☐ |
| 4. Fire extinguishers for every 3000 square feet of building. | ☐ | ☐ |
| 5. Travel distance to any fire extinguisher no more than 100'. | ☐ | ☐ |
| 6. Fire extinguishers for every floor of a building. | ☐ | ☐ |
| 7. One fire extinguisher adjacent to stairwells for every floor. | ☐ | ☐ |

| *Emergency evacuation plan must include:* | YES | NO |
|---|---|---|
| 1. Designated meeting area. | ☐ | ☐ |
| 2. Evacuation route and procedures. | ☐ | ☐ |
| 3. Procedure for accounting for all personnel. | ☐ | ☐ |
| 4. The means of alerting employees to an emergency. | ☐ | ☐ |
| 5. The means for an employee to report an emergency. | ☐ | ☐ |

# Hot Work Permit

BjERK BUILDERS, Inc.

Date issued: _____ Issued by: _____

Location of hot work: _____

Type of hot work: ☐ Welding ☐ Cutting ☐ Grinding ☐ Other: _____

Permit expiration date/time: _____ Job description: _____

## SAFETY REQUIREMENTS

***The person issuing this permit has required the following safety precautions and indicated by his initials that the following circled items have been established prior to issuing this permit.***

| Precaution | Initials of Issuing Authority |
|---|---|
| No flammables/combustibles within 50 feet | |
| Fully charged extinguisher at work area | |
| Fire watch(es) briefed and stationed | |
| Adequate ventilation established | |
| Welding curtains or shields | |
| Respirators used | |
| Hot work personal protective equipment | |
| Warning signs posted | |
| Welding/cutting equipment inspected | |
| Certified welder | |
| Surrounding equipment is locked out/tagged out | |
| No flammable/combustible gasses in area | |
| Confined space entry permit issued | |
| Access to work area controlled | |

| Task Started / Fire Watch Posted | | | | Task Completed | | | |
|---|---|---|---|---|---|---|---|
| Date: | | Time: | | Date: | | Time: | |

| Fire Watch / Permit Ended<br>*Must be 30 minutes past completed task* | | | |
|---|---|---|---|
| Date: | | Time: | |

Return completed permit to: _____

# Incident Protocols

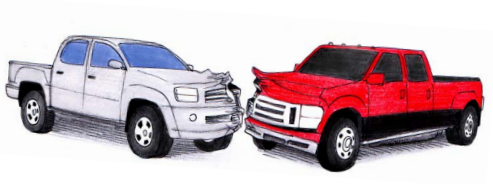
BjERK BUILDERS, Inc.

## Work-Related Injuries

1. Attend to the needs of the injured worker. Call 911 for any severe or life-threatening injury.
2. Notify the business office with the basic information. If the injury occurs outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
3. Identify and secure or eliminate the hazard.
4. Gather written statements from witnesses.
5. Complete the Incident Report and the Supplemental Report.
6. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.

*All injuries regardless of severity must be reported to the business office immediately.*
**ALL INJURED** *employees are required to participate in the company’s mandatory post-incident substance testing program.*
**DO NOT** *discuss specific details related to any on the job injury with anyone other than an authorized representative of the Company.*

## Automobile Collisions



1. Notify emergency services (call 911) and attend to injured parties.
2. Contact local law enforcement for incident response and/or report. Minor incidents may not warrant a response, but a report number is required.
3. Notify the business office with the basic information. If the collision occurs outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
4. Note the location of all vehicles involved (take photographs if possible).
5. If your vehicle is operable, remove it to a safe area away from the path of moving traffic.
6. Gather written statements from witnesses or obtain names, addresses and telephone numbers of witnesses.
7. Complete the Incident Report and Supplemental Report.
8. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.

**ALL EMPLOYEES** *are required to participate in the company’s mandatory post-incident substance testing program.* **NEVER** *admit fault.*
**DO NOT** *discuss details of the incident with anyone other than a uniformed police officer and an authorized representative of the Company.*

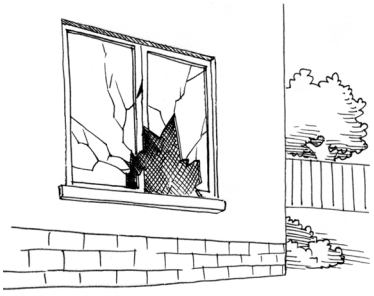
## Regulatory Inspections

1. Escort the regulatory inspector to a job trailer or other area away from the active workplace.
2. Verify the credentials of the regulatory inspector and determine the purpose and focus of the inspection.
3. Notify a member of management of the inspector’s presence and purpose. If one is not immediately available, continue to contact them until they have been notified, a voice mail message is not acceptable notification.
4. Advise the regulatory inspector that your company’s representative is en route and request that they wait for their arrival.
5. Unless otherwise directed stay with the regulatory inspector until an authorized representative from the Company arrives at the workplace.
6. If the regulatory official starts the inspection prior to an authorized representative’s arrival, accompany the inspector through the entire process. Document and photograph any deficiencies identified by the inspector
7. Forward any pertinent documents received from the inspector to a member of the business office within 24 hours.

***NEVER*** deny access to or argue with a regulatory inspector. Answer all questions directly, but do not volunteer information that is not requested.
**NEVER** allow a regulatory inspector to walk your workplace unescorted. Ensure that the regulatory inspector wears the required Personal Protective Equipment while on your workplace.

## Third Party Liability

1. Any person that is not directly associated with your work environment who alleges physical damage, bodily injury, or other forms of loss should be referred to the business office. If they deliver documentation or volunteer information related to their claim, forward it IMMEDIATELY to the business office.
2. Notify the business office with the basic information. If the alleged incident occurs outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
3. Complete the Incident Report and Supplemental Report.
4. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.



**NEVER** *accept liability under any circumstance.*
**DO NOT** *discuss details of the incident with anyone other than a uniformed police officer and an authorized representative of the Company.*

## Equipment Damage

1. Notify the business office with the basic information. If the incident occurs outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
2. Note the location of damaged equipment (take photographs if possible).
3. Gather written statements from witnesses or obtain names, addresses and telephone numbers of witnesses.
4. Complete the Incident Report and Supplemental Report.
5. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.

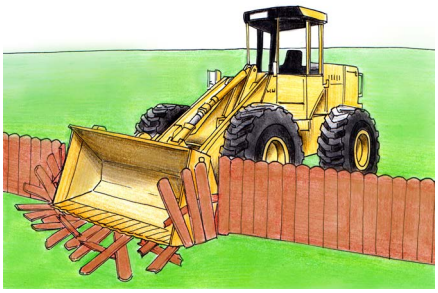
*All employees involved in damaging equipment are required to participate in the company’s mandatory post-incident substance testing program. Do not discuss details of the incident with anyone other than an authorized representative of the Company.*

## Utility Damage

1. Contact the utility company and request that a representative inspect the damage.
2. Secure the location and follow up with the utility company until the representative responds.
3. Notify the business office with the basic information. If the incident occurs outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
4. Take pictures of the damaged utility and location of all Arizona 811 (Blue Stake) markers.
5. Gather written statements from witnesses or obtain names, addresses and telephone numbers of witnesses.
6. Complete the Incident Report and Supplemental Report.
7. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.
8. Have owner’s representative sign the responsibility form. Include the name and number of the utility representative.

**ALL EMPLOYEES** *are required to participate in the company’s mandatory post-incident substance testing program.* **NEVER** *accept responsibility for damaged utilities.*
**DOCUMENT** *all conversations and log telephone calls including names and telephone numbers with those related to the incident. When a formal response is necessary the business office will make it.*

## Property Damage



1. If the incident involves an unattended vehicle or fixed object, take reasonable steps to locate and notify the owner. If the owner cannot be found, leave a notice on the vehicle or object, listing your name, the company’s name, address, telephone number and the name of a representative at the Company to contact.
2. Notify the business office with the basic information. If the incident occurs outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
3. Take pictures of the damage and any equipment that may have been involved in the incident.
4. Complete the Incident Report and Supplemental Report.
5. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.

**NEVER** *accept responsibility for Property Damage.* **DO NOT** *attempt to make settlement.*
**DO NOT** *discuss details of the incident with anyone other than an authorized representative of the Company.* **ALL EMPLOYEES** *involved in incident are required to participate in the company’s mandatory post-incident substance testing program.*

## Theft

1. Notify the police department and request a police report.
2. Notify the business office with the basic information. If you discover the theft outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
3. Gather written statements from witnesses, if any, including their names, addresses and telephone numbers.
4. Complete the Incident Report and Supplemental Report.
5. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.

## Vandalism

1. Notify the police department and request a police report.
2. Notify the business office with the basic information. If you discover the vandalism outside of normal office hours, leave a voice message in the general delivery mailbox and follow up with the business office to verify that the message was received.
3. Gather written statements from witnesses, if any, including their names, addresses and telephone numbers.
4. Complete the Incident Report and Supplemental Report.
5. Turn in completed detailed reports to the business office, central mail slot “Incident Reports”, within 24 hours.

# IN CASE OF WORK-RELATED INJURY

## IMMEDIATELY NOTIFY YOUR SUPERVISOR AND GO TO THE NEAREST MBI CLINIC

www.mbiclinics.com

MEDICINE FOR BUSINESS AND INDUSTRY

### 1 MBI NORTHWEST
15236 N. 59th Ave.
Glendale, AZ 85306
p: (602) 337-8356
f: (602) 337-8364

**HOURS**
Monday-Friday
8:00am-5:00pm

### 2 MBI KYRENE
8820 S. Kyrene Rd.
Tempe, AZ 85284
p: (480) 466-7522
f: (480) 466-7801

**HOURS**
Monday-Friday
8:00am-5:00pm

### 3 MBI SKY HARBOR
4013 E. Broadway Rd., Ste A
Phoenix, AZ 85040
p: (602) 437-0234
f: (602) 437-2525

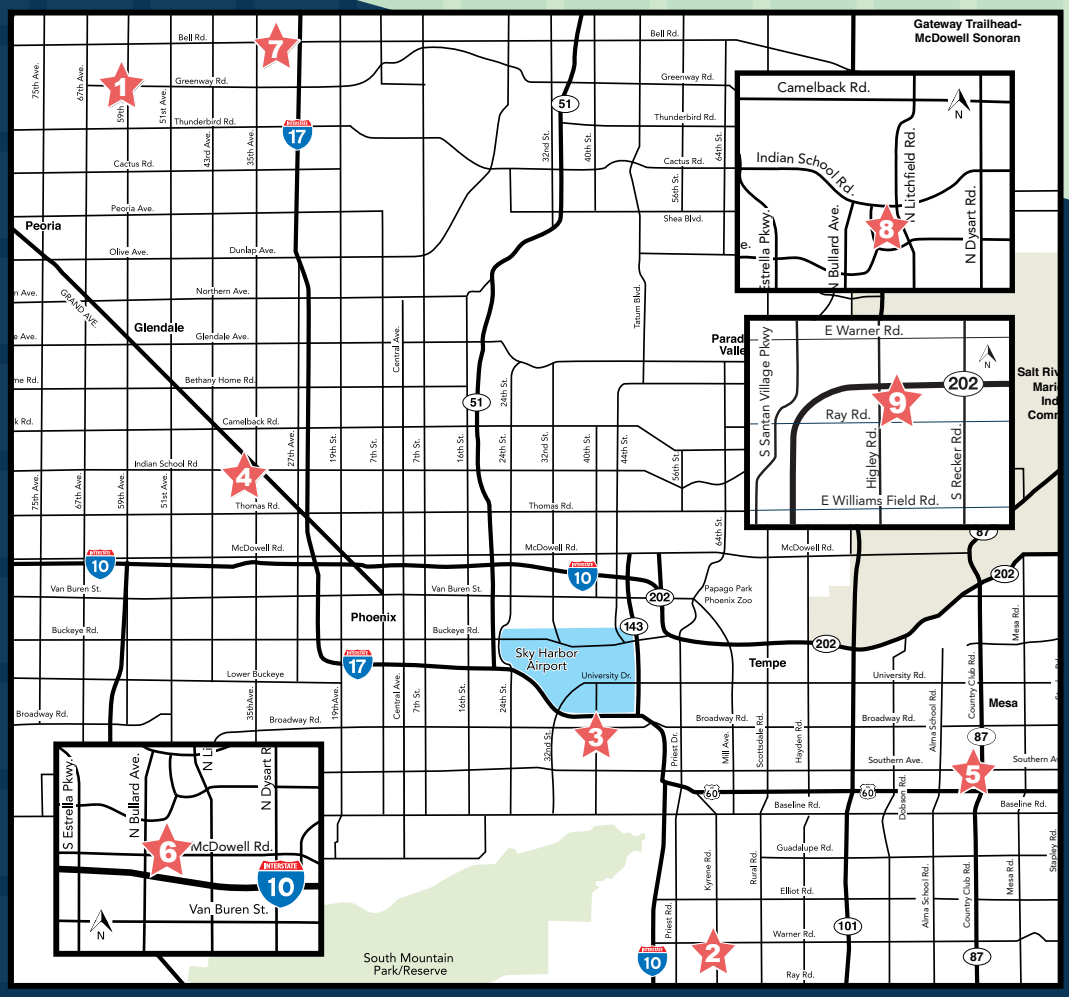
**HOURS**
Monday-Friday
7:00am-7:00pm
**EXTENDED HOURS**

### 4 MBI WEST
3501 W. Osborn Rd.
Phoenix, AZ 85019
p: (602) 272-7676
f: (602) 272-1883

**HOURS**
Monday-Friday
7:00am-10:00pm
Saturday 8:00am-6:00pm
**EXTENDED HOURS**

### 5 MBI MESA
1440 S. Country Club Dr.
Mesa, AZ 85210
p: (480) 629-5592
f: (480) 629-5480

**HOURS**
Monday-Friday
7:00am-6:00pm
Saturday 8:00am-12:00pm
**EXTENDED HOURS**




### 6 MBI GOODYEAR
14419 W. McDowell Rd.
Goodyear, AZ 85395
p: (623) 248-1950
f: (623) 248-1936

**HOURS**
Monday-Friday
7:00am-7:00pm
Saturday
8:00am-5:00pm
**EXTENDED HOURS**

### 7 MBI BELL ROAD & I17
3033 W. Bell Rd., Ste 100A
Phoenix, AZ 85053
p: (623) 440-7628
f: (623) 440-7928

**HOURS**
Monday-Friday
8:00am-5:00pm
**NEW LOCATION**

### 8 MBI LITCHFIELD
3328 N. Litchfield Rd.
Goodyear, AZ 85395
p: (623) 250-3490
f: (623) 250-4910

**HOURS**
Monday-Friday
8:00am-5:00pm
**NEW LOCATION**

### 9 MBI GILBERT
1537 S. Higley Rd.
Gilbert AZ 85296
p: (480) 900-4665
f: (480) 900-4788

**HOURS**
Monday-Friday
8:00am-5:00pm
**NEW LOCATION**

After Hours
Injury Care/Triage

Call: (602) 272-7676

***For Medical Emergencies, Dial 911**

## Necessary Information

1. Your Name  2. Worksite location / Project Number  3. Location of incident  4. Type of Incident:

| Injury | Collision | Third-party Liability | Equipment Damage |
|---|---|---|---|
| • Name of injured employee • Nature and severity of the injury (minor, severe, life threatening) | • Name of involved employee(s) and others • If there are injuries, name(s) of those injured (both employees(s) and others) • Nature and severity of the injuries (minor, severe, life threatening) • Company vehicle or equipment involved • Photographs of scene, vehicles, people and documentation | • Name of individual making the claim • Nature of claim • Reasonable estimate of claim value | • Make and model of equipment and equipment identification number • Severity of damage |
| **Utility Damage** | **Property Damage** | **Theft** | **Vandalism** |
| Type and owner of utility • Nature of damage | • Name of individual(s) involved • Nature and severity of the incident • Reasonable estimate of the damages | • Items stolen and estimated value of the stolen items | • Items vandalized and estimated value of the vandalized items |

# Incident Report Form

BjERK BUILDERS, Inc.

*Please complete this form and return to main office within 24 hours of the incident.*

## EMPLOYEE INFORMATION

*EMPLOYEE COMPLETES THIS SECTION*

Job location: _____ Employee ID: _____

Employee name (print): _____ Gender: ☐ Male ☐ Female

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Work Phone: _____

Department: _____ Title Code/Job Title: _____

Work Hours: _____ Hours Worked Per Week: _____

Employment Type: ☐ Full-Time ☐ Part-Time ☐ Career ☐ Limited Appointment ☐ Volunteer

## INCIDENT INFORMATION

Date of Incident: _____ Time of Incident: _____ : _____ ☐ AM ☐ PM

Location of Incident: _____

Incident Address: _____ City: _____ State: _____ Zip: _____

Precautions taken:

Describe how the incident occurred.

Was incident reported? ☐ Yes ☐ No If "Yes", to whom? _____ Date Reported: _____

Was there a witness? ☐ Yes ☐ No ☐ Unknown

Witness #1 (Full Name): _____ Phone: _____

Witness #2 (Full Name): _____ Phone: _____

Witness Statement:

Employee signature: _____ Date: _____

*Any person who knowingly presents a false or fraudulent claim for payment of a loss is subject to criminal and civil penalties.*

## SUPERVISOR SECTION

Supervisor Name: _____ Work Phone: _____ Work Email: _____

Employee name: _____ Police report: _____

Was prior approval of work given? ☐ Yes ☐ No

Was employee escorted? ☐ Yes ☐ No ☐ Unknown If “Yes”, Name of Escort: _____

Was there equipment involved? ☐ Yes ☐ No If “Yes”, what was the equipment? _____

What action will be taken to prevent recurrence? _____

Comments: _____

Type of work being performed:

| |
|---|
| |

Additional Comments:

| |
|---|
| |

Name: _____ Title: _____

Signature: _____ Date: _____

# New Hire Safety Orientation Training

BjERK BUILDERS, Inc.

Name: _____ Position/Job title: _____ Date: _____

Supervisor name: _____ Phone: _____

New Hire previous safety training and certifications:

## JOBSITE INFORMATION

Name of competent person: _____ Jobsite phone: _____

***Correct or report all safety concerns.***

☐ **LOCATION OF FACILITIES**
Parking
Break Area
Rest Rooms/Wash Stations

☐ **TIME AND LOCATION OF SAFETY MEETINGS**

_____

☐ **ASSIGNED SAFETY PARTNER**

_____

☐ **INDIVIDUAL COMMITMENT**

☐ **PRE-PLANNING**

☐ **PERSONAL PROTECTIVE EQUIPMENT (PPE)**
Hard Hat
Safety Vest/Safety Shirt
As Needed:
Gloves, Hearing Protection, Face Shields and Respiratory Protection

☐ **FALL PROTECTION**
Required Equipment
Full Body Harness
Double Locking, Shock Absorbing Lanyard
Ladders/Scaffolds
Personnel Lifts
CAZ'S
Safety Monitor

☐ **HAZARDOUS COMMUNICATION**
Location of chemical list and SDSs
Questions or concerns, contact your supervisor
Fire Procedures
Spill Procedures

☐ **ITEMS REQUIRING FURTHER TRAINING**
Excavation and Trenching, Confined Space Entry, Forklift, Fall Protection, Hazardous Materials, Lock-out/Tag-out, Traffic Control, Hot Work, Aerial Lift

☐ **ELECTRICAL**
Ground Fault Circuit Interrupter (GFC I) Required

☐ **CONFINED SPACE PROCEDURE**
Do not enter any confined spaces without contacting your Supervisor

☐ **LIFTING**
Proper Lifting Technique
Ask for assistance if item is too heavy or bulky to lift

☐ **HOUSEKEEPING**
Clean up as you work throughout the day

☐ **EMERGENCY RESPONSE PLAN**
First-Aid/Bloodborne Pathogen Kit
Report all incidents–no matter how minor
Small Injuries
Near Misses
Equipment and Property Damage
Major Injuries

☐ **SAFETY DISCIPLINE PROCEDURE**
Verbal Warning
Written Reprimand
Suspension
Dismissal/Termination of Employment
Severity of Penalty Dependent Upon Severity of Safety Violation

☐ **EQUAL EMPLOYMENT OPPORTUNITY EMPLOYER**
Dispute Resolution Procedures

☐ **SUBSTANCE TESTING POLICY**
Post Incident, Random and Reasonable Suspicion

*I acknowledge that I have received the initial company safety orientation. I understand that it is my obligation to be an active participant in safety performance and that working safely will be my number one priority. I have been oriented with the company's rules, regulations and safe work practices as set forth. I will always seek assistance from the competent person if I need help, feel I am not qualified, or have not been properly trained before starting any task.*

Employee Signature: _____

# Powered Industrial Truck Daily Checklist

**(FORKLIFT CHECKLIST DIARY)**

Equipment # _____

For week of _____ — _____ , 2024

**Okay** *Bien* = ✓ **Not Applicable** *No Applicable* = **N/A** **Not Okay** *No Bien* = **X**

| **Engine** *Motor* | MON. | TUES. | WED. | THUR. | FRI. | SAT. | SUN. |
|---|---|---|---|---|---|---|---|
| **Crankcase oil** *Aceite del cárter de cigüeñal* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Belts** *Cinturones* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Wires** *Alambres* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Brake Fluid** *Flúido del freno* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Hydraulic Fluid** *Flúidohidráulico* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Hydraulic Lines** *Cuerdas hidráulicas* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Fuel Line** *Cuerda del combustible* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Fuel Tank** *Tanque del combustible* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **LPG tank straps** *LPG correas del tanque* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Body** *Cuerpo* | **MON.** | **TUES.** | **WED.** | **THUR.** | **FRI.** | **SAT.** | **SUN.** |
| **Overhead Cage** *Sobre la cabeza Jaula* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Tires, Wheels, Rims** *Neumáticos, Ruedas, Margenes* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Forks** *Tenedores* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Mast Chains** *Cadenas del mástil* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Fire Extinguisher** *Apagaincendios* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Operating Instructions** *Operar Instrucciones* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Lifting Capacity** *Alzar Capacidad* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Operational** *Operacional* | **MON.** | **TUES.** | **WED.** | **THUR.** | **FRI.** | **SAT.** | **SUN.** |
| **Seat** *Asiento* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Seat Belt** *Cinturón del asiento* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Adjusted Seat** *Ajuste Asiento* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Seat Safety Switch** *Interruptor de la Seguridad del asiento* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Parking Brake** *Freno del aparcamiento* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Service Brake** *Freno del servicio* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Steering** *Dirigir* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Horn** *Cuerno* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Gear Shift Lever** *Palanca del Cambio del vestido* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Transmission** *Transmisión* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Back-up Warning Device** *Apoye Aparato de la Advertencia* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Gauges, Temperature** *Medidas, Temperatura* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Gauges, Hour** *Medidas, Hora* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Gauges, Speed** *Medidas, Rapidez* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Gauges, Battery** *Medidas, Batería* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Lights, Head** *Luces, Cabeza* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Lights, Tail** *Luces, Cola* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Lights, Signal** *Luces, Signo* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Lights, Warning** *Luces, Advertencia* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Mast Lift Up/Down** *Alzamiento del mástil Arriba/Abajo* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Mast Tilt** *Inclinación del mástil* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Mast Side/Squeeze** *Apretón de la Orilla del mástil* | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Signature of Inspector for Each Day** *Firma de Inspector por Cada Día*

| | |
|---|---|
| **Monday** *Lunes* _____ | **Friday** *Viernes* _____ |
| **Tuesday** *Martes* _____ | **Saturday** *Sábado* _____ |
| **Wednesday** *Miércoles* _____ | **Sunday** *Domingo* _____ |
| **Thursday** *Jueves* _____ | |

***Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica***

| EQUIPMENT / TASK | ENGINEERING AND WORK PRACTICE CONTROL METHODS | REQUIRED RESPIRATORY PROTECTION AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) | |
|---|---|---|---|
| | | ≤ 4 HOURS / SHIFT | > 4 HOURS / SHIFT |
| (i) Stationary masonry saws | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | None | None |
| (ii) Handheld power saws (any blade diameter) | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br><br>• When used outdoors.<br><br>• When used indoors or in an enclosed area. | <br><br><br><br>None<br><br>APF 10 | <br><br><br><br>APF 10<br><br>APF 10 |
| (iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less) | For tasks performed outdoors only:<br><br>Use saw equipped with commercially available dust collection system.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br><br>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 |
| (iv) Walk-behind saws | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br><br>• When used outdoors.<br><br>• When used indoors or in an enclosed area. | <br><br><br><br>None<br><br>APF 10 | <br><br><br><br>None<br><br>APF 10 |
| (v) Drivable saws | For tasks performed outdoors only:<br><br>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | None | None |

| EQUIPMENT / TASK | ENGINEERING AND WORK PRACTICE CONTROL METHODS | REQUIRED RESPIRATORY PROTECTION AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) | |
|---|---|---|---|
| | | ≤ 4 HOURS / SHIFT | > 4 HOURS / SHIFT |
| (vi) Rig-mounted core saws or drills | Use tool equipped with integrated water delivery system that supplies water to cutting surface.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | None | None |
| (vii) Handheld and stand-mounted drills (including impact and rotary hammer drills) | Use drill equipped with commercially available shroud or cowling with dust collection system.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>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.<br>Use a HEPA-filtered vacuum when cleaning holes. | None | None |
| (viii) Dowel drilling rigs for concrete | For tasks performed outdoors only:<br>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.<br>Use a HEPA-filtered vacuum when cleaning holes. | APF 10 | APF 10 |
| (ix) Vehicle-mounted drilling rigs for rock and concrete | 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.<br>OR<br>Operate from within an enclosed cab and use water for dust suppression on drill bit. | None<br><br>None | None<br><br>None |
| (x) Jackhammers and handheld powered chipping tools | Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.<br>• When used outdoors.<br>• When used indoors or in an enclosed area.<br>OR<br>Use tool equipped with commercially available shroud and dust collection system.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>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.<br>• When used outdoors.<br>• When used indoors or in an enclosed area. | <br>None<br>APF 10<br><br><br><br><br>None<br>APF 10 | <br>APF 10<br>APF 10<br><br><br><br><br>APF 10<br>APF 10 |

| EQUIPMENT / TASK | ENGINEERING AND WORK PRACTICE CONTROL METHODS | REQUIRED RESPIRATORY PROTECTION AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) | |
|---|---|---|---|
| | | ≤ 4 HOURS / SHIFT | > 4 HOURS / SHIFT |
| (xi) Handheld grinders for mortar removal (i.e., tuckpointing) | Use grinder equipped with commercially available shroud and dust collection system.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>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. | APF 10 | APF 25 |
| (xii) Handheld grinders for uses other than mortar removal | For tasks performed outdoors only:<br>Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>OR<br>Use grinder equipped with commercially available shroud and dust collection system.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>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 |
| | • When used outdoors. | None | None |
| | • When used indoors or in an enclosed area. | None | APF 10 |

| EQUIPMENT / TASK | ENGINEERING AND WORK PRACTICE CONTROL METHODS | REQUIRED RESPIRATORY PROTECTION AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) | |
|---|---|---|---|
| | | ≤ 4 HOURS / SHIFT | > 4 HOURS / SHIFT |
| (xiii) Walk-behind milling machines and floor grinders | Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>OR | None | None |
| | Use machine equipped with dust collection system recommended by the manufacturer.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>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.<br>When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes. | None | None |
| (xiv) Small drivable milling machines (less than half-lane) | Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.<br>Operate and maintain machine to minimize dust emissions. | None | None |
| (xv) Large drivable milling machines (half-lane and larger) | For cuts of any depth on asphalt only:<br>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.<br>Operate and maintain machine to minimize dust emissions. | None | None |
| | For cuts of four inches in depth or less on any substrate:<br>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.<br>Operate and maintain machine to minimize dust emissions.<br>OR | None | None |
| | Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.<br>Operate and maintain machine to minimize dust emissions. | None | None |

| EQUIPMENT / TASK | ENGINEERING AND WORK PRACTICE CONTROL METHODS | REQUIRED RESPIRATORY PROTECTION AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) | |
|---|---|---|---|
| | | ≤ 4 HOURS / SHIFT | > 4 HOURS / SHIFT |
| (xvi) Crushing machines | 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).<br>Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions.<br>Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station. | None | None |
| (xvii) 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 | Operate equipment from within an enclosed cab.<br>When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions. | None<br>None | None<br>None |
| (xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: demolishing, abrading, or fracturing silica- containing materials | Apply water and/or dust suppressants as necessary to minimize dust emissions.<br>OR<br>When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab. | None<br><br>None | None<br><br>None |

# Safety Inspection Form

BjERK BUILDERS, Inc.

## INSPECTION INFORMATION

| *JOBSITE DESCRIPTION* | *JOBSITE ADDRESS* | *INSPECTION DATE* |
|---|---|---|
| | | |

| *COMPETENT PERSON* | *INSPECTION PERFORMED BY:* |
|---|---|
| | |

## INSPECTION POINTS

| A. | GENERAL SAFETY AND HEALTH PROVISIONS | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are access and egress points well defined and clear of recognizable hazards? | ☐ | ☐ | ☐ |
| 2. | Where the public comes in close proximity to construction work, are those areas appropriately protected? | ☐ | ☐ | ☐ |
| 3. | Is there a competent person on site for each trade when employees are engaged in work activities? | ☐ | ☐ | ☐ |
| 4. | Is debris being cleared during the course of construction? | ☐ | ☐ | ☐ |
| 5. | Is there drinking water, cups, and trash receptacle available? *(one quart per hour per employee)* | ☐ | ☐ | ☐ |
| 6. | Are there suitable hand washing facilities available? | ☐ | ☐ | ☐ |
| | *If not, is there hand sanitizer?* | ☐ | ☐ | ☐ |
| 7. | Are there toilet facilities available for employees? | ☐ | ☐ | ☐ |
| 8. | If working at night, are there appropriate work lights for all working areas? | ☐ | ☐ | ☐ |
| 9. | Are there suitable trash receptacles for construction activities? | ☐ | ☐ | ☐ |
| 10. | If there is a first aid kit on site, is it inspected and maintained in accordance with ANSI Z308.1-2021? | ☐ | ☐ | ☐ |
| 11. | Is there a blood-borne pathogen kit on location? | ☐ | ☐ | ☐ |

| B. | EMPLOYEE RIGHT-TO-UNDERSTAND / HAZARDOUS COMMUNICATIONS | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Have employees been made aware of all hazardous materials on site? | ☐ | ☐ | ☐ |
| 2. | Is there a current Chem-List and access to information available to all employees? | ☐ | ☐ | ☐ |

| C. | PERSONAL PROTECTIVE EQUIPMENT | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are all employees wearing required PPE for the work environment? *(hardhats, safety glasses, vests)* | ☐ | ☐ | ☐ |
| 2. | Are employees wearing appropriate clothing and shoes for the work environment? *ANSI/ISEA Z87.1-2015* | ☐ | ☐ | ☐ |
| 3. | Are safety vests or other appropriate high reflective clothing worn while working along roadways or at night? | ☐ | ☐ | ☐ |

| C. | PERSONAL PROTECTIVE EQUIPMENT | YES | NO | N/A |
|---|---|---|---|---|
| 4. | Is hearing protection being utilized where appropriate? (*Normal conversation rule.)* | ☐ | ☐ | ☐ |
| 5. | Are respirators used when required? | ☐ | ☐ | ☐ |
| 6. | Have employees been medically cleared to wear the respirator? | ☐ | ☐ | ☐ |
| 7. | Are exposures to Silica being controlled appropriately? | ☐ | ☐ | ☐ |

| D. | HOUSEKEEPING / MATERIAL HANDLING, STORAGE, USE AND DISPOSAL | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Is material stored correctly and in designated areas on the jobsite? | ☐ | ☐ | ☐ |
| 2. | Do powered industrial truck operators have a valid operator's license for the equipment they are operating, issued by the company they work for? | ☐ | ☐ | ☐ |
| 3. | Are forklifts inspected daily before use and is that inspection ready for review? | ☐ | ☐ | ☐ |
| 4. | Is stored material compatible and stored away from sources of ignition? | ☐ | ☐ | ☐ |

| E. | FIRE PROTECTION / PREVENTION | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are fire extinguishers available for immediate use? | ☐ | ☐ | ☐ |
| 2. | Is there one fire extinguisher rated at least 2A for each 100 feet of travel, for every 3000 square of floor space, at least one per floor and at every stairwell? | ☐ | ☐ | ☐ |
| 3. | Are fire extinguishers periodically inspected and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A-2022? | ☐ | ☐ | ☐ |
| 4. | Is there a fire extinguisher rated no less than 10B within 50 feet where there is more than 5 gallons or 5 lbs. of flammable liquids or gas? | ☐ | ☐ | ☐ |
| 5. | Are only approved metal self-closing containers with a spark screen and pressure release used for the storage of gasoline on a jobsite? (*Must be 5 gallons or less.)* | ☐ | ☐ | ☐ |
| 6. | Is smoking only allowed in approved areas? | ☐ | ☐ | ☐ |
| 7. | Are exits maintained on all floors for safe egress from the work-site in case of a fire? | ☐ | ☐ | ☐ |

| F. | ELECTRICAL / HAND AND POWER TOOLS | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are extension cords of a hard use type number 12 or better?<br><br>*NOTE: The National Electrical Code, ANSI/NFPA 70, in Article 400, Table 400-4, lists various types of flexible cords, some of which are noted as being designed for hard or extra-hard usage. Examples of these types of flexible cords include hard service cord (types S, ST, SO, STO) and junior hard service cord (types SJ, SJO, SJT, SJTO).* | ☐ | ☐ | ☐ |
| 2. | Are temporary circuits protected by GFCI? | ☐ | ☐ | ☐ |
| 3. | Is electrical equipment and tools marked to include manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product may be identified. | ☐ | ☐ | ☐ |
| 4. | Do markings include voltage, current, wattage, or other ratings as necessary?<br>*The marking shall be of sufficient durability to withstand the environment involved.* | ☐ | ☐ | ☐ |

| F. | ELECTRICAL / HAND AND POWER TOOLS | YES | NO | N/A |
|---|---|---|---|---|
| 5. | Are cords protected from damage like pinch points, doorways, metal studs, and roadways? | ☐ | ☐ | ☐ |
| 6. | Is the strain relief or insulation damaged? | ☐ | ☐ | ☐ |
| 7. | Are all circuits de-energized prior to employees completing work? | ☐ | ☐ | ☐ |
| 8. | Are employees working on live circuits? | ☐ | ☐ | ☐ |
| | *If so, is there a NFPA 70E Hot Work Permit completed and available for review?* | ☐ | ☐ | ☐ |

| G. | LADDERS AND STAIRWAYS / SCAFFOLDING | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are ladders used for the purpose they were designed? | ☐ | ☐ | ☐ |
| 2. | Are spreader locks used with all step ladders? | ☐ | ☐ | ☐ |
| 3. | Are all safety labels and warnings legible? | ☐ | ☐ | ☐ |
| 4. | Are ladders in serviceable condition? | ☐ | ☐ | ☐ |
| 5. | Are ladders used for access and egress secured to prevent displacement? | ☐ | ☐ | ☐ |
| 6. | Is a ladder available where ever there is a break in elevation of 19 inches or more? | ☐ | ☐ | ☐ |
| 7. | Are pans on stairways filled with concrete or other material prior to use? | ☐ | ☐ | ☐ |
| 8. | Do stairways having more than four risers or rising more than 30 inches have at least one handrail? | ☐ | ☐ | ☐ |
| 9. | Are ladders being loaded beyond their designed capacity? | ☐ | ☐ | ☐ |
| 10. | Are employees who use ladders maintaining at least three points of contact when ascending or descending? | ☐ | ☐ | ☐ |

| H. | TRENCHING, EXCAVATIONS AND SHORING | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Before excavating, has Arizona 811 (Blue Stake) identified underground utilities, is a report no more than 15 days old available for review? | ☐ | ☐ | ☐ |
| 2. | Has the competent person inspected the excavation, air quality and shoring system before work begins? | ☐ | ☐ | ☐ |
| 3. | Are appropriate shield and/or protection systems installed for employee protection after five feet or when conditions dictate? | ☐ | ☐ | ☐ |
| 4. | Is tabulated data available on site for all shoring systems in use? | ☐ | ☐ | ☐ |
| 5. | Are spoil piles a minimum of two feet away from excavation? | ☐ | ☐ | ☐ |
| 6. | Are there ladders or other acceptable access and egress point every 25 feet for employees working in an excavation deeper than 4 feet? | ☐ | ☐ | ☐ |
| 7. | Are there any engulfment hazards and has the competent person completed the appropriate confined space permit? | ☐ | ☐ | ☐ |
| 8. | If the excavation is deeper than 20 feet, has a qualified engineer designed the shoring system? | ☐ | ☐ | ☐ |

| H. | TRENCHING, EXCAVATIONS AND SHORING | YES | NO | N/A |
|---|---|---|---|---|
| 9. | Are exposed utilities supported in open excavations? | ☐ | ☐ | ☐ |
| 10. | Are buildings, sidewalks, roadways or other adjacent facilities supported or braced to prevent failure? | ☐ | ☐ | ☐ |

| I. | HEAVY EQUIPMENT AND CRANES | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are all crane operators “Certified” for cranes with a lift capacity of 2,001 lbs. or more?<br><br>*(acceptable certification is one issued by an accredited crane operator certification and testing agency, an employer run audited crane operator program, a U.S. Military members still working for a branch of the military (civilian contractors to the military do not count), or a government entity.* | ☐ | ☐ | ☐ |
| 2. | Was the area where the crane was set up selected by a controlling contractor or property owner/manager with swing radius of superstructure protected by barrier? | ☐ | ☐ | ☐ |
| 3. | If the crane is erected in close proximity to an active runway, was the FAA notified and is the permit on site? | ☐ | ☐ | ☐ |
| 4. | Is the crane positioned closer than 20 feet to any power line? | ☐ | ☐ | ☐ |
| 5. | Has the crane been inspected by a qualified person prior to beginning work? | ☐ | ☐ | ☐ |
| 6. | Are taglines used to position loads? | ☐ | ☐ | ☐ |
| 7. | Is all rigging inspected and in serviceable condition? | ☐ | ☐ | ☐ |
| 8. | Is all rigging within the loads limits of any expected lift operation? | ☐ | ☐ | ☐ |
| 9. | Have all rigger and signalers been trained? | ☐ | ☐ | ☐ |

| J. | CONCRETE AND CONCRETE FORMS | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are all employees engaged in concrete work using appropriate PPE? | ☐ | ☐ | ☐ |
| 2. | Are respirators used when grinding cutting or drilling masonry where silica may be present? | ☐ | ☐ | ☐ |
| 3. | Are there appropriate washing stations available for all employees to wash their hands? | ☐ | ☐ | ☐ |
| 4. | Is there an emergency eye wash station available for all employees working with concrete? | ☐ | ☐ | ☐ |
| 5. | Are all form pins straight and the striking surface in serviceable condition, mushroom heads? | ☐ | ☐ | ☐ |
| 6. | Are rebar caps installed where impalement hazards exist? | ☐ | ☐ | ☐ |
| 7. | Are mixers appropriately guarded? | ☐ | ☐ | ☐ |
| 8. | Are metal finishing tools being used near power lines? | ☐ | ☐ | ☐ |
| 9. | Are employees provided with rubber boots and gloves? | ☐ | ☐ | ☐ |
| 10. | Are concrete trucks working in close proximity to open trenches? | ☐ | ☐ | ☐ |

| K. | FALL PROTECTION | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Has the competent person inspected all fall protection systems and anchor points prior to engaging employees in work activities? | ☐ | ☐ | ☐ |
| 2. | Are all employees working at or above six feet from a lower surface protected from fall hazards by use of PFPS, guardrails, or safety nets? | ☐ | ☐ | ☐ |
| 3. | Is there a site-specific fall protection plan that includes rescue available on site for review? | ☐ | ☐ | ☐ |
| 4. | Are top rails installed at 42 plus or minus 3 inches and will they hold 200 lbs. of force down and out? | ☐ | ☐ | ☐ |
| 5. | Are mid rails installed at half way between the top rail and the working surface or at least 21 inches and capable of supporting 150 lbs. of force down and out? | ☐ | ☐ | ☐ |
| 6. | Are retractable lines capable of restricting fall distances to 2’ with a minimum tensile load of 3,000 lbs.? | ☐ | ☐ | ☐ |
| 7. | Are retractable lines that do not restrict fall distances to 2’ have a tensile load strength of 5,000 lbs.? | ☐ | ☐ | ☐ |
| 8. | Are positioning devices rigged to prevent falls to 2’ and are they anchored to support a minimum of 3,000 lbs. or twice the anticipated load? | ☐ | ☐ | ☐ |
| 9. | Are warning lines installed no less than 6’ from the edge of roof, working surface, or recognized fall hazard? | ☐ | ☐ | ☐ |
| 10. | Does the warning line have a minimum tensile strength of 500 lbs.? | ☐ | ☐ | ☐ |
| 11. | Is the warning line installed so that the maximum height is 39” and the lowest height, including slag, is 34 inches? | ☐ | ☐ | ☐ |
| 12. | Is the warning line flagged every 6’ with high visibility material? | ☐ | ☐ | ☐ |
| 13. | Are the warning line stanchions able to resist a 16 lb. tipping force? | ☐ | ☐ | ☐ |
| 14. | If a safety monitor is used, is the competent person the safety monitor? | ☐ | ☐ | ☐ |
| 15. | Can he communicate with all employees engaged in work activities with no barriers? | ☐ | ☐ | ☐ |
| 16. | Are all employees working in plain sight of the safety monitor on the same working surface? | ☐ | ☐ | ☐ |
| 17. | Is the safety monitor system being used on a low slope surface, 4:12 or less? | ☐ | ☐ | ☐ |
| 18. | Are all holes on the walking working surface, greater than 2”, covered with a material capable of supporting at least twice potential loads? | ☐ | ☐ | ☐ |
| 19. | Are all covers clearly marked “HOLE” or “COVER”? | ☐ | ☐ | ☐ |

| L. | TRAFFIC CONTROL | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Was a written traffic control plan submitted and approved before work begins? | ☐ | ☐ | ☐ |
| 2. | Are employees protected from traffic by barricades, signs, and other means of high visibility systems? | ☐ | ☐ | ☐ |
| 3. | Are lane closures and control systems being maintained at all times during construction? | ☐ | ☐ | ☐ |
| 4. | Are all personnel working within the traffic control plan wearing correct level of reflective clothing for the posted speed limits? | | | |

| M. | WELDING AND CUTTING | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are valve protection caps installed on all gas cylinders in storage? | ☐ | ☐ | ☐ |
| 2. | Are stored cylinders protected from tipping be chain or other suitable devise? | ☐ | ☐ | ☐ |
| 3. | Are gauges and valves in serviceable condition? | ☐ | ☐ | ☐ |
| 4. | Are fuel and gas hoses easily distinguishable by color or other characteristics? | ☐ | ☐ | ☐ |
| 5. | If hoses are run together in parallel sections, is there more than 4” out of every 12” covered in tape? | ☐ | ☐ | ☐ |
| 6. | Are torches being ignited by friction strikers? | ☐ | ☐ | ☐ |
| 7. | Are different gasses in storage separated by 20’ or a five foot fire wall with a one-hour minimum rating? | ☐ | ☐ | ☐ |
| 8. | Are arc welding cables completely insulated and a flexible type? | ☐ | ☐ | ☐ |
| 9. | Arc cables cannot be repaired within 10’ feet of either end. | ☐ | ☐ | ☐ |
| 10. | Are repaired or spliced cables connected as to retain the same characteristics designed by the manufacturer? | ☐ | ☐ | ☐ |

| N. | STEEL ERECTION | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Are all employees engaged in steel erection activities on a walking working surface protected from falls above 15’? | ☐ | ☐ | ☐ |
| 2. | Is there an established controlled decking zone between 15’ and 30’ above a lower level? | ☐ | ☐ | ☐ |
| 3. | Are all employees protected from falls above 2 stories or 30’? | ☐ | ☐ | ☐ |
| 4. | Are the boundaries for the controlled decking zone greater than 90’ wide and 90’ deep? | ☐ | ☐ | ☐ |

| O. | DUST CONTROL | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Is there evidence of track-out from the jobsite? | ☐ | ☐ | ☐ |
| 2. | Is there an area for tire cleaning established and maintained? | ☐ | ☐ | ☐ |
| 3. | Is the gravel pad at the entrance to the jobsite at least 3” deep, 30’ wide and 50’ in length? | ☐ | ☐ | ☐ |
| 4. | Is dust from the worksite being controlled effectively? | ☐ | ☐ | ☐ |

| P. | EMERGENCY ACTION PLAN (EAP) | YES | NO | N/A |
|---|---|---|---|---|
| 1. | Have employers provided their employees the physical address of the worksite? | ☐ | ☐ | ☐ |
| 2. | Has an evacuation alarm and gathering place been established for the worksite? | ☐ | ☐ | ☐ |
| 3. | Are competent persons for each trade aware of the closest medical treatment facility? | ☐ | ☐ | ☐ |
| 4. | Does each competent person know how to report an unsafe condition? | ☐ | ☐ | ☐ |

## ACTIONABLE ITEMS

| ITEM 1 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

| ITEM 2 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

| ITEM 3 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

| ITEM 4 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

## ACTIONABLE ITEMS (CONTINUED)

| ITEM 5 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

| ITEM 6 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

| ITEM 7 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

| ITEM 8 | | | |
|---|---|---|---|
| *COMPANY* | *RESPONSIBLE PARTY* | *PHONE NUMBER* | *ABATEMENT DATE* |
| | | | |
| *NOTED DEFICIENCY* | | | |
| | | | |
| *CORRECTIVE ACTION* | | | |
| | | | |

# Scaffold Daily Inspection

BjERK BUILDERS, Inc.

| | YES | NO |
|---|---|---|
| 1. Has authority to erect a scaffold been approved? | ☐ | ☐ |
| 2. Are scaffolds and scaffold components inspected before each work shift by a competent person? | ☐ | ☐ |
| 3. Have employees who erect, disassemble, move, operate, repair, maintain, or inspect the scaffold received training by a competent person to recognize hazards associated with scaffold systems? | ☐ | ☐ |
| 4. Have employees who utilize scaffolds been trained by a qualified person regarding safe work practices associated with scaffold systems? | ☐ | ☐ |
| 5. Has each employer who utilizes scaffold systems signed a scaffold use agreement? | ☐ | ☐ |
| 6. Are only serviceable components used to erect scaffold systems? | ☐ | ☐ |
| 7. Are scaffold system components compatible and not of dissimilar metals? | ☐ | ☐ |
| 8. Are base plates, adjustable leveling jacks, uplift pins, and mudsills (where applicable) utilized in accordance with the manufacturer's use instructions and OSHA guidance? | ☐ | ☐ |
| 9. Is the scaffold assembly plumb, square, and level? | ☐ | ☐ |
| 10. Are 4:1 (height to width) scaffold assemblies secured in accordance with OSHA guidance? | ☐ | ☐ |
| 11. Is the maximum load capacity of the scaffold assembly established by a competent person and communicated to all authorized users? | ☐ | ☐ |
| 12. Is the intended load on the scaffold assembly (including point loading) within the maximum load capacity of the scaffold assembly? | ☐ | ☐ |
| 13. Are all working platforms fully planked? | ☐ | ☐ |
| 14. Do planks 10 feet or less in length extend at least 6 inches and no more than 12 inches over supports? | ☐ | ☐ |
| 15. Are all transitions, corners, and changes of elevation properly assembled and protected? | ☐ | ☐ |
| 16. Are plank cleats used in accordance with OSHA's guidance to prevent movement? | ☐ | ☐ |
| 17. Are plank boards of the required wood species, shape, and size and marked/identified as scaffold planks? | ☐ | ☐ |
| 18. Are the planks in good condition and free of visible defects? | ☐ | ☐ |
| 19. If planks are deflecting more than 1/60th of the span when loaded, are they removed from service? | ☐ | ☐ |
| 20. Does the scaffold assembly have required guardrails and toeboards? | ☐ | ☐ |
| 21. Is there safe access to all scaffold assembly platforms? | ☐ | ☐ |
| 22. Is the scaffold assembly free from drapes, covers, and similar items that would increase wind forces on the assembly? | ☐ | ☐ |
| 23. Is vehicular traffic restricted from the vicinity of the scaffold? | ☐ | ☐ |
| 24. Are employees restricted from working or walking under the scaffold assembly accept in designated areas? | ☐ | ☐ |
| 25. Has all work from the scaffold been completed? | ☐ | ☐ |
| 26. Has authority to dismantle the scaffold been approved? | ☐ | ☐ |

NAME _____ SIGNATURE _____ DATE OF INSPECTION _____

# Scaffold Use Agreement

BjERK BUILDERS, Inc.

This agreement is made and entered into this _____ day of _____, by and between Bjerk Builders, hereinafter referred to as "the Company", and _____, hereinafter referred to as "the Licensee", whereby the Company will make available certain scaffolding, erected at the following project (name and address) _____, for use by the Licensee in order to perform its work at the same construction site. In consideration of the mutual covenants and agreements contained herein, the parties hereto agree on the following:

1. **Use of scaffolding.** The Licensee may use the above-described scaffolding for the following purposes: access and egress of the worksite to include use of construction elevator. Removal of abated material to external trash receptacles east of court building.

2. **Acknowledgment of scaffolding condition.** The Licensee hereby acknowledges that a competent person of the Licensee's company has inspected said scaffolding and that it is in a safe and satisfactory condition for use by the Licensee's employees. The Licensee hereby acknowledges that all employees who will use the scaffold have been trained in the safe use of scaffold and the recognition of potential hazards related to scaffold use.

3. **Inspection and repair.** Prior to each use of the scaffolding, the Licensee's designated competent person shall examine/inspect the scaffolding and takes all such action and makes minor modifications and repairs as shall be reasonably necessary in order to assure the scaffolding is in a usable and safe condition. This inspection is to be done daily utilizing the attached inspection form, a copy of which is to be provided to the Company after each inspection. "Usable and safe condition" shall include the Licensee assuring itself that the scaffolding is in compliance with all applicable laws and regulations including but not limited to, Subpart L of the OSHA standard for construction (29 CFR 1926). If the scaffolding is determined to be unsafe or not usable, the Licensee and its employees shall refrain from using it until all such defects and deficiencies have been corrected. The user hereby waives any claims against the Company with respect to the condition of the scaffolding for any time the Licensee or its employees are using the scaffolding. The Licensee is accepting the scaffolding "as is" and "where is". Notwithstanding the foregoing, the Licensee shall not make any permanent or material modifications to the structural components of the scaffolding without the express written approval of the Company.

4. **Indemnification.** The Licensee hereby agrees to indemnify and hold harmless the Company from any and all claims of any nature made by third parties, including the Licensee's employees, arising out of the use of the scaffolding during those periods when the Licensee has the right to use said scaffolding. *PRIOR TO THE LICENSEE OR ITS EMPLOYEES ACTUALLY USING THE SCAFFOLDING, THE LICENSEE SHALL FURNISH TO THE COMPANY A CERTIFICATE OF INSURANCE ISSUED BY AN INSURANCE COMPANY AS FOLLOWS:* The insurance policy shall have a minimum coverage of $1,000,000 (for each occurrence); the insurance policy shall be with a company or companies acceptable to the Company; the policy shall name the Company as an additional insured; and shall constitute the primary liability coverage in the event of a claim by the Licensee or its employees. In addition the Licensee shall pay any sums expended by the Company, its agents or attorneys to investigate prosecute or defend any such claims, any judgment rendered against the Company and any sums paid in settlement of such claims.

5. **Use of scaffolding by others.** The Licensee shall not allow any person/s other than its own employees to use the scaffolding without direct authorization from the Company. If the Licensee or its employees become aware of persons trespassing upon the scaffold, the Licensee shall immediately notify the Company of the trespassing identifying the parties involved if possible.

6. **Governing Law.** This contract shall be interpreted in accordance with state laws.

IN WITNESS WHEREOF, we hereunto set our hands this _____ day of _____.

| **Bjerk Builders** | **Licensee** |
|---|---|
| By: _____ | By: _____ |
| Position: _____ | Position: _____ |

# Task and Safety Planning Worksheet

BjERK BUILDERS, Inc.

Job Title: _____ Job Location: _____

Department/Group: _____ Job Code/Req#: _____

Foreman: _____ Contact Number: _____

HR Contact: _____ Date Posted: _____

Employee(s): _____ Posting Expires: _____

External posting URL: _____

Internal posting URL: _____

Reviewed by: _____ Date: _____

Approved by: _____ Date: _____

Last updated by: _____ Date/Time: _____

Scope of work:

| |
|---|
| |

Specific location of task being performed:

| |
|---|
| |

| PROCESSES/CONDITIONS | YES | NO |
|---|---|---|
| Have you walked the work area specified? | ☐ | ☐ |
| Are there any barricading issues including above or below? | ☐ | ☐ |
| Are you working around live systems or equipment (e.g., hazardous energy)? | ☐ | ☐ |
| Have you identified all emergency equipment, including fire extinguishers, eye wash stations, or showers? | ☐ | ☐ |
| Are you familiar with the evacuation routes and plans? | ☐ | ☐ |
| Have you contacted the appropriate personnel? | ☐ | ☐ |
| Has the work plan been coordinated with the other trades in the area? | ☐ | ☐ |
| Is the work area congested with other trades? | ☐ | ☐ |
| Are enough personnel assigned to this task to complete it safely? | ☐ | ☐ |
| Does this task require special permits or training? | ☐ | ☐ |
| Have all tools/equipment been inspected prior to use? | ☐ | ☐ |
| Does the task require discharging of gas or fluids? *If "yes," then a discharging permit is required.* | ☐ | ☐ |
| Do you need to review the SDS to proceed? | ☐ | ☐ |
| Are there adequate materials/tools for this task? | ☐ | ☐ |
| Is live system mitigation needed (e.g. LOTO)? ***(If "yes", see your safety person before you start.)*** | ☐ | ☐ |
| Have employees been trained in proper PPE usage? | ☐ | ☐ |

| CHECKLIST ITEMS | | | |
|---|---|---|---|
| ☐ SIPP | ☐ Open flame | ☐ Full-body PPE | ☐ Hand or arm protection |
| ☐ Lock-out/tag-out | ☐ APCI permit | ☐ Interstitial/RMF checklist | ☐ Flush or discharge |
| ☐ Confined space | ☐ CUDL form | ☐ Barricades/signage | ☐ eFIT, IRN, fusion, E.R. |
| ☐ EEW permit | ☐ Respirator | ☐ Hearing protection | ☐ PPE training for employees |
| ☐ PVC gluing | ☐ Metatarsal guards | ☐ Eye or face protection | |
| ☐ Fall protection | ☐ All employees reviewed | ☐ LSS yellow card | |

| STEPS | HAZARDS | HAZARD ELIMINATION |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |
| 6. | | |
| 7. | | |

## SIGNATURES

***I have read and understand this pre-task planning worksheet.***

Foreman: _____ Safety rep: _____

Crew: _____ Crew: _____

Crew: _____ Crew: _____

Crew: _____ Crew: _____

Crew: _____ Crew: _____

Crew: _____ Crew: _____

Crew: _____ Crew: _____

Crew: _____ Crew: _____

# Trenching and Excavation by the Numbers

| | |
|---|---|
| 2 | Minimum distance in feet the spoil pile must be set back<br>Maximum distance in feet the top hydraulic vertical shore cylinder can be below grade<br>Maximum distance in feet allowed to excavate below support system |
| 3 | Minimum distance in feet a ladder must be above the trench box or grade<br>Minimum points of contact on ladder when climbing up or down |
| 4 | Maximum height in feet of bench allowed in cohesive B soil or better<br>Maximum vertical distance in feet between hydraulic vertical shore cylinders<br>Number of feet at which a ladder becomes mandatory<br>Number in feet where atmosphere must be tested if hazardous atmosphere exists or could exist |
| 5 | Number of feet at which a protective system becomes mandatory |
| 6 | Number of feet in height when fall protection is required |
| 7 | Number of components for a visual test for soil classification |
| 8 | Number of feet the first bench is set back when doing multiple benches in B soil using 4' bench steps |
| 10 | Minimum vertical distance in feet required from 50,000 voltage power lines |
| 12 | Number of general requirements |
| 18 | Minimum required distance in inches from grade to top of trench box when sloping a portion of the depth |
| 19.5 | Level at which oxygen concentration percentage equal to and below is classifed as oxygen deficient atmosphere |
| 20 | Maximum required distance in inches from grade to top of trench box when sloping a portion of the depth |
| 23.5 | Level at which oxygen concentration percentage equal to and above is classified as oxygen enriched atmosphere (explosive) |
| 25 | Maximum distance in feet a worker may travel to reach a means of egress |
| 30 | Maximum distance in inches allowable to step across trench before crossing bridge is mandatory |

# Utility Damage Acknowledgment Form

The following information is documentation of a utility hit and/or damage to an existing utility that was not properly located and marked and/or said damage was of no fault of the Company. This letter also will serve as the documentation for lost/standby time involved and pertaining to the Company.

Location of utility damage: _____

Time of utility damage: _____

Total lost/standby time: _____

Repairman on site: _____

Locate company: _____

Reason for utility damage:

| | | |
|---|---|---|
| UTILITY REPRESENTATIVE NAME | SIGNATURE | DATE |
| BJERK COMPETENT PERSON | SIGNATURE | DATE |

# Voluntary Respirator Use Form

BjERK BUILDERS, Inc.

### *APPENDIX D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard.*

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, of if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following:

1. Read and follow the manufacturer's instructions provided with the respirator. These instructionsinclude information on how to properly use, maintain, and care for the respirator, along withwarnings on the capabilities and limitations of the respirator.

2. To choose respirators that have been certified by NIOSH for protection against the contaminantof concern.

3. To keep track of your respirator so that you do not use someone else's respirator by mistake; and

4. Not to wear your respirator in areas with contaminants that the respirator is not designed toprotect against. For example, remember that a particulate respirator does not protect you againstgases, vapors and the non-particulate components of fumes, mists, fogs, smoke and sprays.

| | | |
|---|---|---|
| EMPLOYEE NAME | SIGNATURE | DATE |
| SAFETY COMPLIANCE SPECIALIST | SIGNATURE | DATE |
| PROGRAM ADMINISTRATOR | SIGNATURE | DATE |

# Work Zone Hand Signals

BjERK BUILDERS, Inc.

## PREFERRED METHOD

### *Stop/Slow Paddle*

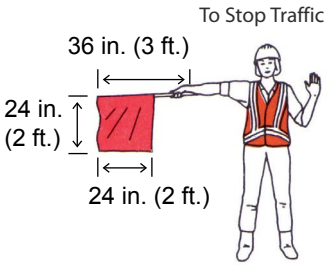






## EMERGENCY SITUATIONS ONLY

### *Red Flag*






# Work Zone Procedures for Hand Signal Devices

The following method of signaling with paddles shall be used:

- To stop road users, the flagger shall face road users and aim the STOP paddle face toward road users in a stationary position with the arm extended horizontally away from the body. The free arm shall be held with the palm of the hand above should level toward approaching traffic.
- To direct stopped road users to proceed, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body. The flagger shall motion with the free hand for road users to proceed.
- To alert or slow traffic, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body.
- To further alert or slow traffic, the flagger holding the SLOW paddle face toward road users may motion up and down with the free hand, palm down.

The following methods of signaling with a flag shall be used:

- To stop road users, the flagger shall face road users and extend the flag staff horizontally across the road users' lane in a stationary position so that the full area of the flag is visibly hanging below the staff. The free arm shall be held with the palm of the hand above the shoulder level toward approaching traffic.
- To direct stopped road users to proceed, the flagger shall stand parallel to the road user movement and with flag and arm lowered from the view of the road users, and shall motion with the free hand for road users to proceed. Flags shall not be used to signal road users to proceed.
- To alert or slow traffic, the flagger shall face road users and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down without raising the arm above a horizontal position. The flagger shall keep the free hand down.

| DISTANCE OF FLAGGER STATION IN ADVANCE OF THE WORK SPACE | | | |
|---|---|---|---|
| **SPEED (MPH)** | **DISTANCE (FT)** | **SPEED (MPH)** | **DISTANCE (FT)** |
| 20 | 35 | 45 | 220 |
| 25 | 55 | 50 | 280 |
| 30 | 85 | 55 | 335 |
| 35 | 120 | 60 | 415 |
| 40 | 170 | 65 | 485 |

# Chemical List

BjERK BUILDERS, Inc.

## ELECTRICAL

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 1. Light bulbs (Fluorescent, Incandescent, Halogen…) | Hydrogen | 10035-10-6 |
| | Methyl Bromide | 74-83-9 |
| | Methyl Iodide | 74-84-4 |
| | Tungsten | 74-40-33-7 |
| | Molybednum | 7439-98-7 |
| | Fused Silica | 6067-86-0 |
| | Quaitx | 14808-60-7 |
| | Argon | 007-440-371 |
| | Nitrogen | 007-727-379 |
| | Krypton | 7439-90-9 |
| | Xenon | 7440-63-3 |
| 2. PVC PRIMER | Tetrahydrofuran | 109-99-9 |
| | Methyl Ethyl Ketone | 78-93-3 |
| | Cyclohexanone | 108-94-1 |
| | Dymethyl Formamide | 68-12-2 |
| 3. PVC CEMENT | Polyvinil Chloride Resident | 9002-86-2 |
| | Tetrahydrofuran | 109-99-9 |
| | Methyl Ethyl Ketone | 78-93-3 |
| 4. PVC PIPE | Acetone | 67-64-1 |
| | Methyl Ethyl Ketone | 78-93-3 |
| | Tetrahydrofuran | 109-99-9 |
| | Cyclohexanone | 108-94-1 |
| 5. METAL ELECTRICAL TUBBING | Base Metal Iron | 7439-89-6 |
| | Aluminum | 7429-90-5 |
| | Carbon | 7440-44-0 |
| | Nickel | 7440-02-0 |
| | Tungsten | 7440-33-7 |
| | Vanadium | 7440-62-2 |
| | Zinc Coating | 1314-13-2 |
| | Lead | 7439-92-1 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 6. METAL TUBING FITTINGS | Hydrogen | |
| | Silicon | |
| | Rungsten | |
| | Nitrogen | |
| | Xenon | |
| | Krypton | |
| 7. Light bulbs (Fluorescent, Incandescent, Halogen…) | Hydrogen | 10035-10-6 |
| | Methyl Bromide | 74-83-9 |
| | Methyl Iodide | 74-84-4 |
| | Tungsten | 74-40-33-7 |
| | Molybednum | 7439-98-7 |
| | Fused Silica | 6067-86-0 |
| | Quaitx | 14808-60-7 |
| | Argon | 007-440-371 |
| | Nitrogen | 007-727-379 |
| | Krypton | 7439-90-9 |
| | Xenon | 7440-63-3 |
| 8. PVC PRIMER | Tetrahydrofuran | 109-99-9 |
| | Methyl Ethyl Ketone | 78-93-3 |
| | Cyclohexanone | 108-94-1 |
| | Dymethyl Formamide | 68-12-2 |
| 9. PVC CEMENT | Polyvinil Chloride Resident | 9002-86-2 |
| | Tetrahydrofuran | 109-99-9 |
| | Methyl Ethyl Ketone | 78-93-3 |
| 10. PVC PIPE | Acetone | 67-64-1 |
| | Methyl Ethyl Ketone | 78-93-3 |
| | Tetrahydrofuran | 109-99-9 |
| | Cyclohexanone | 108-94-1 |
| 11. METAL ELECTRICAL TUBBING | Base Metal Iron | 7439-89-6 |
| | Aluminum | 7429-90-5 |
| | Carbon | 7440-44-0 |
| | Nickel | 7440-02-0 |
| | Tungsten | 7440-33-7 |
| | Vanadium | 7440-62-2 |
| | Zinc Coating | 1314-13-2 |
| | Lead | 7439-92-1 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 12. METAL TUBING FITTINGS | Hydrogen | 10035-10-6 |
| | Silicon | 7440-21-3 |
| | Rungsten | 74-40-33-7 |
| | Nitrogen | 007-727-379 |
| | Xenon | 7440-63-3 |
| | Krypton | 7439-90-9 |
| | Fused Silica | 6067-86-0 |
| | Argon | 007-440-371 |
| 13. SPRAY PAINT | Denatured Alcohol | 64-17-5 |
| | Dimethyl Ether | 115-10-6 |
| | Triethylamine | 121-44-8 |
| 14. ELECTRICAL WIRE | Copper | 7440-50-8 |
| | Antimony Trioxide | 1309-64-4 |
| | Calcium Carbonate | 1317-65-3 |
| | Base Clay | |
| 15. ELECTRICAL METAL BOXES | Iron | 7439-89-6 |
| | Carbon | 7440-44-0 |
| | Nickel | 7440-02-0 |
| | Zinc Coating | 1314-13-2 |
| | Vanadium | 7440-62-2 |
| 16. LIGHT FIXTURES | Aluminum | 7429-90-5 |
| | Nickel | 7440-02-0 |
| | Zinc Coating | 1314-13-2 |
| | Copper | 7440-50-8 |
| | Iron | 7439-89-6 |
| 17. NOALOX ALUMINUM COMPOUND | Polybutene | 9003-29-6 |
| | Zinc Dust | 7440-66-6 |
| | Silicone Dioxide | 112945-52-5 |
| 18. ELECTRICAL TAPE ( Black, Red, Blue, White, Green | Poly Vinyl | 9002-86-2 |
| 19. Brown, Orange, Yellow, and Gray) | Polyester Adipate | Trade Secret |
| | Carbon Black | 1333-86-4 |
| | Arsenic | 7440-38-2 |
| 20. ELECTRICAL CABLE TIES | Adipic Acid | 32131-86-4 |
| | Carbon Black | 1333-86-4 |
| | Nylon 6 | 25038-54-4 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 21. ELECTICAL WIRENUTS (WIRE CONNECTORS) | Polypropylene | 9003-07-0 |
| | Steel | 7439-89-6 |
| | Antimony Trioxide | 1309-64-4 |
| | Zinc | 7440-66-6 |
| 22. SILICONE SEALENT | Ethyltriacetoxvsilane | 17689-77-9 |
| | Methyltriacetoxysilane | 253-34-3 |
| 23. CONCRETE MIX | Crush Stone and Gravel | |
| | Sand | |
| | Porl Land Cement | 65997-15-1 |
| | Crystaline Silica | 14808-60-7 |
| | Water | |
| 24. FIRE CAULK | Calcium Carbonate | 1317-65-3 |
| | Polymer | Trade Secret |
| | Water | 7732-18-5 |
| | Acrylic Emolusion | 70677-008 |
| | Mineral Spirits | 64742-88-7 |
| | Pasticizer | 27138-31-4 |
| | Ethylene Glycol | 107-21-1 |
| 25. ROOFING TAR | Acenaphtene | 83-32-9 |
| | Anthracene | 120-12-7 |
| | Benzo Anthracene | 56-55-3 |
| | Benzo Acridine | 225-51-4 |
| | Benzo Fluotanthene | 205-99-2 |
| | Benzo Pyrene | 50-32-8 |
| | Chrysene | 218-01-9 |
| 26. CUTTING OIL | Hydrotreated Nephthenic Oil | 64742-52-5 |
| | Additive Bland | Proprietaly |
| | Liquefied Petroleum Gas | 68476-86-8 |

# DRY WALL

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 27. Sheet Steel | Iron | 7439-89-6 |
| | Aluminum | 7429-90-5 |
| | Antimony | 7440-36-0 |
| | Arsenic | 7440-38-2 |
| | Beryllium | 7440-41-7 |
| | Boron | 7440-42-8 |
| | Cadmium | 7440-43-9 |
| | Calcium | 1305-78-8 |
| | Carbon | 7440-44-0 |
| | Chromium | 7440-47-3 |
| | Cobalt | 7440-48-4 |
| | Copper | 7440-50-8 |
| | Lead | 7439-92-1 |
| | Magnesium | 7439-95-4 |
| | Manganese | 7439-96-5 |
| | Molybdenum | 7439-98-7 |
| | Niobium | 7440-03-1 |
| | Nickel | 7440-02-0 |
| | Nitrogen | 7727-37-9 |
| | Phosphorus | 7723-14-0 |
| | Selenium | 7782-49-2 |
| | Silicon | 7440-21-3 |
| | Sulfur | 7446-09-05 |
| | Tin | 7440-31-5 |
| | Titanium | 7440-32-6 |
| | Tungsten | 7440-33-7 |
| | Vanadium | 7440-62-2 |
| | Zinc | 7440-66-6 |
| | Hydrochloric Acid | 7647-01-0 |
| | Natural or Synthetic oils | Mixture |
| | Anhydrous | 1310-58-3 |
| | Glycine | 60-00-4 |
| | Polyalkylene Glycol | Mixture |
| | Sodium Nitrate | 7632-00-0 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 28. Gold Bond Gypsum Board | Calcium Sulfate Dihydrate | 10101-41-4 |
| | Crystalline Silica | 14808-60-7 |
| | Cellulose | 9004-34-6 |
| | Proprietary Additives | N/A |
| | Fiberglas, Synthetic, Vitreous, Continuous | 65997-17-3 |
| 29. American Gypsum Wallboard Panels | Calcium Sulfate | 13397-24-5, 10101-41-4 |
| | Cellulose | 9004-34-6 |
| | Boric Acid | 10043-35-3 |
| | Potassium Sulfate | 7778-80-5 |
| | Glass Fiber | 65944-17-3 |
| | Vermiculite | 01318-00-9 |
| | Paraffin Wax | 8002-74-2 |
| | Crystalline Silica | 14808-60-7 |
| 30. Gold Bond Gypsum XP Board | Calcium Sulfate Dihydrate | 10101-41-4 |
| | Crystalline Silica | 14808-60-7 |
| | Cellulose | 9004-34-6 |
| | Proprietary Additives | N/A |
| 31. Permabase Cement Board Products | Portland Cement | 65997-15-1 |
| | High Alumina Cement | 65997-16-2 |
| | Pozzolan | N/A |
| | Sand | N/A |
| | Naphthalen Sulfonate | N/A |
| | Crystalline Silica | 14808-60-7 |
| | Fiberglass Scrim or Fiberglass laminate | 65997-17-3 |
| 32. Gold Bond Gypsum-Exterior | Calcium Sulfate Dihydrate | 10101-41-4 |
| | Crystalline Silica | 14808-60-7 |
| | Cellulose | 9004-34-6 |
| 33. Glass Mat-Faced Gypsum Panels | Calcium Sulfate | 7778-18-9 |
| | Continuous Filament Glass Fiber | 65997-17-3 |
| | Crystalline Silica | 14808-60-7 |
| 34. SoundStop Board | Wood Fiber | N/A |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 35. Drywall cement, joints & compounds | Calcium Carbonate | 1314-65-3 |
| | Water | 7732-18-5 |
| | Mica | 12001-26-2 |
| | Perlite | 93763-70-3 |
| | Polyvinyl Acetate Emulsion | N/A |
| | Kaolin Clay | 1332-58-7 |
| | Cellulose Ethers | 9004-65-3 |
| | Hydrous Magnesium Aluminum Silicate | 12174-11-7 |
| | Vinyl Acetate Polymer | 9003-20-7 |
| | Polyvinyl Alcohol | 9002-89-5 |
| | Diethylene Glycol | 111-46-6 |
| | Crystalline Silica | 14808-60-7 |
| 36. Drywall joint & patching compounds | Calcium Sulfate (Plaster of Paris) | 7778-18-9 |
| | Calcium Carbonate, Limestone | 1317-65-3 |
| | Perlite | 93763-70-3 |
| | Talc | 14807-96-6 |
| | Starch | 9005-25-8 |
| | Mica | 12001-26-2 |
| | Attapulgite Clay | 12174-11-7 |
| | Kaolin Clay | 1332-58-7 |
| | Crystalline Silica | 14808-60-7 |
| 37. Gypsum Board Paper & Joint Tape | Cellulose | 9004-34-6 |
| 38. FibaTape | Fiber Glass Textile Continuous Filament | 65997-17-3 |
| | Polyester Textile Continuous Filament | 25038-59-9 |
| 39. Celfort Insulation | Polystyrene | 9003-53-6 |
| | HCFC-142b | 75-68-3 |
| | Hexabromocyclododecane | 3194-55-6 |
| | HCFC-22 | 75-45-6 |
| 40. Dricon Fire Retardant Wood/Lumber | Boric Acid | 10043-35-3 |
| | Guanylurea Phosphate | 17675-60-4 |
| | Wood Dust | N/A |
| | Formaldehyde | 50-00-0 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 41. Power-Actuated Loads | Copper | 7440-50-8 |
| | Zinc | 7440-66-6 |
| | Barium Nitrate | 10022-31-8 |
| | Lead Styphnate | 15245-44-0 |
| | Tetracene | 109-27-3 |
| | Nitrocellulose | 9004-70-0 |
| | Nitroglycerin | 55-63-0 |
| 42. Propylene/I-Butene Fuel | Propylene | 115-07-1 |
| | 1-Butene | 106-98-9 |
| 43. Antimonial Lead in Anchors | Antimony | 7440-36-0 |
| | Lead | 7439-92-1 |
| 44. Safety Boosters (for powder actuated fastening tools) | Nitroglycerin | 00055-63-0 |
| | Nitrocellulose | 09004-70-0 |
| | Lead Styphnate | 15245-44-0 |
| | Barium Nitrate | 10022-31-8 |
| | Tetracene | 00109-27-3 |
| 45. Hilti GX 120 gas can | Isobutane | 75-28-5 |
| | Propene | 115-07-1 |
| | Propane Liquefied | 74-98-6 |
| 46. Fire Resistant Sealant | Calcium Carbonate | 01317-65-3 |
| | Ethylene Glycol | 00107-21-1 |
| | Titanium Dioxide | 13463-67-7(CP606 White & CP606 Grey) |
| | Red Iron Oxide | 1309-37-1 (CP606 Red) |
| | Black Iron Oxide | 1317-61-9 (CP606 Grey) |
| 47. Methacrylate Resin & Hardener- Large Tube (HY150 Max) Part A | Quartz Sand | 14808-60-7 |
| | 1,4 Butanediol Dimethacrylate | 2082-81-7 |
| 48. Methacrylate Resin & Hardener- Large Tube (HY150 Max) Part B | Quartz Sand | 14808-60-7 |
| | Aluminum Oxide | 001344-28-1 |
| | Dibenzoyl Peroxide | 00094-36-0 |
| | Amorphous Silica | 07631-86-9 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 49. Gypsum Acoustical Sealant | Limestone | 1317-65-3 |
| | Acrylic Polymer | Proprietary |
| | Butyl Benzyl Phthalate | 85-68-7 |
| | Water | 7732-18-5 |
| | Ethylene Glycol | 107-21-1 |
| | Crystalline Silica | 14808-60-7 |
| 50. Concentrated color indicator Marking Chalk-red | Iron Oxide | 1309-37-1 |
| | Calcium Carbonate | 471-34-1 15mg/m3 |
| | Silicon Dioxide | 7631-86-9 |
| 51. Concentrated color indicator Marking Chalk-Blue | Ultramarine Blue | 57455-37-5 |
| | Calcium Carbonate | 471-34-1 15mg/m3 |
| | Silicon Dioxide | 7631-86-9 |
| 52. Concentrated color indicator Marking Chalk- Black | Iron Oxide | 1317-61-9 |
| | Calcium Carbonate | 471-34-1 15mg/m3 |
| | Silicon Dioxide | 7631-86-9 |
| 53. Krylon Acrylic Crystal Clear, Gloss<br><br>54. Carbon Steel sheet/Strip & hot rolled Skelp | Propane | 74-98-6 |
| | Butane | 106-97-8 |
| | Toluene | 108-88-3 |
| | Medium Aromatic Hydrocarbons | 64742-94-5 |
| | Naphthalene | 91-20-3 |
| | Acetone | 67-64-1 |
| | Ethyl 3-Ethoxypropionate | 763-69-9 |
| | Iron | 7439-89-6 |
| | Calcium | 7440-70-2 |
| | Carbon | 7440-44-0 |
| | Copper | 7440-50-8 |
| | Manganese | 7439-96-5 |
| | Phosphorus | 8049-19-2 |
| | Silicon | 7440-21-3 |
| | Sulfur | 7704-34-9 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 55. Stainless Steel (Door Hardware) | Chromium | 7440-47-3 |
| | Nickel | 7440-02-0 |
| | Molybdenum | 7439-98-7 |
| | Vanadium | 7440-62-2 |
| | Cobalt | 7440-48-4 |
| | Manganese | 7439-96-5 |
| | Aluminum | 7429-90-5 |
| | Silicon | 7440-21-3 |
| | Copper | 7440-50-8 |
| | Iron | 7439-89-6 |
| 56. Aerosol Touch up Paint | Acetone | 67-64-1 |
| | Propane Blend | 74-98-6 |
| | Isobutyl Acetate | 110-19-0 |
| | VM&P Naptha | 64742-89-8 |
| | Methyl Ethyl Ketone | 78-93-3 |
| | Ethyle glycol mono butyl ether | 111-76-2 |
| | Isopropyl Alcohol | 67-63-0 |
| | Ethyl Alcohol | 64-17-5 |
| | Phenylethane | 100-41-4 |
| | Titanium Dioxide | 13463-67-7 |
| | Carbon Black | 1333-86-4 |
| 57. Wood/Wood Dust (w/o chemicals) | Wood | None |
| 58. Plywood | Wood | N/A |
| | Phenol formaldehyde resin solids | N/A |
| 59. Particleboard | Formaldehyde | 50-00-0 |
| 60. Fiberglass Reinforced Plastic | Fibrous glass, continuous filament | 65997-17-3 |
| | Organic Surface Binder/Sizing | N/A |
| 61. Marlite FRP Adhesive | Urea | 57-13-6 |
| | Oxydipropyl Dibenzoate | 27138-31-4 |
| | Ethanediol | 107-21-1 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 62. Construction Adhesive/Caulk | Limestone | 1317-65-3 |
| | Kaolin Clay | 1332-58-7 |
| | Titanium Dioxide | 13463-67-7 |
| | Heptane | 142-82-5 |
| | Cristobalite | 14464-46-1 |
| | Quartz | 14808-60-7 |
| | Styrene-Butadiene Polymer | 26471-45-4 |
| | Petroleum Hyrdrocarbon | 64742-52-5 |
| | Solvent Naphtha | 64742-89-8 |
| | Acetone | 67-64-1 |
| | Resin | 68131-89-5 |
| 63. Hi-Strength Spray Adhesive | Dimethyl Ether | 115-10-6 |
| | Methyl Acetate | 79-20-9 |
| | Cyclohexane | 110-82-7 |
| | Non-Volatile NJ Trade Secret#04499600-6448P | Trade Secret |
| | 1,1-Difluoroethane | 75-37-6 |
| | Pentane | 109-66-0 |
| | Methyl Alcohol | 67-56-1 |
| 64. Masking Tape | Polyethylene | 9002-88-4 |
| 65. Duct Tape | Polyethylene Film | 9002-88-4 |
| | Filler | Various |
| | Aliphatic Hydrocarbon Resins | Unknown |
| | Rubber | 9003-31-0 |
| | Cloth | Various |
| 66. Scotch Gray Masking Paper | Gray Paper | 9004-34-6 |
| 67. Polyethylene Sheeting-Natural | Polyethylene Copolymer | 26221-73-8 |
| | Polyethylene | 9002-88-4 |
| | Calcium Carbonate | 1317-65-3 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 68. Acrylic Latex Caulk plus Silicone | Calcium Carbonate | 1317-65-3 |
| | Ester Branched&Linear (C7/C9) | Phthalate Ester |
| | Titanium Dioxide | 13463-67-7 |
| | Carbon Black | 1333-86-4 |
| | Silica, Crystalline | 14808-60-7 |
| | Ethylene Glycol | 107-21-1 |
| | Ammonia | 7664-41-7 |
| | Formaldehyde | 50-00-0 |
| | Ethyl Acrylate | 140-88-5 |
| | Acetadehyde | 75-07-0 |
| | Acrylonitrile | 107-13-1 |
| 69. Topcoat-White Primer | Octamethylcyclotetrasiloxane | 556-67-2 |
| | 1-Chloro-4 (Trifluoromethyl) Benzene | 98-56-6 |
| | Titanium Dioxide | 13463-67-7 |
| | Magnesium Silicate | 14807-96-6 |
| | Mineral Spirits | 64742-88-7 |
| | Calcium Metasilicate | 13983-17-0 |
| | Quartz | 14808-60-7 |
| | Ethylbenzene | 100-41-4 |
| 70. Topcoat- Flat Black | Octamethylcyclotetrasiloxane | 556-67-2 |
| | 1-Chloro-4 (Trifluoromethyl) Benzene | 98-56-6 |
| | Magnesium Silicate | 14807-96-6 |
| | Mineral Spirits | 64742-88-7 |
| | Carbon Black | 1333-86-4 |
| | Quartz | 14808-60-7 |
| 71. Topcoat-Yellow | 1-Chloro-4 (Trifluoromethyl) Benzene | 98-56-6 |
| | Octamethylcyclotetrasiloxane | 556-67-2 |
| | Titanium Dioxide | 13463-67-7 |
| | Mineral Spirits | 64742-88-7 |
| | Ethylbenzene | 100-41-4 |
| 72. Ceiling Tile Grid | Aluminum | 7429-90-5 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 73. Ceiling Tile Panel (USG) | Slag Wool Fiber | 65997-17-3 |
| | Expanded Perlite | 93763-70-3 |
| | Cellulose | 9004-34-6 |
| | Strach | 9005-25-8 |
| | Kaolin | 1332-58-7 |
| | Calcium sulfate Dihydrate | 10101-41-4 |
| | Lime Stone | 1317-65-3 |
| | Or Dolomite | 16389-88-1 |
| | Crystalline Silica | 14808-60-7 |
| | Vinyl Acetate Polymer | 9003-20-7 |
| | Or Ethylene Vinyl Acetate Polymer | 24937-78-8 |
| | Aluminum Foil | 7429-90-5 |
| 74. Ceiling Tile Panel (Armstrong) | Fibrous Glass | 65997-17-3 |
| 75. Vinyl Cove Base | Vinyl Chloride | 75-01-4 |
| 76. Cove Base Adhesive | No Reportable Ingredients | N/A |
| 77. WD-40 Aerosol | Aliphatic Hydrocarbon | 64742-47-8 |
| | Petroleum Base Oil | 64742-58-1, 64742-53-6, 64742-56-9, 64742-65-0 |
| | LVP Aliphatic Hydrocarbon | 64742-47-8 |
| | Carbon Dioxide | 124-38-9 |
| | Surfactant | Proprietary |
| | Non-Hazardous Ingredients | Mixture |
| 78. Sakrete Concrete | Silica | 14808-60-7 |
| | Crystalline | 14808-60-7 |
| | Quartz | 14808-60-7 |
| | Portland Cement | 65997-15-1, 68131-74-8 |
| | Pozzolan | 7631-86-9, 65996-69-2 |
| 79. Fire Extinguisher | Potassium Acetate | 127-08-2 |
| | Potassium Citrate | 866-84-2 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 80. Gasolines | Toluene | 108-88-3 |
| | Pentaness, All Isomers | Mixture |
| | Octanes, All Isomers | Mixture |
| | Xylene, All Isomers | 1330-20-7 |
| | Hexane, Other Isomers | Mixture |
| | Heptane, All Isomers | 142-82-5 |
| | Ethanol | 64-17-5 |
| | N-Hexane | 110-54-3 |
| | Benzene | 71-43-2 |
| | Trimethylbenzenes, All Isomers | 25551-13-7 |
| | 2,2,4-Trimethylpentane | 540-84-1 |
| | Cumene | 98-82-8 |
| | Ethylbenzene | 100-41-4 |
| | 1,2,4 Trimetjylbenzene | 95-63-6 |
| | Cyclohexane | 110-82-7 |
| | Cyclopentane | 287-92-3 |
| | Naphthalene | 91-20-3 |
| | Styrene | 100-42-5 |
| 81. No. 2 Diesel Fuel | Diesel Fuel No. 2 | 68476-34-6 |
| | Hydrodesulfurized Middle Distillate (Petroleum) | 64742-80-9 |
| | Straight-run Middle Distillate (Petroleum) | 64741-44-2 |
| | Hydrodesulfurized Light Catalytic Cracked Distillate (Petroleum) | 68333-25-5 |
| | Kerosene | 8008-20-6 |
| | Hydrodesulfurized Kerosine (Petroleum) | 64742-81-0 |
| | Light Catalytic Cracked Distillate (Petroleum) | 64741-59-9 |
| | Nonane, All Isomers | Mixture |
| | Trimethylbenzenes, All Isomers | 25551-13-7 |
| | Naphthalene | 91-20-3 |
| | Cumene | 98-82-8 |
| | Ethylbenzene | 100-41-4 |

# OFFICE

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 82. Windex Original Glass Cleaner with Ammonia-D | Water | 7732-18-5 |
| | Isopropyl Alcohol | 67-63-0 |
| | 2-Hexoxyethanol | 68814-14-2 |
| | Videt EGM | N/A |
| | Sodium C14-17 Sec-Alkyl Sulfonate | N/A |
| | Ammonium Hydroxide | 16393-49-0 |
| | Propylene Glycol | 63625-56-9 |
| | Mirapol Surf S-210 | N/A |
| | Fragrance | N/A |
| | Liquitint Sky Blue Dye | N/A |
| 83. Scotch 3M Sealing Tape | Film Backing | N/A |
| | Rubber Adhesive | N/A |
| 84. 3M Industrial Sealant Tape | Kaolin | 1332-58-7 |
| | Polybutylene | 9003-29-6 |
| | Carbon Black | 1333-86-4 |
| | Isobutylene-Isoprene Polymer | 9010-85-9 |
| | Glycerol Ester of Hydrogenated Rosin | 65997-13-9 |
| | Talc | 14807-96-6 |
| | Solvent-Refined Heavy Paraffinic Petroleum Distillates | 64741-88-4 |
| | Rutile Titanium Dioxide | 1317-80-2 |
| | Quartz Silica | 14808-60-7 |
| 85. Felt Tip Pen | Water | 7732-18-5 |
| | Glycerin | 56-81-5 |
| | Ethylene Glycol | 107-21-1 |
| 86. Expo Dry Erase Cleaner | Water | 7732-18-5 |
| | 2-Butoxyethanol | 111-76-2 |
| | Isopropyl Alcohol | 67-63-0 |
| 87. Lysol Disinfectant Spray | Ethanol | 64-17-5 |
| | Butane | 106-97-8 |
| | Propane | 74-98-6 |
| | Alkyl | N/A |
| 88. Pitney Bowes E-Z Seal Plus | Isopropyl Alcohol | 67-63-0 |
| | Ammonium | 68424-85-1 |
| 89. Perfect Data EcoDuster | Difluoroethane | 75-37-6 |
| 90. P-Touch TZ Tape | Paper | N/A |
| 91. Elmer's Rubber Cement | Heptane | 142-82-5 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 92. Innovera Red Ink Cartridge | No reportable ingredients present | N/A |
| 93. Papermate Liquid Paper | Aliphatic Hydrocarbon | N/A |
| | Naptha Heavy Alkylate | 64741-65-7 |
| | Mineral Spirits | 8052-41-3 |
| | Titanium Dioxide | 13463-67-7 |
| 94. Sharpie Highlighter (all colors) | Glycerol | 56-81-5 |
| | Gelling Agent | N/A |
| | Water | 7732-18-5 |
| | Dyes | N/A |
| 95. Sharpie Marker (all sizes & colors) | Butanol | 71-36-3 |
| | Propanol | 71-23-8 |
| | Diacetone Alcohol | 123-42-2 |
| | Ethanol | 64-17-5 |
| | Pigments | N/A |
| | Dyes | N/A |
| | Additives | N/A |
| 96. Uniball Pen - Fine point | Water | 7732-18-5 |
| | Ethylene Glycol | 107-21-1 |
| | Glycerin | 56-81-5 |
| | Diethylene Glycol | 111-46-6 |
| | Dyes | N/A |
| | Buffer | N/A |
| | Surfactant | N/A |
| | Preservative | N/A |
| 97. Papermate Stick Pen (all colors) | Glycols | 122-99-6 |
| | | 111-90-0 |
| | | 25265-71-8 |
| | | 107-41-5 |
| | Alcohol | 100-51-6 |
| | Resin | N/A |
| | Dyes | N/A |
| | Additives | N/A |
| 98. Bic Cover-it Correction Fluid | Titanium Dioxide | 13463-67-7 |
| | Naptha Light Alkylate | 64741-66-8 |
| | Naptha Hydrotreated Light | 64742-49-0 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 99. Bic Brite Liner Highlighter (all colors) | Ethylene Glycol | 107-21-1 |
| | 1-Methyl-2-pyrrolidone | 872-50-4 |
| | C.I. Basic Red 1 | 989-38-8 |
| | Polyvinyl Pyrrolidone | 9003-39-8 |
| | Triethanolamine | 102-71-6 |
| 100. Hi-Liter (all colors) | No hazardous ingredients | N/A |
| 101. Avery Marks-A-Lot Permanent Marker | n-Propanol | 71-23-8 |
| 102. Ajax Super degreaser dish liquid | Lauramidopropyldime Thylamine Oxide | 61792-31-2 |
| 103. Equate Hand soap | No hazardous ingredients | N/A |
| 104. Energizer Alkaline Batteries (all sizes) | Graphite | 7782-42-5 |
| | Manganese Dioxide | 1313-13-9 |
| | Potassium Hydroxide | 1310-58-3 |
| | Zinc | 7440-66-6 |
| | Steel Iron | 7439-89-6 |
| | Water | N/A |
| | Paper | N/A |
| | Plastic | N/A |
| 105. Lithium Coin Battery | Active Material | N/A |
| | Manganese Dioxide | 1313-13-9 |
| | Lithium Triflouromethanesulfonimide | 90076-65-6 |
| | Lithium Triflouromethanesulfonate | 33454-82-9 |
| | Carbon Black | 1333-86-4 |
| | Lithium Metal | 7439-93-2 |
| | Propylene Carbonate | 108-32-7 |
| | Dimethoxymethane | 110-714-4 |
| | Dioxolane | N/A |
| | Steel | 7439-89-6 |
| | Graphite | 7782-42-5 |
| 106. Finish Gel (all scents) | Sodium Silicate | 1344-09-8 |
| | Potassium Hydroxide | 1310-58-3 |
| | Sodium Hypochlorite | 7681-52-9 |
| 107. Magic Stainless Steel Spray | Mineral Oil | 8042-47-5 |
| | Tripropylene Glycol Methyl Ether | 25498-49-1 |
| 108. Toner-Black | Carbon | 1333-86-4 |
| | Silicon Compound | 7631-86-9 |
| 109. Toner-Cyan | Organic Pigment | 147-14-8 |
| | Silicon Compound | 7631-86-9 |

| PRODUCT NAME | CHEMICAL NAME | CAS # |
|---|---|---|
| 110. Toner-Yellow | Organic Pigment | 76199-85-4 |
| | Silicon Compound | 7631-86-9 |
| 111. Toner-Magenta | Organic Pigment | 67990-05-0 |
| | Silicon Compound | 7631-86-9 |