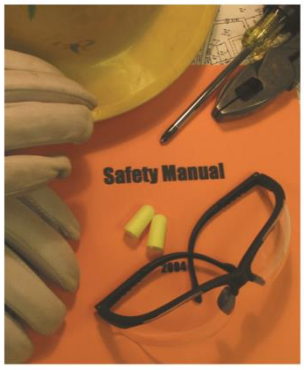
National Safety CONSULTING

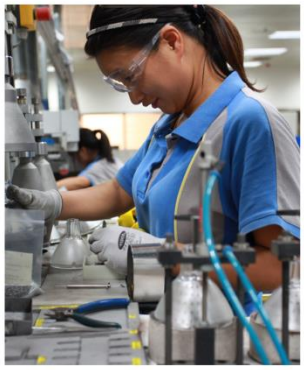
IMPACT STRATEGIES

# Safety Manual

## 2023








National Safety Consulting (“NSC”) has compiled this Safety Manual to reflect information received from industry representatives and from the Occupational Safety and Health Administration (“OSHA”). Because industry standards and regulations change from time to time, the information contained in this Safety Manual may be inaccurate, and NSC assumes no responsibility to update this Safety Manual, unless holder is a currently retained customer.

Accordingly, this Safety Manual should only be used as a supplement to, and not a substitute for, the latest industry standards and regulations, including the Occupational Safety and Health Act and any standards issued by OSHA or other federal, state and local agencies. You agree to indemnify and hold NSC and its affiliates harmless for any failure to comply with such standards and regulations, whether or not they are reflected in the Safety Manual.

# IMPACT Strategies

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# Chapter 1 SAFETY POLICY

A. Company Policy and Commitment to Safety

IMPACT Strategies is dedicated to providing a safe and healthy work environment for all of our employees. The Company shall follow operating practices that will safeguard employees, the public and Company operations. Furthermore, compliance with all Federal, State, and local safety and health regulations is mandatory. **"We believe all incidents are preventable and want everybody to go home safely every night."**

IMPACT Strategies maintains a professional and harassment-free work environment in which all employees conduct themselves with respect for one another and for those with whom we deal with on behalf of the company. We prohibit harassment on the basis of age, color, disability, ethnicity, marital or family status, national origin, race, religion, sex, sexual orientation, veteran status, or any other characteristic protected by law.

B. Safety Violation

1. Should any IMPACT Strategies employee commit an unsafe act, intentional or not, this action shall be addressed by the immediate supervisor and reviewed by the Safety Coordinator and Management.
2. It is not required to complete all steps of the disciplinary procedure in every case. Discipline may begin at any step appropriate to the situation. Discipline includes, but is not limited to:
    a. Verbal Reprimand
    b. Written Reprimand
    c. Suspension from Job Site
    d. Termination of Employment Contract
3. Willful Safety Violation
    a. Employees committing willful behavior in a manner that results in a Life Threatening safety violation will be terminated immediately
4. Paperwork
    a. A Safety Violation Notice shall be completed for all written reprimands.
    b. A copy shall be maintained in the employee's file and provided to the Supervisor, if corrective action(s) is required.

C. Assignment of Responsibilities

Safety is everyone's responsibility. Everyone shall have a safe attitude and practice safe behavior at all times. To best administer and monitor our safety policies, the following responsibilities are stated. This list shall not be construed as all-inclusive and is subject to change as needed.

1. Management Responsibilities
    a. Management has the responsibility for incident prevention in the performance of all company activities.
    b. Management is responsible for assuring that all operations comply with applicable government regulations and company policies.
    c. Management displays its concern for the well-being of its employees through its active participation and support of the incident prevention program.

d. Management has an obligation to support and when necessary to direct all supervisory personnel and the company's safety coordinator in the execution of their duties.

2. Supervisor Responsibilities
    a. Walk the jobsite at least weekly to conduct a Task Safety Observation (TSO) and complete a TSO card
    b. The Supervisor must consider both existing and anticipated safety hazards associated with the work place.
    c. The Supervisor must make provisions for employee safeguarding, by allowing for the procurement of personal protective equipment, and safe tools and equipment.
    d. The Supervisor must take into consideration the protection of the public and the protection of the owner's private property.
    e. It is the Supervisors responsibility to plan and conduct all operations with full regard to safety and shall insure compliance with all federal, state, and local safety regulations, all jobsite rules and operating procedures, and implement additional rules and procedures as required to further incident prevention at the worksite and hold the responsibility for incident prevention within their crew.
    f. The Supervisor shall participate in incident investigations, safety meetings, site inspections and general safety awareness.
3. Employee Responsibilities
    a. Employees are responsible for complying with all job safety rules and regulations.
    b. Employees are responsible for reporting all incidents and for correcting and/or reporting any unsafe acts or conditions to their Supervisor.
    c. Employees are encouraged to participate fully in the incident prevention program.
    d. Employees have an obligation to question management and Supervisors concerning any direction(s) or safety precaution(s) they do not understand.
    e. Employees must attend all training sessions to reinforce the skills needed to perform their jobs in a safe manner in and around their work area.
4. Safety Coordinator Responsibilities
    a. The Safety Coordinator will provide safety meeting topics (tool box talks) to the Supervisor to be read and signed at the safety meetings.
    b. The Safety Coordinator is responsible to consult on matters in developing the objectives for jobsite incident prevention programs and their implementation.
    c. The Safety Coordinator shall consult with the company management on safety-related matters, keeping both groups current with inspection results, incident reports, corrective actions, general incident statistics, trends, changes in government safety regulations (OSHA), and other pertinent information.
    d. The Safety Coordinator will help monitor the completion of the OSHA 300 Injury/Illness Log.

D. General Rules
1. All Employees are responsible for safety
2. Comply with all established safety rules, regulations, procedures, and instructions which are applicable to your own actions and conduct

3. Promptly report all incidents, hazards, incidents, and near-miss occurrences to your Supervisor, regardless of whether or not injury or property damage was involved.
4. Do not visit, talk to, or distract another employee who is operating a machine, or who is engaged in a work activity where the possibility of injury exists.
5. Do not participate in horseplay, scuffling, pushing, fighting, throwing things, or practical jokes.
6. Observe all no-smoking signs and regulations.
7. Do not run on work site premises except during emergencies.
8. Use handrails on steps, elevated platforms, scaffolds, or other elevations.
9. Assist others and ask for assistance in lifting and carrying heavy or awkward objects.
10. Personal stereos with headphones (ie: iPods) are not permitted to be worn at the work site.
11. Being under the influence of, possessing, or using alcohol and/or illegal drugs at work site is prohibited.

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# Chapter 2 TRAINING & MONITORING

A. Training

Training will be provided in order to assure the requirements of OSHA standards are met and continuously evaluate employee training needs to keep workers safe and healthy on the job.

1. New Employee Orientation

   New employees will receive training on the company's safe work practices and expectations, this safety manual, and specific safety and health training for the tasks that they will perform.

2. Safety Coordinator Training

   The Safety Coordinator or other designated person will appraise the skill and knowledge level of exposed workers, and provide any additional training, as required.

3. Assessment of employee understanding will be determined through job performance, performance testing, and if employees come forward with concerns.
4. Where safety and health training is needed, appropriate training will be provided to include:
   a. Hazard recognition.
   b. Necessary precautions to be used (best work practices and PPE).
5. Training length and level of detail will be determined by the severity of the hazards and the requirements of OSHA.
6. Records will be maintained with the following information:
   a. Topic(s) covered
   b. Name of trainer
   c. Date of training
   d. Employee name
   e. Verification of employee understanding

B. Toolbox Talks

1. Weekly Tool Box Talks will be conducted on a weekly basis for their employees at the work site
2. All Foremen / Supervisors are required to attend
3. Emergency procedures shall be periodically reviewed
4. Employees shall be reminded to put safety first and look out for their fellow workers
5. Employees shall be encouraged to offer comments and safety suggestions at this time and regularly throughout the day as needed

C. Inspections

Periodic inspections will be conducted to identify hazardous conditions and unsafe behaviors. The Supervisor will conduct inspections, as well as insurance company Loss Prevention personnel and/or the company assigned safety coordinator. The inspection shall look for unsafe practices and conditions that can cause an incident and take corrective action immediately.

***Checklist can be found in the Forms section of this manual***

D. Task Safety Observation (TSO) Program

At-Risk behaviors are the leading cause of most workplace injuries. The Task Safety Observation (TSO) Program aims at identifying Safe and At-Risk behaviors (“near misses”) to prevent an incident that may result in severe injury or death from occurring.

The basis of this program is identification of “leading indicators”. Leading Indicators are both Safe (S) and At-Risk (AR) behaviors that allow us track and prevent incidents on the jobsite and proactively change behavior, resulting in a safer jobsite. By improving our safety culture at IMPACT, and practicing safe behavior, safety becomes second nature.

TSO cards are provided to all on-site supervisory personnel, both with IMPACT Strategies (Superintendents and Project Engineers) as well as Superintendents and foreman of our subcontractors. The TSO cards provide a checklist of observations that can be made while performing an audit or safety walk on the jobsite. The observations are broken down into four categories: 1) Body Positioning/Exposure, 2) Working Conditions, 3) Personal Protective Equipment and 4) Work Practices. The intention is for the Superintendent or PE to walk the jobsite at least once per week, while observing and notating Safe and At-Risk behaviors witnessed. The person performing the observations is encouraged to interact with the individual being observed by either reinforcing safe behavior or discussing why an observed behavior poses risk or is unsafe. These interactions promote a partnership between IMPACT Strategies and Subcontractors and reinforce the common goal of maintaining a safe working environment.

Data compiled on Safe and At-Risk behaviors will be collected and tracked by IMPACT’s Corporate Safety Director on a monthly basis, in order to identify trends on the jobsite. For example, if it’s discovered that most At-Risk behaviors reported involve PPE, IMPACT will tailor upcoming Tool Box Talk topics and Safety meetings to address behaviors that have been shown to cause risk.

# Chapter 3 SUBSTANCE ABUSE POLICY

A. Substance-Abuse Policy

It is recognized that if IMPACT Strategies employees use, store, possess, manufacture, or distribute illegal substances in the work place, it is a violation of this policy and it poses serious risks to the safety and health of the entire work force, as well as to the future well-being of each and every employee. Prescription drugs may only be used as directed by the individual for which that prescription is issued by a licensed physician.

No employee may use, possess, distribute, deliver, or be under the influence of a drug, or use or be under the influence of alcohol, while performing work. An employee is considered to be under the influence of alcohol for the purposes of this policy if the alcohol concentration is his or her blood or breath at the time alleged as shown by analysis of the employees blood or breath is at or above 0.02.

If this problem exists, it could damage the quality of services the company renders to its customers, cause damage to persons and property due to accidents and carelessness, lower morale within the work place, threaten the very ability of the company to compete in the market place, and ultimately threaten the financial security of both the company and the work force alike.

Subject to the following conditions, the Employer shall have the right to require an Employee to submit to urinalysis for illegal substances prior to assignment to projects where customer specifications or governmental regulations mandate such testing. In addition, the Employer shall have the right to implement Random Testing, “For Cause” testing and Post Accident testing as outlined below:

B. Testing

Any employee being notified to submit to a drug and/or alcohol test will sign a Substance Abuse Testing Notification Form regardless of the category in which the testing falls.

1. Pre-employment Testing

   Offers of employment with IMPACT Strategies may be conditioned on proper cooperation with and participation in a drug and controlled substance screening test. Following a conditional employment offer, applicants will be asked to sign a form consenting to a screening test as part of the application process. Failure to sign the consent form may be considered a withdrawal of the application.

2. Random Testing

   Random drug and alcohol testing may be conducted. Employees selected for Random Testing shall report to the drug testing laboratory the same day that they are notified that they have been selected so long as proper laboratory facilities are provided during working hours. The testing and selection shall be conducted by a third party. Random Testing will be based on an agreement between IMPACT Strategies and customer or union contract.

3. “Reasonable Suspicion” Testing

   An employee whose supervisor has reasonable suspicion to believe the employee is under the influence of alcohol or a drug is subject to discipline up to and including termination, and is required to undergo an alcohol or drug test.

   a. "Reasonable suspicion" means a belief, based on behavioral observations or other evidence, sufficient to lead a prudent or reasonable person to suspect an employee is under the influence and exhibits slurred speech, erratic behavior, decreased motor skills, or other such traits. Circumstances, both physical and psychological, shall be given consideration.

b. Whenever possible before an employee is required to submit to testing based on reasonable suspicion, more than one supervisory or managerial employee shall observe the employee.

c. The employer who is requiring an employee to be tested based upon reasonable suspicion shall provide transportation for the employee to the testing facility and may send a representative to accompany the employee to the testing facility. Under no circumstances may an employee thought to be under the influence of alcohol or a drug be allowed to operate a vehicle or other equipment for any purpose.

d. The employee shall be removed from the job site and placed on inactive status pending the employer's receipt of notice of the test results. The employee shall have the right to request a representative or designee to be present at the time he or she is directed to provide a specimen for testing based upon reasonable suspicion.

e. If the test result is positive for drugs or alcohol, the employee shall be subject to termination. The employer shall pay all costs related to this testing.

f. If the test result is negative, the employee shall be placed on active status and shall be put back to work by the employer. The employee shall be paid for all lost time to include all time needed to complete the drug or alcohol test and any and all overtime according to the employee's contract

4. Post-Accident Testing

If substance-abuse is likely to have been a contributing factor to the cause of an accident, the program may require that an employee submit to testing for drugs and alcohol.

a. Employees may be subject to testing after a work related accident involving medical treatment (other than first aid), or which results in a lost work day to the individual or which involves significant property damage.

b. Employee injuries that are considered to have occurred through no fault of the employee shall be excluded from testing.

C. Testing Guidelines

All Substance Abuse testing under this Memorandum of Understanding shall be carried out under the following conditions:

1. The Employer shall be responsible for all expenses incurred in carrying out drug testing, including, but not limited to lost time, travel time, travel expense and all costs of testing, except under item 6.
2. Only employees who are in the Random Testing Selection Pool or who agree to be tested and be placed in the Random Testing Selection Pool will be employed on projects covered by this agreement.
3. All testing shall become under the control and supervision of a physician with confidentiality protected in accordance with the “American Occupational Medical Association’s Code of Ethical Conduct for Physicians Providing Occupational Medical Services” (adopted by the Board of Directors of AOMA’s July 23, 1976) and “drug Screening in the Work Place Ethical Guidelines” (adopted July 26, 1986), and the Medical Review Officer Manual, as developed by the National Institute on Drug Abuse (published September 1988).
4. Urine testing shall be performed only by laboratories listed by current federal standards.
5. A “positive” drug test result shall mean test levels on both the screening test and the confirmatory test that are recognized as positive by current federal standards.
6. An employee testing “positive” shall have the right to have the second portion of his/her urine sample independently retested by an HHS-certified laboratory of his/her choice and at his/her

expense. If the independent retest is “negative,” the employee shall be allowed to resume work and be reimbursed for the cost of such independent test.

7. Substance to be tested, (confirmatory test levels which are recognized as positive by current federal standards):

| SUBSTANCE | THRESHOLD LIMIT |
|---|---|
| Alcohol | 0.02% |
| Amphetamines | 300 ng/ml |
| Cocaine metabolites | 300 ng/ml |
| Marijuana metabolites | 20 ng/ml |
| Opiate metabolites | 300ng/ml |
| Phencyclidine | 25 ng/ml |
| Barbiturates | 300 ng/ml |
| Benzodiazepines | 300 ng/ml |
| Methadone | 300ng/ml |
| Methaqualone | 300ng/ml |
| Propoxyphene | 300 ng/ml |

8. The Employer shall treat employee records including positive test results with the highest degree of confidentiality. Such records shall not be distributed to other parties. If a grievance is brought before the Joint Labor Management Committee as a result of a positive test, the Employer shall have the right to present, as evidence, any and all employee records including positive test results.
9. It is understood, however, that the Employer shall have the right to document negative or “drug free” results for individual employees to customers, government agencies or the Union. In the case of alcohol testing verification, the Employer will document to the customer, government agency or the Union that all employees currently employed on the job site is in compliance with the alcohol section of the policy.

D. Alcohol Statement

1. The parties recognize that Alcohol Abuse differs from abuse of Illegal Drugs in that alcohol may be legally obtained and used, and each employee has the right to decide whether or not to drink on his own time so long as job safety and job performance are not impaired. However, improper use of alcohol affecting job safety or efficiency is unacceptable.
2. Unauthorized consumption of alcohol or alcohol impairment on any given job or project during working hours or in an Employer vehicle at any time, will be cause for termination.

E. Marijuana/Drug Statement

1. Marijuana usage for any purpose remains illegal under federal law and is a serious risk to health and safety on a work site. The company intends to follow all state and federal laws, but where they conflict, the company will follow the stricter federal law.
2. No employee shall use/consume medical or recreational marijuana or be under the influence of marijuana while on a company jobsite or project during working hours or in a company-owned vehicle at any time. Doing so shall be considered cause for termination.
3. Possession, use or being under the influence of any Synthetic Drugs and/or synthetic Cannabinoid products is prohibited.

F. Reassignment Upon Positive Substance Abuse Test

1. Employees who have tested “positive” for substance abuse may be eligible for reassignment under the following conditions:
    a. In the case of a first violation of this substance abuse policy, the employee may be reassigned to the project or other projects at the Employer’s option. First-time violators shall be subject to Random Testing for use at any time without prior notice up to six months following the violation.
    b. The employee shall be immediately placed in an approved rehabilitation program directed by the Medical Review Officer.
    c. Employees who test “positive” for substance abuse for the second time shall be subject to disciplinary action up to and including immediate termination.
    d. Upon successful completion of an approved rehabilitation program, any employee who is certified as fit for duty shall have the right to return to the same Employer provided that the Employer has not made a layoff that would have included said employee.
2. The Employer shall have the right to verify that the employee has completed an approved rehabilitation program and is fit for duty.

G. Substance Abuse Procedures

1. FIRST OFFENSE failure of a substance abuse test.

    The employee must wait a minimum of 30 days before taking a second test, at his or her expense and from the same testing office and then be considered for re-employment. The re-employment is a discretionary decision on the part of management.

2. SECOND OFFENSE

    Second offense for failure of a substance abuse test is grounds for automatic termination without recourse.

H. Substance-Abuse Policy Acknowledgement Forms

All IMPACT Strategies employees are required to sign a Substance-Abuse Policy Acknowledgement Form acknowledging that they have received and read the Substance-Abuse Policy as outlined in this section.

***Acknowledgement Form can be found in the Forms section of this manual.***

# Chapter 4 EMERGENCY & INCIDENT MANAGEMENT

A. Incident/Injury Procedures

If there is an incident or a near-miss while working, it is mandatory to notify the Superintendent immediately but especially prior to the end of the shift. The situation will be investigated and corrective action implemented to prevent future injury. Employees and witnesses must fully cooperate in the investigation.

1. In case of an emergency, the employee nearest the stricken person shall call 911 (or the emergency phone number posted in your area)
2. Care for the injured worker immediately, if possible.
3. Contact the designated employee who is trained in first-aid and/or CPR to assist in the situation.
4. Contact and report to the Superintendent and IMPACT Safety Director.
5. If needed, the Superintendent or other designee shall transport the injured worker to the company's designated medical facility to receive appropriate medical attention. A post-incident drug and/or alcohol test will be conducted in accordance with the General Contractor's Drug-Free Workplace Policy.
6. If rescue personnel are summoned via a 9-1-1 call, the Superintendent shall delegate an individual to wait for the rescue team and escort them to the injured employee.
7. All witnesses to the incident shall be available to speak with the Safety Coordinator or the Superintendent and cooperate in all incident investigations.
8. The Superintendent shall immediately notify the Safety Coordinator of the incident so a workers' compensation claim or a report only claim can be filed.
9. Injured employees must comply with the medical treatment provided by the treating physician, cooperate with the insurance company and its designees, and abide by the company's return-to-work policy.

B. Evacuation Procedures

When alerted by alarm or by the Superintendent to evacuate, employees shall:

1. Properly secure all materials/tools/equipment in their possession and assure all hazardous containers and areas are properly locked.
2. Proceed to the nearest exit and wait in a safe location at the designated meeting location away from the danger.
3. Remain in the designated meeting location until role call is complete and instructions are provided.

C. Reporting an incident/injury

All workers have the right to raise a safety or health concern with their employer or OSHA, and/or to report a work-related injury or illness, without being retaliated against.

1. Contact and report to the Superintendent.
2. The Superintendent shall immediately notify the Safety Coordinator of the incident so that a workers' compensation claim or a report only claim can be filed.
3. The employer shall record all work-related injuries per the guidelines in the OSHA Recordkeeping chapter of this manual.

D. Incident Investigation / Root Cause Analysis

When an incident occurs, it is an indication that something has gone wrong. Incidents don't just happen, they are caused. The basic cause(s) of incidents are unsafe acts and/or conditions. Every incident must be investigated to determine the root cause and to initiate corrective action to prevent recurrence from the same causes.

Once completed, the incident investigation form shall be submitted to Management for review. The Management and Safety Coordinator shall evaluate the corrective action taken or suggested and instruct if additional changes shall be made.

1. All witnesses to the incident shall be available to speak with the Safety Coordinator and/or the Superintendent and cooperate in all incident investigations.
2. The Safety Coordinator or Superintendent shall complete an Incident Investigation Form which shall be submitted to Management for review.
3. Management and the Safety Coordinator shall evaluate the corrective action(s) taken or suggested and shall approve of any additional corrective actions, as appropriate.

E. Near Miss Report

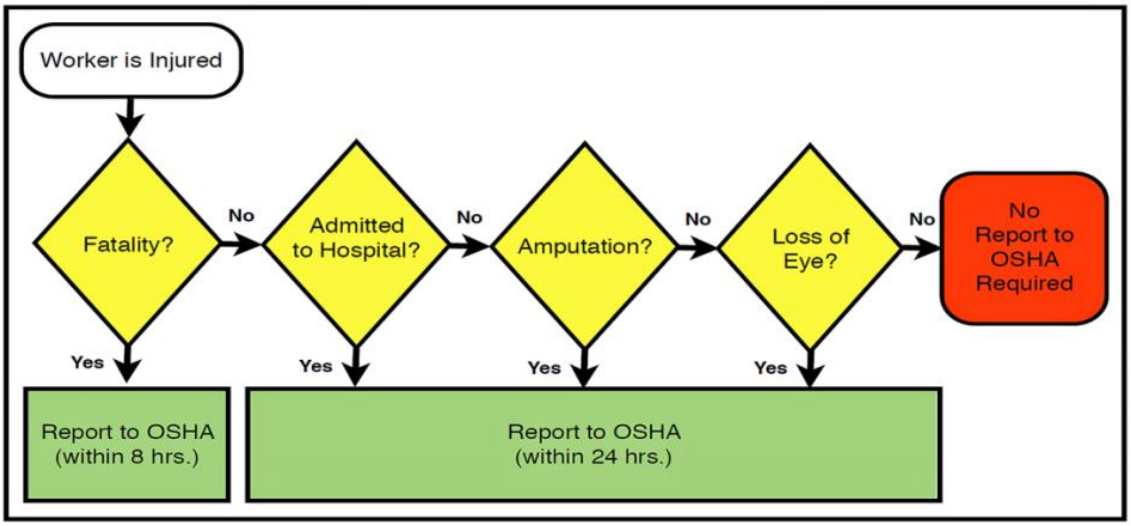
1. If there is a Near Miss while working, it will be investigated and a Near Miss Report will be filled out, including witness statements as well as a Task Safety Observation (TSO) card being filled out.
2. This report is NOT intended to be used for retaliatory purposes; rather, it is intended to be a teaching tool designed to improve employee safety awareness, and to identify and prevent potential life-threatening situations before they happen.

F. Training

1. Employees shall be trained on company policies and procedures with regard to Emergency and Incident Management.
2. The emergency action plan shall be reviewed with each employee covered by the plan when:
    a. The plan is developed or the employee is assigned initially to a job
    b. The employee's responsibilities under the plan change
    c. The plan is changed
3. Training shall include:
    a. Procedures to follow in the event of an injury or incident at the worksite
    b. Evacuation routes, meeting location(s), and roll call procedures
    c. Company procedure for reporting work related incidents, injuries or illnesses
        (A.) Employees have the right to report work-related injuries and illnesses
        (B.) Company is prohibited from and shall not discharge or in any manner discriminate against employees for reporting work-related injuries or illnesses
    d. Expectations of the employees during an incident, injury, or ear Miss investigation.

***All referenced forms can all be found in the Forms section of this manual***

# Chapter 5 OSHA REPORTING & RECORDKEEPING (29 CFR 1904)




A. Reporting Criteria

1. Report to OSHA within eight (8) hours, if a result of a work-related incident:
    a. The death of any employee

        If the fatality does not occur during or right after the work-related incident, you still report to OSHA if the fatality occurs within thirty (30) days of the work-related incident
2. Report to OSHA within twenty-four (24) hours, if a result of a work-related incident:
    a. The in-patient hospitalization of one or more employees

        OSHA defines inpatient hospitalization as a formal admission to the in-patient service of a hospital or clinic for care or treatment (not for observation or diagnostic testing)
    b. An employee's amputation
        (A.) Amputations include a part, such as a limb or appendage that has been severed, cut off, amputated (either completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; amputations of body parts that have since been reattached.
        (B.) Amputations do not include avulsions, enucleations, de-gloving, scalping, severed ears, or broken/chipped teeth
    c. An employee's loss of an eye
3. Reporting Methods
    a. By telephone or in person to the local OSHA Area Office that is nearest to the site of the incident – **Leaving a message is not considered reporting**
    b. By telephone to the OSHA toll-free central telephone number, 1-800-321-OSHA (1-800-321-6742) – **Leaving a message is not considered reporting**
    c. By electronic submission using the reporting application located on OSHA's public Web site at www.osha.gov.
4. Information needed to report
    a. The establishment name
    b. The location of the work-related incident
    c. The time of the work-related incident

d. The type of reportable event (i.e., fatality, in-patient hospitalization, amputation, or loss of an eye)

e. The number of employees affected by the reportable event

f. The names of the employees affected by the reportable event

g. Your contact person and his or her phone number

h. A brief description of the work related incident

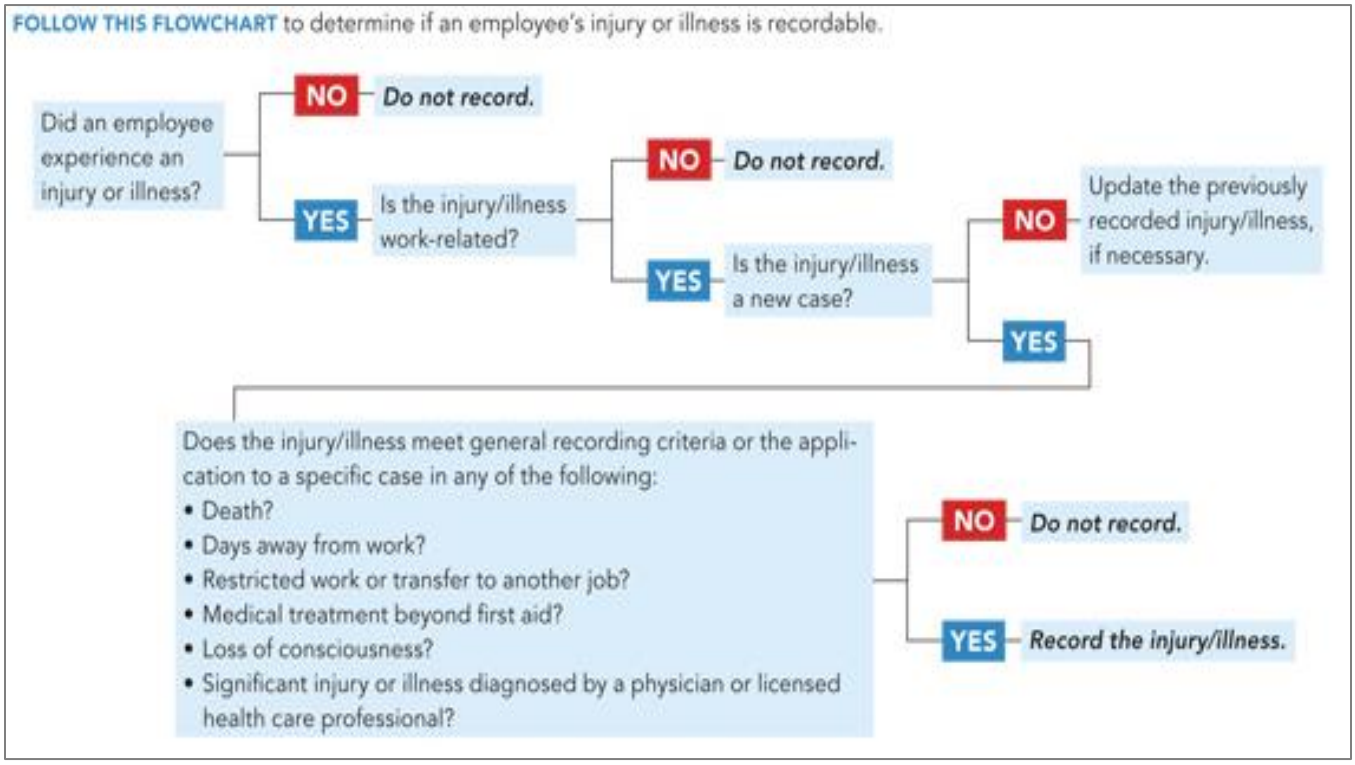
B. Recording Criteria

1. Each employer required by this part to keep records of fatalities, injuries, and illnesses must, in accordance with the requirements of this part, make and maintain an accurate record of each and every fatality, injury, and illness that:

a. Is work-related; and

b. Is a new case; and

c. Meets one or more of the general recording criteria




2. Determination of work-relatedness

a. An injury or illness must be considered to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness

b. Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment, unless an exception specifically applies

c. Exceptions

(A.) At the time of the injury or illness, the employee was present in the work environment as a member of the general public rather than as an employee

(B.) The injury or illness involves signs or symptoms that surface at work but result solely from a non-work-related event or exposure that occurs outside the work environment

(C.) The injury or illness results solely from voluntary participation in a wellness program or in a medical, fitness, or recreational activity such as blood donation, physical examination, flu shot, exercise class, racquetball, or baseball

(D.) The injury or illness is solely the result of an employee eating, drinking, or preparing food or drink for personal consumption (whether bought on the employer's premises or brought in). For example, if the employee is injured by choking on a sandwich while in the employer's establishment, the case would not be considered work-related

***Note:*** *If the employee is made ill by ingesting food contaminated by workplace contaminants (such as lead), or gets food poisoning from food supplied by the employer, the case would be considered work-related.*

(E.) The injury or illness is solely the result of an employee doing personal tasks (unrelated to their employment) at the establishment outside of the employee's assigned working hours

(F.) The injury or illness is solely the result of personal grooming, self-medication for a non-work-related condition, or is intentionally self-inflicted

(G.) The injury or illness is caused by a motor vehicle accident and occurs on a company parking lot or company access road while the employee is commuting to or from work

(H.) The illness is the common cold or flu

***Note:*** *contagious diseases such as tuberculosis, brucellosis, hepatitis A, or plague are considered work-related if the employee is infected at work*

(I.) The illness is a mental illness. Mental illness will not be considered work-related unless the employee voluntarily provides the employer with an opinion from a physician or other licensed health care professional with appropriate training and experience stating that the employee has a mental illness that is work-related

3. Determination of new cases
   a. An injury or illness must be considered to be a "new case" if:
   b. The employee has not previously experienced a recorded injury or illness of the same type that affects the same part of the body, or
   c. The employee previously experienced a recorded injury or illness of the same type that affected the same part of the body but had recovered completely (all signs and symptoms had disappeared) from the previous injury or illness and an event or exposure in the work environment caused the signs or symptoms to reappear
4. General Recording criteria

   An injury or illness must be considered to meet the general recording criteria, and therefore to be recordable, if it results in any of the following:

   a. Death
   b. Days away from work
   c. Restricted work or transfer to another job
   d. Medical treatment beyond first aid

      "Medical treatment" means the management and care of a patient to combat disease or disorder. Medical treatment does not include:

(A.) Visits to a physician or other licensed health care professional solely for observation or counseling

(B.) The conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes (e.g., eye drops to dilate pupils)

(C.) "First aid" as defined in 29 CFR 1904

e. Loss of consciousness

f. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness

Cancer, chronic irreversible diseases, fractured or cracked bones, and punctured eardrums are generally considered significant injuries and illnesses, and must be recorded at the initial diagnosis even if medical treatment or work restrictions are not recommended, or are postponed

C. OSHA Forms

1. All record keeping documents, are maintained at the company office
2. When an authorized government representative asks for the records you keep under part 1904, you must provide copies of the records within four (4) business hours
3. Every recordable occupational injury or illness shall be logged on the appropriate OSHA forms within seven (7) working days from the time the employer learns of the injury
   a. OSHA 300 form - Log of Work-Related Injuries and Illnesses
   b. OSHA300-A form - Summary of Work-Related Injuries and Illnesses
   c. OSHA 301 form - Injury and Illness Incident Report
4. Additional log forms are available at www.osha.gov

D. Recordkeeping Requirements

1. Covered Employees
   a. Company must record on the OSHA 300 Log the recordable injuries and illnesses of all employees on your payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers
   b. Company also must record the recordable injuries and illnesses that occur to employees who are not on your payroll if you supervise these employees on a day-to-day basis
   c. If the business is organized as a sole proprietorship or partnership, the owner or partners are not considered employees for recordkeeping purposes
2. Annual Summary
   a. At the end of each calendar year, company must:
   b. Review that year's OSHA 300 Log to verify that it contains accurate entries for all recordable injuries and illnesses that occurred during the year, and make any additions or corrections necessary to ensure its accuracy
   c. Verify that each injury and illness recorded on the 300 Log, including any injuries and illnesses added to the Log following your year-end review is accurately recorded on a corresponding 301 Incident Report form

d. After verifying the accuracy of the Log

(A.) Complete the OSHA 300A form, with the summary of injuries and illnesses recorded on the Log

(B.) Certify the summary

(1.) A company executive must certify that he or she has examined the OSHA 300 Log and that he or she reasonably believes that the annual summary is correct and complete.

(C.) Post the summary

(1.) Must be posted from February 1 to April 30 of the year following the year covered on the form

(2.) Must be posted in each establishment in a conspicuous place or places where notices to employees are customarily posted

(3.) Must not be altered, defaced or covered by other material

3. Form Retention & Updating

a. Company must save the OSHA 300 Log, the privacy case list (if one exists), the annual summary, and the OSHA 301 Incident Report forms for five (5) years following the end of the calendar year that these records cover.

b. Company must make the following additions and corrections to the OSHA Log and Incident Reports (OSHA 300) during the five-year retention period:

(A.) The OSHA Logs must contain entries for all recordable injuries and illnesses that occurred during the calendar year to which each Log relates

This means that if a recordable case occurred and you failed to record it on the Log for the year in which the injury or illness occurred, you are under a continuing obligation to record the case during the five-year retention period for that Log

(B.) You must make any additions and corrections to the OSHA Log that are necessary to accurately reflect any changes that have occurred with respect to previously recorded injuries and illnesses

If the classification, description, or outcome of a previously recorded case changes, you must remove or line out the original entry and enter the new information

c. Company is not required to make additions or corrections to OSHA 301 Incident Reports or the OSHA 300A Annual Summaries during the five-year retention period, but may do so if you wish

E. Annual Electronic Submission

1. OSHA has launched, the Injury Tracking Application (ITA). This Web-based form allows required injury and illness data to be electronically submitted to OSHA, based on the guidelines of this section.

2. Injury Tracking Application (ITA) website - https://www.osha.gov/injuryreporting/ita/

a. The data submission process involves four steps:

(A.) Creating an establishment

(B.) Adding 300A summary data

(C.) Submitting data to OSHA

(D.) Reviewing the confirmation email.

b. The secure website offers three options for data submission:

(A.) One option will enable users to manually enter data into a web form

(B.) Another option will give users the ability to upload a CSV file to process single or multiple establishments at the same time

(C.) A third option will allow users of automated recordkeeping systems to transmit data electronically via an application programming interface

c. The ITA webpage also includes information on reporting requirements, a list of frequently asked questions and a link to request assistance with completing the form.

3. Who is required to submit

a. Establishments that had 250 or more employees at any time during the previous calendar year, and are not exempt from maintaining OSHA records.

b. Establishments that had 20 or more employees but fewer than 250 employees at any time during the previous calendar year, and are classified in a designated industry.

***See Appendix A of this section for designated industries***

c. Any other establishment that is notified to submit for individual data collection

(A.) OSHA will notify you by mail if you will have to submit information as part of an individual data collection

(B.) OSHA will also announce individual data collections through publication in the Federal Register and the OSHA newsletter, and announcements on the OSHA Web site

4. What information is submitted

a. Companies with 250 or more employees submit information found on all 3 forms, except the following:

(A.) Log of Work-Related Injuries and Illnesses (OSHA Form 300):

(1.) Employee name

(B.) Injury and Illness Incident Report (OSHA Form 301):

(1.) Employee name

(2.) Employee address

(3.) Name of physician or other health care professional

(4.) Facility name and address if treatment was given away from the worksite

b. Designated industry companies with 20 or more, but fewer than 250 employees submit requested information from the OSHA 300A form

5. Reporting Dates

a. Required information must be submitted by **March 2** of the year after the calendar year covered by the form or forms (ie: March 2, 2019 for 2018 information)

b. If you are an employer who must routinely submit the information, then OSHA will **not** notify you about your routine submittal.

c. If you are submitting information because OSHA notified you to submit information as part of an individual data collection, then you must submit the information as often as specified in the notification.

# Appendix A

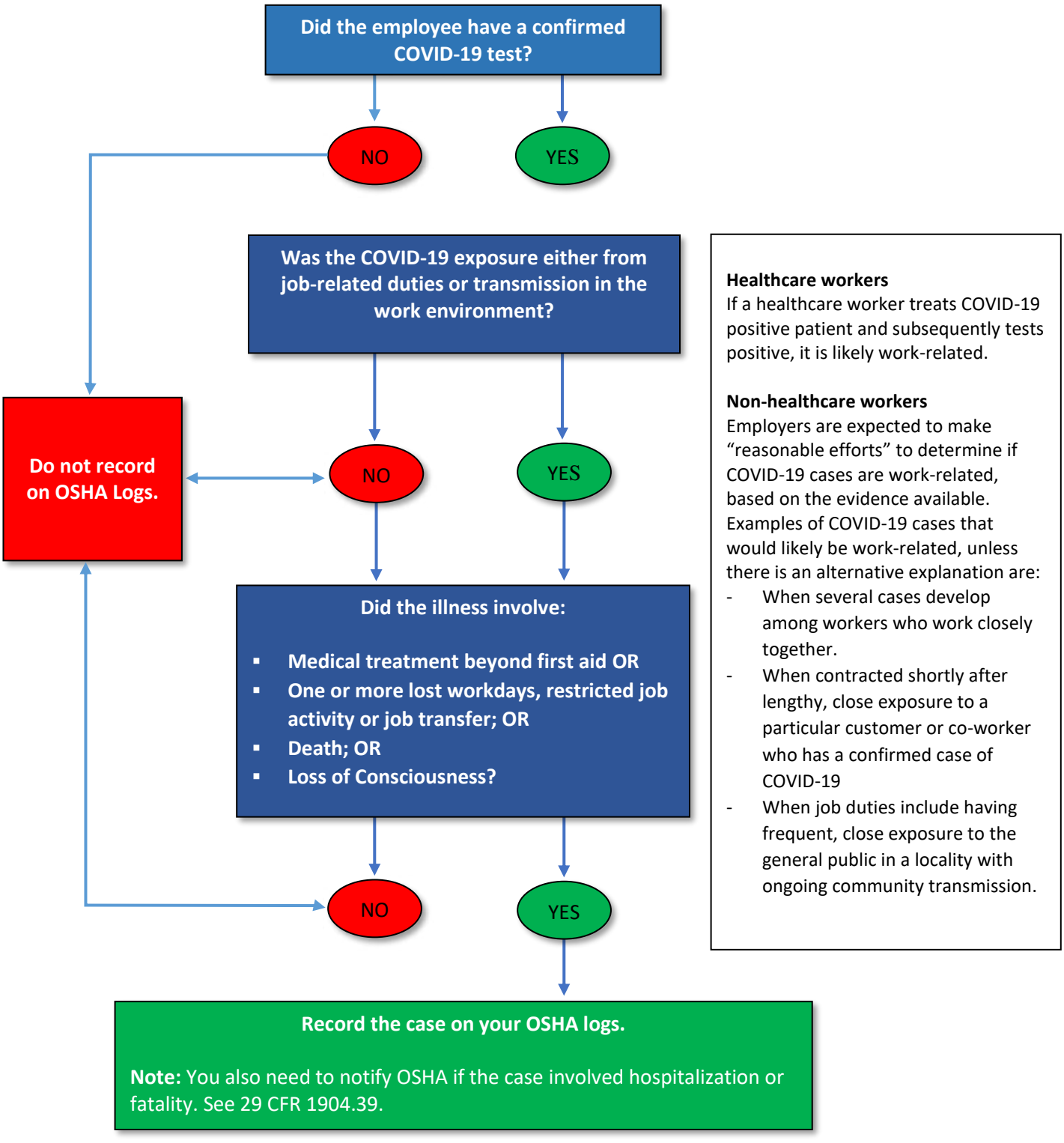
## Establishments in the following industries with 20 to 249 employees must submit injury and illness summary (Form 300A) data to OSHA electronically

*Start with the first 2 digits of your NAIC - that is the prefix per census.gov. If that prefix is on the chart, and no other 3 or 4+ digits are on the chart, then ALL NAICs beginning with that prefix are required to report.*

| NAIC | Industry | NAIC | Industry |
|---|---|---|---|
| 11 | Agriculture, forestry, fishing and hunting | 4921 | Couriers and express delivery services |
| 22 | Utilities | 4922 | Local messengers and local delivery |
| 23 | Construction | 4931 | Warehousing and storage |
| 31-33 | Manufacturing | 5152 | Cable and other subscription programming |
| 42 | Wholesale trade | 5311 | Lessors of real estate |
| 4413 | Automotive parts, accessories, and tire stores | 5321 | Automotive equipment rental and leasing |
| 4421 | Furniture stores | 5322 | Consumer goods rental |
| 4422 | Home furnishings stores | 5323 | General rental centers |
| 4441 | Building material and supplies dealers | 5617 | Services to buildings and dwellings |
| 4442 | Lawn and garden equipment and supplies stores | 5621 | Waste collection |
| 4451 | Grocery stores | 5622 | Waste treatment and disposal |
| 4452 | Specialty food stores | 5629 | Remediation and other waste management services |
| 4521 | Department stores | 6219 | Other ambulatory health care services |
| 4529 | Other general merchandise stores | 6221 | General medical and surgical hospitals |
| 4533 | Used merchandise stores | 6222 | Psychiatric and substance abuse hospitals |
| 4542 | Vending machine operators | 6223 | Specialty (except psychiatric and substance abuse) hospitals |
| 4543 | Direct selling establishments | 6231 | Nursing care facilities |
| 4811 | Scheduled air transportation | 6232 | Residential mental retardation, mental health and substance abuse facilities |
| 4841 | General freight trucking | 6233 | Community care facilities for the elderly |
| 4842 | Specialized freight trucking | 6239 | Other residential care facilities |
| 4851 | Urban transit systems | 6242 | Community food and housing, and emergency and other relief services |
| 4852 | Interurban and rural bus transportation | 6243 | Vocational rehabilitation services |
| 4853 | Taxi and limousine service | 7111 | Performing arts companies |
| 4854 | School and employee bus transportation | 7112 | Spectator sports |
| 4855 | Charter bus industry | 7121 | Museums, historical sites, and similar institutions |
| 4859 | Other transit and ground passenger transportation | 7131 | Amusement parks and arcades |
| 4871 | Scenic and sightseeing transportation, land | 7132 | Gambling industries |
| 4881 | Support activities for air transportation | 7211 | Traveler accommodation |
| 4882 | Support activities for rail transportation | 7212 | RV (recreational vehicle) parks and recreational camps |
| 4883 | Support activities for water transportation | 7213 | Rooming and boarding houses |
| 4884 | Support activities for road transportation | 7223 | Special food services |
| 4889 | Other support activities for transportation | 8113 | Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance |
| 4911 | Postal service | 8123 | Dry-cleaning and laundry services |

# Appendix B

## COVID-19 Recordability Decision Tree




**Healthcare workers**
If a healthcare worker treats COVID-19 positive patient and subsequently tests positive, it is likely work-related.

**Non-healthcare workers**
Employers are expected to make "reasonable efforts" to determine if COVID-19 cases are work-related, based on the evidence available. Examples of COVID-19 cases that would likely be work-related, unless there is an alternative explanation are:

- When several cases develop among workers who work closely together.
- When contracted shortly after lengthy, close exposure to a particular customer or co-worker who has a confirmed case of COVID-19
- When job duties include having frequent, close exposure to the general public in a locality with ongoing community transmission.

# Chapter 6 PROTECTING THE PUBLIC (ANSI/ASSE A10.34-2001 (R2012)

A. Responsibility

1. The project manager shall implement this standard as appropriate to the specific size and location of the project and degree of potential hazards to the public. If the enforcing authority, project manager or other responsible party (agent) determines that portions are not applicable and the intent of the standard is still met, then those specific sections should be deleted (or disregarded) where they do not apply.
2. Whenever the project manager or other responsible party (agent) delegates their responsibility, they are not relieved of accountability for oversight (of the activities that were delegated). If the project manager or its agent becomes aware of a situation where an entity that has been delegated responsibility fails to or cannot perform the delegated responsibility adequately, then the project manager or its agent shall be responsible for correction of the deficiency.

B. Exceptions

In cases of practical difficulty or undue hardship, the responsible authority may grant exceptions to the literal requirements of this standard or permit the use of other devices or methods, but only when it is clearly evident that personnel and equipment protection is assured.

C. Pedestrian Hazards

1. Areas for public pedestrian traffic should be clearly marked at the construction site at all times.
2. Public pedestrian traffic areas should be maintained so that slipping, tripping and falling hazards are reduced.
3. Non-level surfaces should be delineated with high visibility markings, signs or notices.
4. Stairs or ramps should have handrails on both sides.
5. Elevated areas should have standard guardrails.
6. The public should be notified of closed pedestrian areas and they should be provided access to safe alternative areas. The expected path to the alternative area(s) should be clearly marked.
7. The contractor should monitor public ingress and egress routes to make sure that construction operations do not block stairways, doors, entrances, exits, paths or hallways.
8. Special attention should be given to the emergency evacuation of buildings, structures and jobsites and how the construction project may affect this evacuation.

D. Lighting

1. Lighting and welding flash on the jobsite that may project to or illuminate areas offsite should be directed or shielded so that they do not create a public hazard.
2. Walking surfaces and other public areas affected by the construction project should be adequately illuminated.

E. Radiation

1. Operations that may produce public radiation exposure hazards should be controlled and shielded.
2. The area must be barricaded to prohibit public access.

3. Signage that designates what type of radiation exposure may cause public harm or injury should be clearly displayed.
4. Ionizing and nonionizing radiation hazards, including nuclear, x-ray, laser, microwaves, ultraviolet and infrared radiation, welding rays or high-radiant heat sources and exposure, should be considered.

F. Machinery and Vehicles

1. Contractors who use cranes, vehicles, machinery, ships, vessels, barges, boats, aircraft or other mobile equipment or devices should conduct an initial and periodic inspection of the equipment.
2. Sufficient barricades, shields, guards, alarms, signs, markings and safety systems should be provided or installed on all equipment.
3. If any machinery, ships, vessels, barges, boats, aircraft or vehicles require special licenses, permits or operator training before they are used, the contractor should secure or provide these before working with that equipment.
4. Areas with mobile equipment that is accessible to the public should be barricaded or guarded before and during the operation of the equipment.
5. Warning signs, fencing, barricading or personnel should be placed at a sufficient distance from the areas to prevent the public from entering the areas by mistake.
6. If loads are hoisted or if other overhead hazards exist, a clear area below, which is sufficient to prevent public hazards, should be barricaded to prevent inadvertent public access.
    a. The area should be monitored during overhead work to ensure that it remains clear.
7. If noise makes it difficult to hear warnings or signals from mobile equipment, ships, vessels, boats or aircraft, the decibels should be increased so that the warnings or signals can be heard.
    a. If this cannot be done, visual signals should be established to protect the public.
    b. Visual or radio contact should be maintained between the operators and those who will provide the signals.

G. Falling and Windborne Objects

1. To prevent construction objects or debris from creating a public hazard, barriers, catch platforms, enclosures, perimeter or vertical debris netting or other administrative or engineering controls must be employed.
2. Public areas adjacent to the jobsite should be protected by sheds, overhangs, perimeter netting systems, platforms, scaffolding or similar structures to protect pedestrians from falling objects or debris.
3. Construction material, tools, debris, waste, equipment or other items should be contained, secured, tied off, removed, braced, enclosed or restrained so that they do not fall, blow away or enter public areas.

H. Security

1. Measures should be established to restrict public access to the jobsite. If access control is not possible, items that may create a hazard should be locked, barricaded or removed.
2. Security systems or personnel may be employed during or after work hours to ensure that the public cannot gain access to the jobsite.

3. Authorities and security personnel should receive a list of those individuals who are authorized to access the jobsite during non-work hours.
4. Local enforcement authorities should be made aware of all security plans and they should receive a list of personnel who will assist them.

I. Pollution

1. Construction operations that generate waste, debris, byproducts or other contaminants that may result in pollution, degradation or contamination should be evaluated and controlled to reduce or eliminate the problem.
2. Project waste should be moved only to facilities that are licensed, certified or qualified to accept and process that kind of waste.
3. Water-borne runoff or contaminants that can be carried to a municipal storm or sanitary sewer system should be evaluated. If the run-off creates a pollution hazard, then steps should be taken to control the contaminants.
4. Onsite sanitation facilities that are not linked to a sanitary sewer system must be provided in accordance with Table I of ANSI Z4.3-1987.

J. Utilities

1. The location of all utilities must be established before the construction starts.
    a. The utilities should be located and marked as a visual warning to those who may come into contact with them.
    b. All affected contractors should receive this information in the project documents.
2. Markings, warnings or drawings that show the location of the utilities should be updated as conditions change or as utilities are added or deactivated.
3. The installation of temporary utilities and public exposures must conform to applicable standards.
4. In all cases, the public must be protected from any hazards that the utilities may pose.

K. Hazardous Materials and Substances

1. Hazardous materials should be stored away from the public in approved containers that are properly labeled.
2. Hazardous material storage facilities should be built and located away from the public and separated from each other as required by the presiding authority.
3. Warning signs should be posted at storage areas.
4. Emergency response personnel should receive SDS on the hazardous materials as required by the presiding authority.

L. Injuries and Damage

1. Any public injury or damage should be immediately assessed and action should be taken to secure medical help and to minimize further injury or damage.
2. The site supervisor should be notified immediately of any public injury or damage.
3. The area in which the injury or damage has occurred should be secured until proper investigation and documentation have taken place.

M. Vibrations and Subsidence

1. Construction operations that produce ground or air vibration should be analyzed to prevent damage or subsidence of adjacent land or structures.
2. A pre-operations survey of the surrounding area, structures and accessories should be conducted before any construction activity begins. Any weaknesses or deterioration found during the survey should be reported to the presiding authority before construction.
3. The contractor should provide data that show the maximum limits of expected vibrations or subsidence.
    a. These limits must not exceed those specified by the presiding authority.
    b. Seismographic recordings should be made if required.
4. If warranted during the pre-operations survey, structural and geological investigation may be conducted.
5. If there will be blasting at the jobsite, an audible blasting warning signal should be established, published and posted and signage should be posted to warn the public. Blasting mats or administrative controls should be used to reduce any public fly-rock hazards.
6. Adjacent roadways, waterways, airways, sidewalks, buildings and utilities should be monitored periodically during construction operations.
7. All excavations, cuts and trenches in public areas should be backfilled with approved material and then tamped and compacted as soon as possible.
8. Any public areas or structures that are disturbed, cracked or broken during construction operations should be inspected, repaired or replaced.

N. Emergency Action Plan

1. An emergency action plan that outlines the actions and responsibilities to be taken in the event of an emergency should be incorporated in the Site Specific Safety Plan.
2. Jobsite personnel should be instructed in the emergency procedures to be followed in the event of an emergency that involves or affects the public.

O. Public Contempt or Protest

1. A plan should be established for dealing with members of the public who purposely place themselves or others at risk by failing to observe or heed warnings, directives or safety precautions.
2. Agencies with authority to control public activity may be notified and work may be ceased until the public is controlled.

P. Threats

1. A plan should be established for handling bomb threats or any other violence communicated to the job site.
2. The plan should include directions for interacting with the authorities.

# Chapter 7 SAFETY SPECIFICS

**These OSHA standards have been identified as specifically relevant to your organization and beneficial to your organization's safety program.**

**They are NOT the only OSHA standards with which you are expected to be compliant – they are simply indicated as specifically pertinent.**

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Safety Specifics – **Bloodborne Pathogens (29 CFR 1910.1030)**

A. Exposure Determination

1. We have determined that all employees may incur occupational exposure to blood or Other Potentially Infectious Materials (OPIM).
2. The exposure determination is made without regard to the use of personal protective equipment (i.e., employees are considered exposed even if they wear personal protective equipment).
3. Shall any body fluids be encountered, our employees are directed to use “Universal Precautions”, and assume all bodily fluids are potentially infectious.

B. Compliance Strategies

Universal precautions techniques developed by the Centers for Disease Control and Prevention (CDC) will be observed by this company to prevent contact with blood or OPIM. All blood or OPIM will be considered infectious regardless of the perceived status of the source individual.

C. Engineering and Work Practice Controls

Engineering and work practice controls will be used to eliminate or minimize exposure to employees by this company and will be examined and maintained on a regular schedule for effectiveness. Where occupational exposure remains after institution of these controls, employees are required to wear personal protective equipment. At this company the following engineering controls are used:

1. Placing sharp items (e.g., needles, scalpels, etc.) in puncture-resistant, leak proof, labeled containers.
2. Performing procedures so that splashing, spraying, splattering, and producing drops of blood or OPIM is minimized.
3. Removing soiled PPE as soon as possible.
4. Cleaning and disinfecting all equipment and work surfaces potentially contaminated with blood or OPIM. Note: We use a solution of 1/4 cup chlorine bleach per gallon of water.
5. Thorough hand washing with soap and water immediately after providing care or provision of antiseptic towelettes or hand cleanser where hand-washing facilities are not available.
6. Prohibition of eating, drinking, smoking, applying cosmetics, handling contact lenses, and so on in work areas where exposure to infectious materials may occur.
7. Use of leak-proof, labeled containers for contaminated disposable waste or laundry.

D. Hand-washing Facilities

1. Hand washing facilities are available to employees who have exposure to blood or OPIM. Sinks for washing hands after occupational exposure are near locations where exposure to bloodborne pathogens could occur.
2. When circumstances require hand washing and facilities are not available, either an antiseptic cleanser and paper towels or antiseptic towelettes are provided. Employees must then wash their hands with soap and water as soon as possible.
3. Supervisors must ensure that employees wash their hands and any other contaminated skin after immediately removing personal protective gloves, or as soon as feasible with soap and water.

4. Supervisors must also ensure that if employees' skin or mucous membranes become contaminated with blood or OPIM, then those areas are washed or flushed with water as soon as feasible following contact.

E. Work Area Restrictions

1. In work areas where there is a reasonable likelihood of exposure to blood or OPIM, employees are not to eat, drink, apply cosmetics or lip balm, smoke, or handle contact lenses. Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, or on counter tops or bench tops where blood or OPIM are present.
2. Mouth pipetting/suctioning of blood or OPIM is prohibited. All procedures involving blood or other potentially infectious materials will be conducted in a manner which will minimize splashing, spraying, splattering, and generation of droplets of blood or OPIM.

F. Personal Protective Equipment

1. PPE is chosen based on the anticipated exposure to blood or OPIM. The protective equipment is considered appropriate only if it does not permit blood or OPIM to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.
2. The company will sure that appropriate PPE in the appropriate sizes is readily accessible at the work site or is issued without cost to employees.
3. We purchase (when consumable), clean, launder, and dispose of personal protective equipment as needed by:
    a. All garments which are penetrated by blood shall be removed immediately or as soon as feasible. All PPE will be removed prior to leaving the work area. When PPE is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.
    b. All repairs and replacements are made by the company.
    c. Employees must remove all garments which are penetrated by blood immediately or as soon as possible.
    d. They must remove all PPE before leaving the work area. When PPE is removed, employees place it in a designated container for disposal, storage, washing, or decontamination.

G. Gloves

1. Employees must wear gloves when they anticipate hand contact with blood, OPIM, non-intact skin, and mucous membranes, when handling or touching contaminated items or surfaces.
2. Disposable gloves used at this facility are not to be washed or decontaminated for re-use and are to be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.
3. Eye and Face Shields
4. Employees must wear masks in combination with eye protective devices, such as goggles or glasses with solid side shield, or chin length face shields, whenever splashes, splatter, or droplets of blood or OPIM may be generated and reasonably anticipated to contaminate eye, nose, or mouth.

H. Handling Regulated Wastes

When handling regulated wastes, other than contaminated needles and sharps, we make sure it is:

1. Placed in containers which are closeable, constructed to contain all contents, and prevent fluid leaks during handling, storage, transportation, or shipping.
2. Labeled or color coded and closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

***Note**: Disposal of all regulated waste is in accordance with applicable Unites States, state and local regulations.*

I. Information and Training

1. The company ensures that bloodborne pathogens trainers are knowledgeable in the required subject matter. We make sure that employees covered by the bloodborne pathogens standard are trained at the time of initial assignment to tasks where occupational exposure may occur, and every year thereafter through safety briefings, annual training, or staff meetings.
2. Training is tailored to the education and language level of the employee and offered during the normal work shift. The training will be interactive and cover the following:
    a. The standard and its contents.
    b. The epidemiology and symptoms of bloodborne diseases.
    c. The modes of transmission of bloodborne pathogens.
    d. The company's Bloodborne Pathogen ECP, and a method for obtaining a copy.
    e. The recognition of tasks that may involve exposure.
    f. The use and limitations of methods to reduce exposure, for example engineering controls, work practices and personal protective equipment (PPE).
    g. The types, use, location, removal, handling, decontamination, and disposal of PPE's.
    h. The basis of selection of PPE's.
    i. The Hepatitis B vaccination, including efficacy, safety, method of administration, benefits, and that it will be offered free of charge.
    j. The appropriate actions to take and persons to contact in an emergency involving blood or OPIM.
    k. The procedure to follow if an exposure incident occurs, including the method of reporting and medical follow-up.
    l. The evaluation and follow-up required after an employee exposure incident.
    m. The signs, labels, and color-coding systems.
3. Additional training is provided to employees when there are any changes of tasks or procedures affecting the employee's occupational exposure. Employees who have received training on bloodborne pathogens in the 12 months preceding the effective date of this plan will only receive training in provisions of the plan that were not covered. Training shall be conducted annually

J. Recordkeeping

1. Training records shall be maintained for three years from the date of training. The following information shall be documented:
    a. The dates of the training sessions
    b. An outline describing the material presented

c. The names and qualifications of persons conducting the training

d. The names and job titles of all persons attending the training sessions

2. Medical records shall be maintained in accordance with OSHA Standard 29 CFR 1910.20. These records shall be kept confidential and must be maintained for at least the duration of employment plus 30 years. The records shall include the following:

a. The name and social security number of the employee.

b. A copy of the employee's HBV vaccination status, including the dates of vaccination.

c. A copy of all results of examinations, medical testing, and follow-up procedures.

d. A copy of the information provided to the healthcare professional, including a description of the employee's duties as they relate to the exposure incident, and documentation of the routes of exposure and circumstances of the exposure.

3. Availability

a. All employee records shall be made available to the employee in accordance with §1910.20. All employee records shall be made available to the Assistant Secretary of Labor for the Occupational Safety and Health Administration and the Director of the National Institute for Occupational Safety and Health upon request.

b. Transfer of Records

(A.) If this facility is closed or there is no successor employer to receive and retain the records for the prescribed period, the Director of the NIOSH shall be contacted for final disposition.

K. Post-Exposure Evaluation and Follow-Up

1. All exposure incidents are reported, investigated, and documented. When the employee is exposed to blood or OPIM, the incident is reported to the Project Manager. When an employee is exposed, he or she will receive a confidential medical evaluation and follow-up, including at least the following elements:

a. Documentation of the route of exposure, and the circumstances under which the exposure occurred.

b. Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law. State or local laws affecting the investigation or documentation of exposure incidents are: (enter your answer).

c. The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, (enter your answer) establishes that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, will be tested and the results documented.

d. When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

e. Results of the source individual's testing are made available to the exposed employee, and the employee is informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

2. Collection and testing of blood for HBV and HIV serological status will comply with the following:

a. The exposed employee's blood is collected as soon as possible and tested after consent is obtained.

   b. The employee will be offered the option of having their blood collected for testing of the employee's HIV/HBV serological status. The blood sample will be preserved for up to 90 days to allow the employee to decide if the blood shall be tested for HIV serological status.

3. All employees who incur an exposure incident will be offered post-exposure evaluation and follow-up according to the OSHA standard. All post exposure follow-up will be performed by contracted healthcare professionals.
4. The healthcare professional responsible for the employee's Hepatitis B vaccination is provided with the following:
   a. A copy of §1910.1030.
   b. A written description of the exposed employee's duties as they relate to the exposure incident.
   c. Written documentation of the route of exposure and circumstances under which exposure occurred.
   d. Results of the source individuals blood testing, if available.
   e. All medical records relevant to the appropriate treatment of the employee including vaccination status.
5. Company obtains and provides the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.
6. The healthcare professional's written opinion for HBV vaccination must be limited to whether HBV vaccination is indicated for an employee, and if the employee has received such vaccination.
7. The healthcare professional's written opinion for post-exposure follow-up is limited to the following information:
   a. A statement that the employee has been informed of the results of the evaluation.
   b. A statement that the employee has been told about any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment.

      ***Note****: All other findings or diagnosis shall remain confidential and will not be included in the written report.*

L. Labels and Signs

1. Biohazard labels are affixed to containers of regulated waste, refrigerators and freezers containing blood or OPIM, and other containers used to store, transport or ship blood or OPIM. The universal biohazard symbol is used. The label is fluorescent orange or orange red. Red bags, or containers may be substituted for labels.
2. Blood products that have been released for transfusion or other clinical use are exempted from these labeling requirements.

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Safety Specifics – **Confined Spaces (29 CFR 1926)**

A. Scope

This program covers all employees and other workers that may be involved in confined space entry. When work is performed on a non-owned or operated site, the operator's program shall take precedence. This document covers employees and contractors and shall be used on company-owned premises, or when an operator's program doesn't exist or is less stringent

B. Definitions

1. Confined Space

A space that is large enough and so configured that an employee can bodily enter and perform assigned work; AND has limited or restricted means for entry or exit (for example, tanks, vessels, coolers, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); AND is not designed for continuous occupancy.

2. Permit-Required Confined Space

a. A confined space that has one or more of the following characteristics:

b. Contains or has a potential to contain a hazardous atmosphere.

c. Contains a material that has the potential for engulfing an Entrant.

d. 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.

e. Contains any other recognized serious safety or health hazard.

C. Responsibilities

1. Managers/Supervisor

a. Shall ensure that all employees have been trained and fully understand the requirements of this program.

b. Shall provide the necessary equipment to comply with these requirements and ensure that all employees are trained on its use.

c. Shall ensure that all confined space assessments have been conducted and documented.

d. Shall ensure that provisions and procedures are in place for the protection of employees from external hazards including but not limited to pedestrians, vehicles and other barriers and by use of the pre-entry checklist verifying that conditions in the permit space are acceptable for entry during its duration.

e. Shall ensure that all Permit-Required Confined Spaces permits are posted.

f. Shall ensure an annual review of the program including all entry permits issued that during that annual period.

g. Shall ensure that confined spaces are identified properly as either a Non-Permit Confined Space or a Permit-Required Confined Space.

h. Shall ensure that all confined spaces that have been identified as "no entry" have signs that state, "DANGER- DO NOT ENTER".

i. Shall ensure signs have been posted at all Permit-Required Confined Space areas that state, "DANGER – PERMIT ENTRY CONFINED SPACE" along with the proper warning word such as "ASPHYXIATE, FLAMMABILITY or TOXIC HAZARD"

j. Shall file all permits at the area offices for review. Permits shall be kept on file for one year.

2. Affected Employee
   a. Shall attend Confined Space Entry training commensurate with their duties and when duties change as required.
   b. Shall comply with all aspects of this program.
   c. Authorized Entrants, Attendants and Entry Supervisors may be any employee of our company that is authorized by management to work in a confined space setting and that has been trained and is proficient in the understanding of program requirements.
3. Authorized Entry Supervisor
   a. Shall have a tailgate safety meeting, with all workers to be involved in the confined space entry and review the job to be performed and what safety concerns may be present.
   b. Shall confirm that all isolation, Lock/out and Tag/outs have been completed prior to entry into a confined space.
   c. Shall ensure that the requirements of this program are followed and maintained.
   d. Shall test all atmosphere conditions prior to entry and shall complete and maintain the confined space permit form, and have it accessible for review on the jobsite at all times.
   e. Shall notify our supervisor of entry into a confined space, and notify the supervisor of any changes that may occur, during an entry.
   f. If the confined space poses a hazard that cannot be eliminated, the Entry Supervisor must arrange for a rescue services.
   g. If the confined space poses no hazards to the Entrants, the Entry Supervisor can reclassify the confined space to a Non-Permit Confined Space.
   h. A stand-by rescue team is not required to be on site for Non-Permit Confined Space entries.
4. Authorized Attendant
   a. Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
   b. Is aware of possible behavioral effects of hazard exposure in authorized Entrants.
   c. Continuously maintains communication and an accurate count of authorized Entrants in the confined space and ensures that the means used to identify authorized Entrants, and accurately identifies who is in the confined space.
   d. Remains outside the confined space during entry operations until relieved by another Attendant.
   e. Our company has procedures to be used by a single attendant monitoring several confined spaces during an emergency. If more than one confined space is to be monitored by a single attendant, the program must include the means and procedures that will be used in order to enable the attendant to respond to emergencies in one or more permit spaces that he/she is monitoring without distraction from all responsibilities. This will include radio communications with emergency responders or other methods of summoning aid, directing entrants to leave the confined spaces, etc. The procedures shall be on the confined space permit.
   f. Monitors activities inside and outside the confined space to determine if it is safe for Entrants to remain in the space and orders the authorized Entrants to evacuate the confined space immediately under any of the following conditions:

(A.) If the Attendant detects a prohibited condition.

(B.) If the Attendant detects the behavioral effects of hazard exposure in an authorized Entrant.

(C.) If the Attendant detects a situation outside the space that could endanger the authorized Entrants.

(D.) If the Attendant cannot effectively and safely perform all the duties required.

g. Summon rescue and other emergency services as soon as the Attendant determines that authorized Entrants may need assistance to escape from confined space hazards.

h. Takes the following actions when unauthorized persons approach or enter a confined space while entry is underway:

(A.) Warn the unauthorized persons that they must stay away from the confined space.

(B.) Advise the unauthorized persons to exit the confined space immediately, if they have entered the space.

(C.) Inform the authorized Entrants and the Entry Supervisor if unauthorized persons have entered the confined space.

i. Performs no duties that might interfere with the Attendant's primary duty to monitor and protect the authorized Entrants.

j. Authorized Attendants shall not monitor more than one confined space at a time.

5. Authorized Entrant

a. Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

b. Uses appropriate personal protective equipment properly, e.g., face and eye protection, and other forms of barrier protection such as gloves aprons, coveralls, and breathing equipment.

c. Is aware of possible behavioral effects of hazard exposure in authorized Entrants.

d. Shall witness and verify calibrated air monitoring data and if approved, sign off, before entry is made.

e. Is entitled to request additional monitoring at any time.

f. Maintain communication with the Attendants to enable the Attendant to monitor the Entrants status as well as to alert the Entrant to evacuate if needed; and

g. Exit from confined spaces as soon as possible when ordered by an Attendant or Entry Supervisor, when the Entrant recognizes the warning signs or symptoms of an exposure exists, or when a prohibited condition exists, or when an alarm is activated.

D. Procedure

1. Non-Permit Confined Space Entry

a. If testing of the confined space atmosphere is within acceptable limits without the use of forced air ventilation and the space is properly isolated, the space can be entered by following the requirements for Level I confined space entry.

b. Entrants and/or their representative shall be given the opportunity to observe and participate in the air monitoring process.

c. Entrants shall review and sign the confined space permit.

d. Employees may enter and work in the confined space as long as LEL, O2, and toxicity hazards remain at safe levels.

(A.) Complete our company's Confined Space Entry Permit to document that there are no confined space hazards. Make this certification available to all personnel entering the space.

(B.) A trained Attendant must always be outside the confined space. The Attendant must monitor the authorized Entrants for the duration of the entry operation.

e. Exception

(A.) The Attendant requirements for Level I confined space entry may be exempted, if the job assessment is performed and has determined that there are no inherent dangers to allow single person entry.

(B.) This provision is intended to permit field operations to enter crankcases, shallow valve boxes, cellars, excavations, etc. without an Attendant being present and all other aspects of the entry permit complied with.

(C.) When there are changes in the use and configuration of a confined space that might increase the hazards to the Entrants (e.g., using epoxy coating on a tank floor, welding, painting, etc.), re-evaluate the space. If necessary, reclassify the space as a Permit-Required Confined Space.

(D.) Continuously monitor the confined space atmosphere to ensure that it is still safe.

(E.) The space must not contain a hazardous atmosphere while personnel are inside.

(F.) If a hazardous atmosphere is detected during an entry, personnel must immediately evacuate the space.

(G.) Re-evaluate the space to determine how the hazardous atmosphere developed.

(H.) The Entry Supervisor shall cancel the entry permit.

(I.) Take action to protect personnel before any subsequent activity to re-enter the space takes place.

(J.) Reissue our company's Confined Space Entry Permit before allowing Entrants to re-enter the space.

(K.) If necessary, reclassify the space as a Permit-Required Confined Space.

(L.) Ensure that vehicle or other equipment exhaust does not enter the space.

2. Permit-Required Confined Space Entry

a. If the space is properly isolated and results of air monitoring are above acceptable parameters without local exhaust ventilation in operation, classify the entry as a Permit-Required Confined Space.

b. Complete our company's Confined Space Entry Permit before proceeding with work in a Permit-Required Confined Space.

c. Entrants and/or their representative shall be given the opportunity to observe and participate in the air monitoring process.

d. Entrants shall review and sign the confined space permit.

e. At least one trained Attendant must always be outside the Permit-Required Confined Space.

f. The Attendant must monitor the authorized Entrants for the duration of the entry operation.

g. Only authorized Entrants may enter a Permit-Required Confined Space.

h. All Entrants must sign in and out on the entry permit when entering and leaving a Permit-Required Confined Space.

i. The back of the permit or a sign-in sheet must be used for this purpose.

j. Post signs and barricades outside all Permit-Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited.

k. Conditions must be continuously monitored where Entrants are working to determine that acceptable conditions are maintained during entry.

l. If a hazardous atmosphere is detected during an entry, personnel must immediately evacuate the space.

(A.) The Entry Supervisor shall cancel the entry permit.

(B.) Re-evaluate the space to determine how the hazardous atmosphere developed.

(C.) Take action to protect personnel before any subsequent activity to re-enter the space takes place.

(D.) Re-issue our company's Confined Space Entry Permit before allowing Entrants to re-enter the space.

(E.) Employees or their representatives are entitled to request additional monitoring at any time.

m. The permit must be terminated when the entry operations are complete or when permit conditions change (i.e., hazardous air monitoring results are noted, unsafe behaviors are observed, etc.).

n. The minimum rescue equipment required for Permit-Required Confined Space entry is covered in the Rescue & Emergency section of this program.

o. Permit-Required Confined Space entry operations will be reviewed when our company believes that the requirements of this confined space program may not adequately protect personnel.

p. If deficiencies are found in the program, the program will be revised, and personnel will be trained in the new revisions before subsequent entries are authorized.

3. Pre-Job Planning and Space Preparation

a. The Entry Supervisor must determine that the confined space is properly isolated by blinding, disconnecting, and/or by following local Lockout/Tagout procedures.

b. The Entry Supervisor must discuss with all Entrants the hazards of the space, communication methods and emergency procedures during the confined space entry.

c. Eliminate any condition making it unsafe to open the equipment to atmosphere.

d. Promptly guard the opening to prevent an accidental fall through the opening and to protect each employee working in the space from foreign objects entering the space.

e. If applicable, wash, steam, ventilate or degas the confined space to properly free it of possible contaminants. Vent vapors to a safe location.

f. Do not allow unauthorized personnel to enter a confined space. Barricade and/or guard all confined spaces to prevent entry of unauthorized Entrants.

g. If performing hot work in the confined space, precautions must be taken consistent with our company's Hot Work Permit procedure.

h. Ensure that vehicle or other equipment exhaust does not enter the space.

4. Pre-Entry Safety Meeting

a. The Entry Supervisor must declare when the confined space is ready for entry.

b. The Entry Supervisor shall hold a pre-entry safety meeting to discuss all requirements and procedures with all authorized Entrant(s) and Attendant(s) involved with the entry. He/she will discuss other concerns such as previous contents, vessel coating, PPE required etc., during this meeting.

c. The Entry Supervisor must coordinate entry operations when employees of more than one company are working simultaneously in the confined space. This coordination is necessary so that one company's work does not endanger the employees of another company.

5. Equipment

a. Check all work equipment to ensure that it has the proper safety features and is approved for the locations where it will be used. The Entry Supervisor shall ensure that all equipment is properly maintained in a safe condition and that Entrants use the equipment properly.

b. The following equipment must be considered and may be required when entering a confined space:

(A.) Atmospheric Testing and Monitoring Equipment.

(B.) Barriers, Shields, and Signs – Post signs and barricades outside all Permit-Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited. Any signs used must state "Danger – Permit Entry Confined Space" along with the proper warning word such as "Asphyxiant, Flammability or Toxic Hazard". All barricades must be capable of preventing a person from inadvertently walking into or kicking an object into the space.

(C.) Communications Equipment – Only use intrinsically safe equipment in areas where a hazardous atmosphere may exist. Use a communication system that will keep the Attendant in constant, direct communication with the Entrant(s) working in the confined space. Also, use a communication system that allows the Attendant to summon help from rescue or emergency service.

(D.) Entry and Exit Equipment – (For example: ladders may be needed for safe entry and exit).

(E.) Lighting Equipment – Needed for safe entry, work within the space and exit. Lighting equipment used in the confined space must be certified safe for the location.

(F.) Portable electric lighting used in wet and/or other conductive locations (drums, tanks, vessels) must be operated at 12 volts or less. 120-volt lights may be used if protected by a ground-fault circuit interrupter.

(G.) Personal Protective Equipment – Ensure that personnel wear the required personal protective equipment. For respiratory protection requirements, refer to the Respiratory Protection Program.

(H.) Rescue and Emergency Equipment – Except if provided by outside rescue services.

(I.) The Attendants must also have an approved first aid kit.

(J.) Vacuum Trucks – When used, trucks must be properly grounded or bonded to prevent static sparks.

(K.) Ventilating Equipment – Local exhaust air movers used to obtain acceptable atmospheric entry conditions (e.g., Copus air movers).

(L.) Other – Any other equipment necessary for safe entry into and rescue from permit required confined spaces.

6. Air Monitoring
    a. Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Monitoring of the space must inform the entrants of the potential hazards and results and they must participate in the permit review and signing.
    b. Air shall be periodically test while continuous ventilation is applied.
    c. Any employee, who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.
    d. Employees or their representatives are entitled to request additional air monitoring at any time.
7. Ventilation
    a. Continuous forced air ventilation must be used and tested as follows:
    b. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
    c. The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space.
    d. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.
    e. The atmosphere within the space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee, who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing and may request additional monitoring at any time.
    f. If a hazardous atmosphere is detected during entry each employee shall leave the space immediately and the space shall be evaluated to determine how the hazardous atmosphere developed; and measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.
8. Multiple Employer Procedure
    a. In order not to endanger the employees of any other employer, the Entry Supervisor shall:
    b. Verify that all contractor employees have been trained in confined space and that all contractor employees fully understand our company’s procedures pertaining to Confined Space.
    c. Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of this section.
    d. Apprise the contractor of the elements, including the hazards identified and the employees experience with the space, that make the space in question a permit space.
    e. Inform the contractor of any precautions or procedures that our company has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
    f. Coordinate entry operations with the contractor, when both our company’s personnel and contractor personnel will be working in or near confined spaces.

g. Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in confined spaces during entry operations.

h. In addition to complying with the confined space requirements that apply to all employees; each contractor, who is retained to perform permit space entry operations, shall:

i. Obtain any available information regarding confined space hazards and entry operations from our company's Entry Supervisor.

j. Coordinate entry operations with our company's LLC Entry Supervisor, when both our company's personnel and contractor personnel will be working in or near permit spaces.

k. Inform our company of the confined space program that the contractor will follow and of any hazards confronted or created in the confined space, either through a debriefing or during the entry operation.

9. Rescue and Emergency Services

a. General

(A.) Rescue service must be on-site for immediately dangerous to life and health (IDLH) conditions while work is being performed.

(B.) Rescue services must be either:

(C.) Provided by the host facility,

(D.) Provided by an outside service which is given an opportunity to examine the entry site, practice rescue and decline as appropriate, or

(E.) Provided by our company by selecting a rescue team that is equipped and trained to perform the needed rescue services.

(F.) The Attendant shall order the other Entrants not to move the injured nor allow untrained or unauthorized workers into the space that are not trained to handle a confined space rescue.

(G.) Material Safety Data Sheet's for substances that an injured Entrant was exposed to must be provided to the medical facility treating the injured worker.

b. Permit-Required Confined Space Rescue:

(A.) When the Attendant becomes aware of the need for rescue, the Attendant shall immediately summon the onsite rescue team by the agreed upon communication method, verbally, radio or cell phone, without leaving the vicinity of the confined space.

(B.) The Attendant shall prevent unauthorized personnel from attempting a rescue.

(C.) After the rescue team has been notified, the Attendant shall alert the Entry Supervisor of the emergency via the same communication methods.

(D.) The preferred means of providing rescue service is using a qualified outside rescue service vendor. The outside rescue service vendor must be:

(1.) Informed of the hazards that they may confront during a rescue.

(2.) Provided access to the Permit-Required Confined Space to examine the entry site, practice rescue, and decline as appropriate.

(3.) Access to the space allows the rescue service and local supervision to jointly develop appropriate rescue plans.

(4.) If the host operator is designated to provide rescue services for our company, the agreement of services must be included in contract for the job.

(E.) If our company employees are to perform Permit-Required Confined Space rescues, they must be:

(1.) Provided and trained in the use of the proper personal protective equipment necessary to make the rescue.

(2.) Provided PPE at no cost

(3.) Trained to perform the assigned duties.

(4.) Required to practice making rescues at least once every 12 months.

(5.) Trained in basic first aid and CPR.

(6.) A minimum of one member of the rescue team must hold a current certification in first aid and CPR.

c. Non-entry Rescue

(A.) To facilitate non-entry rescue, an Entrant must be attached to a retrieval system whenever he/she enters a Permit-Required Confined Space with a vertical depth of more than 5 feet.

(B.) The retrieval equipment is not required if it will increase the overall risk of the entry, e.g., creating an entanglement hazard, or will not contribute to the rescue of the Entrant.

(C.) Each Entrant shall use a full body harness with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which the employer can establish presents a profile small enough for the successful removal of the entrant.

(D.) Wristlets may be used instead of the full body harness, if the use of the full body harness is not feasible or creates a greater hazard and that using wristlets is the safest and most effective alternative.

(E.) The retrieval line must be attached to the “D” ring and the other end of the retrieval line attached to a retrieval device or fixed point located outside the space so that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.

10. Issuance/Reviewing of Permit

a. Only when all pre-entry requirements are satisfied, the Entry Supervisor shall issue a completed and signed confined space permit. The confined space permit is valid for one shift.

b. In the event of any unauthorized entry, employee complaints, a hazard not covered by the permit, the occurrence of an injury or near miss the entry permit shall be cancelled and a review shall be conducted to provide employee protection and for revising the program prior to authorizing subsequent entries.

c. An annual review of this program, using the cancelled permits retained within 1 year after each entry shall be conducted by the HSE Manager to revise the program as necessary, to ensure that employees are protected. If no confined space entries were performed during a 12-month period, no review is necessary.

11. Termination and Closing or Cancelling of Permits

a. The Entry Supervisor shall terminate the confined space permit, at the end of the job operation, at the end of the shift or when the Entry Supervisor or Attendant determine that conditions in or near the confined space have changed and is hazardous to the Entrants.

b. The Entry Supervisor shall, at the conclusion of entry operation, close out the permit and provide the safety department the original copy of the Confined Space Permit.

E. Training

1. Provided
    a. Training shall be provided so that all employees whose work is regulated by this program acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned to them.
    b. Training shall be provided to each affected employee, before the employee is first assigned duties under this program, if a new hazard has been created or special deviations have occurred and before there is a change in assigned duties.
    c. The training shall establish employee proficiency in the duties required by this program and shall introduce new or revised procedures, as necessary.
2. Retraining
    a. Whenever there is a change in confined space operations that presents a hazard about which an employee has not previously been trained.
    b. Whenever the supervisor has reason to believe either that there are deviations from the permit space entry procedures required by this section or that there are inadequacies in the employee's knowledge or use of these procedures.
3. Certification
    a. The supervisor shall certify that the training required by this program has been accomplished.
    b. The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training.
    c. The certification shall be available for inspection by employees, their authorized representatives, management, customers, and the safety department.

Safety Specifics – **Electrical Safety (29 CFR 1926.402-408, 416-417)**

A. General Requirements

***Note:*** *This section addresses electrical safety requirements that are necessary for the practical safeguarding of employees in their workplaces with regard to safety-related work practices.*

1. In addition to covering the hazards arising from the use of electricity at jobsites, these regulations also cover the hazards arising from the accidental contact, direct or indirect, by employees with all energized lines, above or below ground, passing through or near the jobsite.
2. Protection of Employees
    a. No employer shall permit an employee to work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by deenergizing the circuit and grounding it or by guarding it effectively by insulation or other means.
    b. In work areas where the exact location of underground electric powerlines is unknown, employees using jack-hammers, bars, or other hand tools which may contact a line shall be provided with insulated protective gloves.
    c. Before work is begun the employer shall ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit.
        (A.) The employer shall post and maintain proper warning signs where such a circuit exists.
        (B.) The employer shall advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.
3. Passageways & Open spaces
    a. Barriers or other means of guarding shall be provided to ensure that workspace for electrical equipment will not be used as a passageway during periods when energized parts of electrical equipment are exposed.
    b. Working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a hazard to employees.
4. In existing installations, no changes in circuit protection shall be made to increase the load in excess of the load rating of the circuit wiring.
5. When fuses are installed or removed with one or both terminals energized, special tools insulated for the voltage shall be used.
6. Cords and cables.
    a. Worn or frayed electric cords or cables shall not be used.
    b. Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

B. Lockout and tagging of circuits

1. Controls that are to be deactivated during the course of work on energized or deenergized equipment or circuits shall be tagged.
2. Equipment or circuits that are deenergized shall be rendered inoperative and shall have tags attached at all points where such equipment or circuits can be energized.
3. Tags shall be placed to identify plainly the equipment or circuits being worked on.

C. Installation Safety Requirements

1. Covered
    a. Installation safety requirements for electrical equipment and installations used to provide electric power and light at the jobsite, both temporary and permanent
    b. Portable and vehicle-mounted generators used to provide power for equipment used at the jobsite.
2. Not Covered
    a. Existing permanent installations that were in place before the construction activity commenced.
    b. Installations used for the generation, transmission, and distribution of electric energy, including related communication, metering, control, and transformation installations.
3. Requirements
    a. All electrical conductors and equipment shall be approved.
    b. The employer shall ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious physical harm to employees.
    c. Listed, labeled, or certified equipment shall be installed and used in accordance with instructions included in the listing, labeling, or certification.
    d. Equipment intended to break current shall have an interrupting rating at system voltage sufficient for the current that must be interrupted.
    e. Electric equipment shall be firmly secured to the surface on which it is mounted. Wooden plugs driven into holes in masonry, concrete, plaster, or similar materials shall not be used.
    f. Electrical equipment which depends upon the natural circulation of air and convection principles for cooling of exposed surfaces shall be installed so that room air flow over such surfaces is not prevented by walls or by adjacent installed equipment. For equipment designed for floor mounting, clearance between top surfaces and adjacent surfaces shall be provided to dissipate rising warm air. Electrical equipment provided with ventilating openings shall be installed so that walls or other obstructions do not prevent the free circulation of air through the equipment.
    g. Conductors shall be spliced or joined with splicing devices designed for the use or by brazing, welding, or soldering with a fusible metal or alloy. Soldered splices shall first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices and joints and the free ends of conductors shall be covered with an insulation equivalent to that of the conductors or with an insulating device designed for the purpose.
    h. Parts of electric equipment which in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.
    i. Electrical equipment shall not be used unless the manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product may be identified is placed on the equipment and unless other markings are provided giving voltage, current, wattage, or other ratings as necessary. The marking shall be of sufficient durability to withstand the environment involved.
4. Identification of disconnecting means & circuits
    a. Each disconnecting means required by this subpart for motors and appliances shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. Each service, feeder, and branch circuit, at its disconnecting means or overcurrent device, shall be legibly marked to indicate its purpose, unless located and

arranged so the purpose is evident. These markings shall be of sufficient durability to withstand the environment involved.

b. 600 Volts, nominal, or less

(A.) Working Space around electric equipment

(1.) Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.

(2.) The dimension of the working space in the direction of access to live parts operating at 600 volts or less and likely to require examination, adjustment, servicing, or maintenance while alive shall not be less than indicated in Table K-1.

**Table K-1**

| Nominal voltage to ground | Minimum clear distance for conditions (1) | | |
|---|---|---|---|
| | (a) | (b) | (c) |
| | Feet (2) | Feet (2) | Feet (2) |
| 0 - 150 | 3 | 3 | 3 |
| 151 - 600 | 3 | 3-1/2 | 4 |

*Footnote(1) Conditions (a), (b), and (c) are as follows: [a] Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. [b] Exposed live parts on one side and grounded parts on the other side. [c] Exposed live parts on both sides of the workplace [not guarded as provided in Condition (a)] with the operator between.*
*Footnote(2) Note: For International System of Units (SI):one foot=0.3048m.*

(3.) In addition to the dimensions shown, workspace shall not be less than 30 inches (762 mm) wide in front of the electric equipment.

(4.) Distances shall be measured from the live parts if they are exposed or from the enclosure front or opening if the live parts are enclosed.

(5.) Walls constructed of concrete, brick, or tiles are considered to be grounded.

(6.) Working space is not required in back of assemblies such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

(7.) Working space required shall not be used for storage.

(8.) When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be guarded.

(9.) At least one entrance shall be provided to give access to the working space about electric equipment.

(10.) Where there are live parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment shall not be less than 3 feet (914 mm).

(11.) The minimum headroom of working spaces about service equipment, switchboards, panelboards, or motor control centers shall be 6 feet 3 inches (1.91 m).

(B.) Guarding of live parts

(1.) Live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by cabinets or other forms of enclosures, or by any of the following means:

(a.) By location in a room, vault, or similar enclosure that is accessible only to qualified persons.

(b.) By partitions or screens so arranged that only qualified persons will have access to the space within reach of the live parts. Any openings in such partitions or screens shall be so sized and located that persons are not likely to come into accidental contact with the live parts or to bring conducting objects into contact with them.

(c.) By location on a balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.

(d.) By elevation of 8 feet (2.44 m) or more above the floor or other working surface and so installed as to exclude unqualified persons.

(2.) In locations where electric equipment would be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent such damage.

(3.) Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

c. Over 600 Volts, nominal

(A.) Electrical installations in a vault, room, closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by lock and key or other equivalent means, are considered to be accessible to qualified persons only. A wall, screen, or fence less than 8 feet (2.44 m) in height is not considered adequate to prevent access unless it has other features that provide a degree of isolation equivalent to an 8-foot (2.44-m) fence.

(B.) The entrances to all buildings, rooms or enclosures containing exposed live parts or exposed conductors operating at over 600 volts, nominal, shall be kept locked or shall be under the observation of a qualified person at all times.

(C.) Electrical installations having exposed live parts shall be accessible to qualified persons only and shall comply with the applicable provisions of this section.

(D.) Installations accessible to unqualified persons

(1.) Electrical installations that are open to unqualified persons shall be made with metal-enclosed equipment or shall be enclosed in a vault or in an area, access to which is controlled by a lock.

(2.) Metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes, and other similar associated equipment shall be marked with appropriate caution signs.

(3.) If equipment is exposed to physical damage from vehicular traffic, guards shall be provided to prevent such damage.

(4.) Ventilating or similar openings in metal-enclosed equipment shall be designed so that foreign objects inserted through these openings will be deflected from energized parts.

(E.) Workspace about equipment

(1.) Sufficient space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment.

(2.) Where energized parts are exposed, the minimum clear workspace shall not be less than 6 feet 6 inches (1.98 m) high (measured vertically from the floor

or platform), or less than 3 feet (914 mm) wide (measured parallel to the equipment).

(3.) The depth shall be as required in Table K-2. The workspace shall be adequate to permit at least a 90-degree opening of doors or hinged panels.

**Table K-2**

| Nominal voltage to ground | Conditions (1) | | |
|---|---|---|---|
| | (a) | (b) | (c) |
| | Feet (2) | Feet (2) | Feet (2) |
| 601 – 2,500 | 3 | 4 | 5 |
| 2,501 – 9,000 | 4 | 5 | 6 |
| 9,001 – 25,000 | 5 | 6 | 9 |
| 25,001 – 75 kV | 6 | 8 | 10 |
| Above 75 kV | 8 | 10 | 12 |

*Footnote(1) Conditions (a), (b), and (c) are as follows: (a) Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by insulating materials. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. (b) Exposed live parts on one side and grounded parts on the other side. Walls constructed of concrete, brick, or tile are considered to be grounded surfaces. (c) Exposed live parts on both sides of the workspace [not guarded as provided in Condition (a)] with the operator between.*
*Footnote(2) NOTE: For SI units: one foot=0.3048 m.*

(4.) The minimum clear working space in front of electric equipment such as switchboards, control panels, switches, circuit breakers, motor controllers, relays, and similar equipment shall not be less than specified in Table K-2 unless otherwise specified in this section.

(5.) Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. However, working space is not required in back of equipment such as deadfront switchboards or control assemblies where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back.

(6.) Where rear access is required to work on de-energized parts on the back of enclosed equipment, a minimum working space of 30 inches (762 mm) horizontally shall be provided.

(7.) At least one entrance not less than 24 inches (610 mm) wide and 6 feet 6 inches (1.98 m) high shall be provided to give access to the working space about electric equipment. On switchboard and control panels exceeding 48 inches (1.22 m) in width, there shall be one entrance at each end of such board where practicable. Where bare energized parts at any voltage or insulated energized parts above 600 volts are located adjacent to such entrance, they shall be guarded.

D. Wiring Design & Protection

1. Grounded & Grounding conductors

a. A conductor used as a grounded conductor shall be identifiable and distinguishable from all other conductors. A conductor used as an equipment grounding conductor shall be identifiable and distinguishable from all other conductors.

b. No grounded conductor shall be attached to any terminal or lead so as to reverse designated polarity.

c. A grounding terminal or grounding-type device on a receptacle, cord connector, or attachment plug shall not be used for purposes other than grounding.

2. Ground Fault Protection

a. The company will use ground fault circuit interrupters or assured equipment grounding conductor program to protect employees on the job site. These requirements are in addition to any other requirements for equipment grounding conductors.

b. All 120-volt, single-phase 15- and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground-fault circuit interrupters for personnel protection.

c. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator rated not more than 5kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground-fault circuit interrupters.

d. Ground Fault Protection Program

(A.) The employer shall establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This program shall comply with the following minimum requirements:

(B.) A written description of the program, including the specific procedures adopted by the employer, shall be available at the jobsite for inspection and copying.

(C.) The employer shall designate one or more competent persons to implement the program.

(D.) Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indications of possible internal damage. Equipment found damaged or defective shall not be used until repaired.

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

(1.) All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

(2.) Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

(F.) All required tests shall be performed:

(1.) Before first use

(2.) Before equipment is returned to service following any repairs

(3.) Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over)

(4.) At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months

(G.) The employer shall not make available or permit the use by employees of any equipment which has not met the requirements of this section.

(H.) Tests performed shall be recorded. This test record shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means and shall be maintained until replaced by a more current record. The record shall be made available on the jobsite for inspection.

e. Outlet devices shall have an ampere rating not less than the load to be served and shall comply with the following:

(A.) A single receptacle installed on an individual branch circuit shall have an ampere rating of not less than that of the branch circuit.

(B.) Where connected to a branch circuit supplying two or more receptacles or outlets, receptacle ratings shall conform to the values listed in Table K-4.

**Table K-4 – Receptacle Ratings for Various Size Circuits**

| Circuit Rating Amperes | Receptacle Rating Amperes |
|---|---|
| 15 | Not over 15 |
| 20 | 15 or 20 |
| 30 | 30 |
| 40 | 40 or 50 |
| 50 | 50 |

(C.) The rating of an attachment plug or receptacle used for cord- and plug-connection of a motor to a branch circuit shall not exceed 15 amperes at 125 volts or 10 amperes at 250 volts if individual overload protection is omitted.

f. Lamps for outdoor lighting shall be located below all live conductors, transformers, or other electric equipment, unless such equipment is controlled by a disconnecting means that can be locked in the open position or unless adequate clearances or other safeguards are provided for relamping operations.

g. Disconnecting for service

(A.) Means shall be provided to disconnect all conductors in a building or other structure from the service-entrance conductors. The disconnecting means shall plainly indicate whether it is in the open or closed position and shall be installed at a readily accessible location nearest the point of entrance of the service-entrance conductors.

(B.) If over 600 volts, nominal

(1.) Service-entrance conductors installed as open wires shall be guarded to make them accessible only to qualified persons.

(2.) Signs warning of high voltage shall be posted where unauthorized employees might come in contact with live parts.

h. Overcurrent protection

(A.) 600 volts, nominal, or less. The following requirements apply to overcurrent protection of circuits rated 600 volts, nominal, or less.

(1.) Conductors and equipment shall be protected from overcurrent in accordance with their ability to safely conduct current. Conductors shall have sufficient ampacity to carry the load.

(2.) Except for motor-running overload protection, overcurrent devices shall not interrupt the continuity of the grounded conductor unless all conductors of the circuit are opened simultaneously.

(3.) Except for devices provided for current-limiting on the supply side of the service disconnecting means, all cartridge fuses which are accessible to other than qualified persons and all fuses and thermal cutouts on circuits over 150 volts to ground shall be provided with disconnecting means. This disconnecting means shall be installed so that the fuse or thermal cutout can be disconnected from its supply without disrupting service to equipment and circuits unrelated to those protected by the overcurrent device.

(4.) Overcurrent devices shall be readily accessible. Overcurrent devices shall not be located where they could create an employee safety hazard by being exposed to physical damage or located in the vicinity of easily ignitable material.

(5.) Fuses and circuit breakers shall be so located or shielded that employees will not be burned or otherwise injured by their operation.

(6.) Circuit breakers

(a.) Circuit breakers shall clearly indicate whether they are in the open (off) or closed (on) position.

(b.) Where circuit breaker handles on switchboards are operated vertically rather than horizontally or rotationally, the up position of the handle shall be the closed (on) position.

(c.) If used as switches in 120-volt, fluorescent lighting circuits, circuit breakers shall be marked "SWD."

(B.) Over 600 volts, nominal. Feeders and branch circuits over 600 volts, nominal, shall have short-circuit protection.

i. Grounding for systems, circuits & equipment

(A.) The following systems which supply premises wiring shall be grounded:

(1.) Three-wire DC systems. All 3-wire DC systems shall have their neutral conductor grounded.

(2.) Two-wire DC systems. Two-wire DC systems operating at over 50 volts through 300 volts between conductors shall be grounded unless they are rectifier-derived from an AC system complying with this section.

(3.) AC circuits, less than 50 volts. AC circuits of less than 50 volts shall be grounded if they are installed as overhead conductors outside of buildings or if they are supplied by transformers and the transformer primary supply system is ungrounded or exceeds 150 volts to ground.

(4.) AC systems, 50 volts to 1000 volts. AC systems of 50 volts to 1000 volts shall be grounded under any of the following conditions, unless exempted by this section:

(a.) If the system can be so grounded that the maximum voltage to ground on the ungrounded conductors does not exceed 150 volts;

(b.) If the system is nominally rated 480Y/277 volt, 3-phase, 4-wire in which the neutral is used as a circuit conductor;

(c.) If the system is nominally rated 240/120 volt, 3-phase, 4-wire in which the midpoint of one phase is used as a circuit conductor; or

(d.) If a service conductor is uninsulated.

(5.) Exceptions. AC systems of 50 volts to 1000 volts are not required to be grounded if the system is separately derived and is supplied by a transformer that has a primary voltage rating less than 1000 volts, provided all of the following conditions are met:

(a.) The system is used exclusively for control circuits,

(b.) The conditions of maintenance and supervision assure that only qualified persons will service the installation,

(c.) Continuity of control power is required, and

(d.) Ground detectors are installed on the control system.

(B.) Portable and vehicle-mounted generators

(1.) Under the following conditions, the frame of a portable generator need not be grounded and may serve as the grounding electrode for a system supplied by the generator:

(a.) The generator supplies only equipment mounted on the generator and/or cord- and plug-connected equipment through receptacles mounted on the generator, and

(b.) The noncurrent-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles are bonded to the generator frame.

(2.) Under the following conditions the frame of a vehicle may serve as the grounding electrode for a system supplied by a generator located on the vehicle:

(a.) The frame of the generator is bonded to the vehicle frame, and

(b.) The generator supplies only equipment located on the vehicle and/or cord- and plug-connected equipment through receptacles mounted on the vehicle or on the generator, and

(c.) The noncurrent-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles are bonded to the generator frame, and

(d.) The system complies with all other provisions of this section.

(3.) Neutral conductor bonding. A neutral conductor shall be bonded to the generator frame if the generator is a component of a separately derived system. No other conductor need be bonded to the generator frame.

(C.) For AC premises wiring systems the identified conductor shall be grounded.

(D.) Grounding connections

(1.) For a grounded system, a grounding electrode conductor shall be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor shall be connected to the grounded circuit conductor on the supply side of the service disconnecting means, or on the supply side of the system disconnecting means or overcurrent devices if the system is separately derived.

(2.) For an ungrounded service-supplied system, the equipment grounding conductor shall be connected to the grounding electrode conductor at the service equipment. For an ungrounded separately derived system, the equipment grounding conductor shall be connected to the grounding electrode conductor at, or ahead of, the system disconnecting means or overcurrent devices.

(E.) The path to ground from circuits, equipment, and enclosures shall be permanent and continuous.

(F.) Supports, enclosures, and equipment

(1.) Metal enclosures for service equipment shall be grounded.

(2.) Exposed noncurrent-carrying metal parts of fixed equipment which may become energized shall be grounded under any of the following conditions:

(a.) If within 8 feet (2.44 m) vertically or 5 feet (1.52 m) horizontally of ground or grounded metal objects and subject to employee contact.

(b.) If located in a wet or damp location and subject to employee contact.

(c.) If in electrical contact with metal.

(d.) If in a hazardous (classified) location.

(e.) If supplied by a metal-clad, metal-sheathed, or grounded metal raceway wiring method.

(f.) If equipment operates with any terminal at over 150 volts to ground; however, the following need not be grounded:

- Enclosures for switches or circuit breakers used for other than service equipment and accessible to qualified persons only;
- Metal frames of electrically heated appliances which are permanently and effectively insulated from ground; and
- The cases of distribution apparatus such as transformers and capacitors mounted on wooden poles at a height exceeding 8 feet (2.44 m) above ground or grade level.

(3.) Exposed noncurrent-carrying metal parts of cord- and plug-connected equipment which may become energized shall be grounded in the following conditions:

(a.) If in a hazardous (classified) location.

(b.) If operated at over 150 volts to ground, except for guarded motors and metal frames of electrically heated appliances if the appliance frames are permanently and effectively insulated from ground.

(c.) Unless exempted:

- Hand held motor-operated tools;
- Cord- and plug-connected equipment used in damp or wet locations or by employees standing on the ground or on metal floors or working inside of metal tanks or boilers;
- Portable and mobile X-ray and associated equipment;
- Tools likely to be used in wet and/or conductive locations;
- Portable hand lamps.

(d.) Exemptions: Tools likely to be used in wet and/or conductive locations need not be grounded if supplied through an isolating transformer with an ungrounded secondary of not over 50 volts. Listed or labeled portable tools and appliances protected by a system of double insulation, or its equivalent, need not be grounded. If such a system is employed, the equipment shall be distinctively marked to indicate that the tool or appliance utilizes a system of double insulation.

(4.) The metal parts of the following nonelectrical equipment shall be grounded: Frames and tracks of electrically operated cranes; frames of nonelectrically driven elevator cars to which electric conductors are attached; hand-operated metal shifting ropes or cables of electric elevators, and metal partitions, grill work, and similar metal enclosures around equipment of over lkV between conductors.

j. Methods of grounding

(A.) Noncurrent-carrying metal parts of fixed equipment, if required to be grounded, shall be grounded by an equipment grounding conductor which is contained within the same raceway, cable, or cord, or runs with or encloses the circuit conductors. For DC circuits only, the equipment grounding conductor may be run separately from the circuit conductors.

(B.) A conductor used for grounding fixed or movable equipment shall have capacity to conduct safely any fault current which may be imposed on it.

(C.) Electric equipment is considered to be effectively grounded if it is secured to, and in electrical contact with, a metal rack or structure that is provided for its support and the metal rack or structure is grounded by the method specified for the noncurrent-carrying metal parts of fixed equipment in paragraph (f)(8)(i) of this section. Metal car frames supported by metal hoisting cables attached to or running over metal sheaves or drums of grounded elevator machines are also considered to be effectively grounded.

E. Wiring methods, components, and equipment

1. General

a. Metal raceways, cable armor, and other metal enclosures for conductors shall be metallically joined together into a continuous electric conductor and shall be so connected to all boxes, fittings, and cabinets as to provide effective electrical continuity.

b. No wiring systems of any type shall be installed in ducts used to transport dust, loose stock or flammable vapors. No wiring system of any type shall be installed in any duct used for vapor removal or in any shaft containing only such ducts.

2. Temporary Wiring

a. Temporary wiring shall be removed immediately upon completion of construction or the purpose for which the wiring was installed.

b. Feeders shall originate in a distribution center. The conductors shall be run as multiconductor cord or cable assemblies or within raceways; or, where not subject to physical damage, they may be run as open conductors on insulators not more than 10 feet (3.05 m) apart.

c. Branch circuits shall originate in a power outlet or panelboard. Conductors shall be run as multiconductor cord or cable assemblies or open conductors, or shall be run in raceways. All conductors shall be protected by overcurrent devices at their ampacity. Runs of open conductors shall be located where the conductors will not be subject to physical damage, and the conductors shall be fastened at intervals not exceeding 10 feet (3.05 m). No

branch-circuit conductors shall be laid on the floor. Each branch circuit that supplies receptacles or fixed equipment shall contain a separate equipment grounding conductor if the branch circuit is run as open conductors.

d. Receptacles shall be of the grounding type. Unless installed in a complete metallic raceway, each branch circuit shall contain a separate equipment grounding conductor, and all receptacles shall be electrically connected to the grounding conductor. Receptacles for uses other than temporary lighting shall not be installed on branch circuits which supply temporary lighting. Receptacles shall not be connected to the same ungrounded conductor of multiwire circuits which supply temporary lighting.

e. Disconnecting switches or plug connectors shall be installed to permit the disconnection of all ungrounded conductors of each temporary circuit.

f. All lamps for general illumination shall be protected from accidental contact or breakage. Metal-case sockets shall be grounded.

g. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.

h. Portable electric lighting used in wet and/or other conductive locations, as for example, drums, tanks, and vessels, shall be operated at 12 volts or less. However, 120-volt lights may be used if protected by a ground-fault circuit interrupter.

i. A box shall be used wherever a change is made to a raceway system or a cable system which is metal clad or metal sheathed.

j. 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

k. Extension cord sets used with portable electric tools and appliances shall be of three-wire type and shall be designed for hard or extra-hard usage. Flexible cords used with temporary and portable lights shall be designed for hard or extra-hard usage.

***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).*

l. For temporary wiring over 600 volts, nominal, fencing, barriers, or other effective means shall be provided to prevent access of other than authorized and qualified personnel.

3. Cabinets, boxes, and fittings

a. Conductors entering boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed. Unused openings in cabinets, boxes, and fittings shall also be effectively closed.

b. All pull boxes, junction boxes, and fittings shall be provided with covers. If metal covers are used, they shall be grounded. In energized installations each outlet box shall have a cover, faceplate, or fixture canopy. Covers of outlet boxes having holes through which flexible cord pendants pass shall be provided with bushings designed for the purpose or shall have smooth, well-rounded surfaces on which the cords may bear.

c. In addition to other requirements in this section for pull and junction boxes, the following shall apply to these boxes for systems over 600 volts, nominal:

(A.) Boxes shall provide a complete enclosure for the contained conductors or cables.

(B.) Boxes shall be closed by covers securely fastened in place. Underground box covers that weigh over 100 pounds (43.6 kg) meet this requirement. Covers for boxes shall be permanently marked "HIGH VOLTAGE." The marking shall be on the outside of the box cover and shall be readily visible and legible.

4. Knife switches

   Single-throw knife switches shall be so connected that the blades are dead when the switch is in the open position. Single-throw knife switches shall be so placed that gravity will not tend to close them. Single-throw knife switches approved for use in the inverted position shall be provided with a locking device that will ensure that the blades remain in the open position when so set. Double-throw knife switches may be mounted so that the throw will be either vertical or horizontal. However, if the throw is vertical, a locking device shall be provided to ensure that the blades remain in the open position when so set.

5. Switchboards and panelboards

   Switchboards that have any exposed live parts shall be located in permanently dry locations and accessible only to qualified persons. Panelboards shall be mounted in cabinets, cutout boxes, or enclosures designed for the purpose and shall be dead front. However, panelboards other than the dead front externally-operable type are permitted where accessible only to qualified persons. Exposed blades of knife switches shall be dead when open.

6. Enclosures for damp or wet locations.

   a. Cabinets, cutout boxes, fittings, boxes, and panelboard enclosures in damp or wet locations shall be installed so as to prevent moisture or water from entering and accumulating within the enclosures. In wet locations the enclosures shall be weatherproof.

   b. Switches, circuit breakers, and switchboards installed in wet locations shall be enclosed in weatherproof enclosures.

7. Conductors for general wiring

   All conductors used for general wiring shall be insulated unless otherwise permitted in this Subpart. The conductor insulation shall be of a type that is suitable for the voltage, operating temperature, and location of use. Insulated conductors shall be distinguishable by appropriate color or other means as being grounded conductors, ungrounded conductors, or equipment grounding conductors.

8. Flexible cords and cables

   a. Permitted uses. Flexible cords and cables shall be suitable for conditions of use and location. Flexible cords and cables shall be used only for:

      (A.) Pendants

      (B.) Wiring of fixtures

      (C.) Connection of portable lamps or appliances

      (D.) Elevator cables

      (E.) Wiring of cranes and hoists

      (F.) Connection of stationary equipment to facilitate their frequent interchange

      (G.) Prevention of the transmission of noise or vibration

      (H.) Appliances where the fastening means and mechanical connections are designed to permit removal for maintenance and repair

   b. If used as permitted, the flexible cord shall be equipped with an attachment plug and shall be energized from a receptacle outlet.

   c. Prohibited uses. Flexible cords and cables shall not be used:

      (A.) As a substitute for the fixed wiring of a structure

      (B.) Where run through holes in walls, ceilings, or floors

      (C.) Where run through doorways, windows, or similar openings, except as permitted

(D.) Where attached to building surfaces

(E.) Where concealed behind building walls, ceilings, or floors

d. Flexible cords shall be used only in continuous lengths without splice or tap. Hard service flexible cords No. 12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.

e. Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

f. Flexible cords and cables shall be protected by bushings or fittings where passing through holes in covers, outlet boxes, or similar enclosures.

9. Portable cables over 600 volts, nominal

Multiconductor portable cable for use in supplying power to portable or mobile equipment at over 600 volts, nominal, shall consist of No. 8 or larger conductors employing flexible stranding. Cables operated at over 2000 volts shall be shielded for the purpose of confining the voltage stresses to the insulation. Grounding conductors shall be provided. Connectors for these cables shall be of a locking type with provisions to prevent their opening or closing while energized. Strain relief shall be provided at connections and terminations. Portable cables shall not be operated with splices unless the splices are of the permanent molded, vulcanized, or other equivalent type. Termination enclosures shall be marked with a high voltage hazard warning, and terminations shall be accessible only to authorized and qualified personnel.

10. Fixture wires

a. Fixture wires shall be suitable for the voltage, temperature, and location of use. A fixture wire which is used as a grounded conductor shall be identified.

b. Fixture wires may be used:

(A.) For installation in lighting, fixtures and in similar equipment where enclosed or protected and not subject to bending or twisting in use

(B.) For connecting lighting fixtures to the branch-circuit conductors supplying the fixtures

c. Fixture wires shall not be used as branch-circuit conductors except as permitted for Class 1 power-limited circuits.

11. Equipment for general use

a. Lighting fixtures, lampholders, lamps, and receptacles

(A.) Fixtures, lampholders, lamps, rosettes, and receptacles shall have no live parts normally exposed to employee contact. However, rosettes and cleat-type lampholders and receptacles located at least 8 feet (2.44 m) above the floor may have exposed parts.

(B.) Fixtures, lampholders, rosettes, and receptacles shall be securely supported. A fixture that weighs more than 6 pounds (2.72 kg) or exceeds 16 inches (406 mm) in any dimension shall not be supported by the screw shell of a lampholder.

(C.) Portable lamps shall be wired with flexible cord and an attachment plug of the polarized or grounding type. If the portable lamp uses an Edison-based lampholder, the grounded conductor shall be identified and attached to the screw shell and the identified blade of the attachment plug. In addition, portable handlamps shall comply with the following:

(1.) Metal shell, paperlined lampholders shall not be used

(2.) Handlamps shall be equipped with a handle of molded composition or other insulating material

(3.) Handlamps shall be equipped with a substantial guard attached to the lampholder or handle

(4.) Metallic guards shall be grounded by the means of an equipment grounding conductor run within the power supply cord

(D.) Lampholders of the screw-shell type shall be installed for use as lampholders only. Lampholders installed in wet or damp locations shall be of the weatherproof type.

(E.) Fixtures installed in wet or damp locations shall be identified for the purpose and shall be installed so that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.

b. Receptacles, cord connectors, and attachment plugs (caps)

(A.) Receptacles, cord connectors, and attachment plugs shall be constructed so that no receptacle or cord connector will accept an attachment plug with a different voltage or current rating than that for which the device is intended. However, a 20-ampere T-slot receptacle or cord connector may accept a 15-ampere attachment plug of the same voltage rating. Receptacles connected to circuits having different voltages, frequencies, or types of current (ac or dc) on the same premises shall be of such design that the attachment plugs used on these circuits are not interchangeable.

(B.) A receptacle installed in a wet or damp location shall be designed for the location.

c. Appliances

(A.) Appliances, other than those in which the current-carrying parts at high temperatures are necessarily exposed, shall have no live parts normally exposed to employee contact.

(B.) A means shall be provided to disconnect each appliance.

(C.) Each appliance shall be marked with its rating in volts and amperes or volts and watts.

d. Motors

(A.) This paragraph applies to motors, motor circuits, and controllers.

(B.) In sight from. If specified that one piece of equipment shall be â¿¿in sight fromâ¿• another piece of equipment, one shall be visible and not more than 50 feet (15.2 m) from the other.

(C.) Disconnecting means -

(1.) A disconnecting means shall be located in sight from the controller location. The controller disconnecting means for motor branch circuits over 600 volts, nominal, may be out of sight of the controller, if the controller is marked with a warning label giving the location and identification of the disconnecting means which is to be locked in the open position.

(2.) The disconnecting means shall disconnect the motor and the controller from all ungrounded supply conductors and shall be so designed that no pole can be operated independently.

(3.) If a motor and the driven machinery are not in sight from the controller location, the installation shall comply with one of the following conditions:

(a.) The controller disconnecting means shall be capable of being locked in the open position.

(b.) A manually operable switch that will disconnect the motor from its source of supply shall be placed in sight from the motor location.

(4.) The disconnecting means shall plainly indicate whether it is in the open (off) or closed (on) position.

(5.) The disconnecting means shall be readily accessible. If more than one disconnect is provided for the same equipment, only one need be readily accessible.

(6.) An individual disconnecting means shall be provided for each motor, but a single disconnecting means may be used for a group of motors under any one of the following conditions:

(a.) If a number of motors drive special parts of a single machine or piece of apparatus, such as a metal or woodworking machine, crane, or hoist;

(b.) If a group of motors is under the protection of one set of branch-circuit protective devices; or

(c.) If a group of motors is in a single room in sight from the location of the disconnecting means.

(D.) Motor overload, short-circuit, and ground-fault protection

Motors, motor-control apparatus, and motor branch-circuit conductors shall be protected against overheating due to motor overloads or failure to start, and against short-circuits or ground faults. These provisions do not require overload protection that will stop a motor where a shutdown is likely to introduce additional or increased hazards, as in the case of fire pumps, or where continued operation of a motor is necessary for a safe shutdown of equipment or process and motor overload sensing devices are connected to a supervised alarm.

(E.) Protection of live parts-all voltages

(1.) Stationary motors having commutators, collectors, and brush rigging located inside of motor end brackets and not conductively connected to supply circuits operating at more than 150 volts to ground need not have such parts guarded. Exposed live parts of motors and controllers operating at 50 volts or more between terminals shall be guarded against accidental contact by any of the following:

(a.) By installation in a room or enclosure that is accessible only to qualified persons;

(b.) By installation on a balcony, gallery, or platform, so elevated and arranged as to exclude unqualified persons; or

(c.) By elevation 8 feet (2.44 m) or more above the floor.

(2.) Where live parts of motors or controllers operating at over 150 volts to ground are guarded against accidental contact only by location, and where adjustment or other attendance may be necessary during the operation of the apparatus, insulating mats or platforms shall be provided so that the attendant cannot readily touch live parts unless standing on the mats or platforms.

e. Transformers

(A.) The following paragraphs cover the installation of all transformers, except:

(1.) Current transformers;

(2.) Dry-type transformers installed as a component part of other apparatus;

(3.) Transformers which are an integral part of an X-ray, high frequency, or electrostatic-coating apparatus;

(4.) Transformers used with Class 2 and Class 3 circuits, sign and outline lighting, electric discharge lighting, and power-limited fire-protective signaling circuits.

(B.) The operating voltage of exposed live parts of transformer installations shall be indicated by warning signs or visible markings on the equipment or structure.

(C.) Dry-type, high fire point liquid-insulated, and askarel-insulated transformers installed indoors and rated over 35 kV shall be in a vault.

(D.) If they present a fire hazard to employees, oil-insulated transformers installed indoors shall be in a vault.

(E.) Combustible material, combustible buildings and parts of buildings, fire escapes, and door and window openings shall be safeguarded from fires which may originate in oil-insulated transformers attached to or adjacent to a building or combustible material.

(F.) Transformer vaults shall be constructed so as to contain fire and combustible liquids within the vault and to prevent unauthorized access. Locks and latches shall be so arranged that a vault door can be readily opened from the inside.

(G.) Any pipe or duct system foreign to the vault installation shall not enter or pass through a transformer vault.

(H.) Materials shall not be stored in transformer vaults.

f. Capacitors

(A.) Drainage of stored charge. All capacitors, except surge capacitors or capacitors included as a component part of other apparatus, shall be provided with an automatic means of draining the stored charge and maintaining the discharged state after the capacitor is disconnected from its source of supply.

(B.) Over 600 volts. Capacitors rated over 600 volts, nominal, shall comply with the following additional requirements:

(1.) Isolating or disconnecting switches (with no interrupting rating) shall be interlocked with the load interrupting device or shall be provided with prominently displayed caution signs to prevent switching load current.

(2.) For series capacitors the proper switching shall be assured by use of at least one of the following:

(a.) Mechanically sequenced isolating and bypass switches

(b.) Interlocks

(c.) Switching procedure prominently displayed at the switching location

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Safety Specifics – **Excavations & Trenching (29 CFR 1926.650)**

A. Policy

Employees shall not enter a trench or excavation unless it is absolutely necessary. If entry is to be made into a trench or excavation greater than four (4) feet deep, specific precautions detailed in this procedure must be taken. Excavation work activities shall be conducted safely with associated exposures eliminated and/or controlled.

B. Risk Assessment

1. A Competent Person shall prepare a Site Safety Plan and follow Subsurface Investigation procedure prior to and during excavation work activities to assess the identifiable hazards associated with work areas, occupations, and tasks.
2. Company associates, in accordance with OSHA, require that a competent person be on site during trenching/excavation activity or employee entry into the trench or excavation.
3. A competent person must have the following qualifications:
    a. Be able to identify and predict trenching/excavation hazards.
    b. Have authority to eliminate hazards and stop work if necessary.
    c. Understand, implement, and meet the requirements of the standard.
    d. Be able to evaluate shoring systems.
    e. Be able to perform soil classification tests.

C. Work Plan (> 5 Ft. in depth)

1. A Competent Person shall develop a work plan for every excavation exceeding five feet in depth based on the Site Safety Plan, Subsurface Investigation and the other requirements of this section.
2. The Excavation Work Safety Plan shall include:
    a. Identification of hazard in the work area related to excavation equipment
    b. Describe the excavation protection system(s) to be provided
    c. Describe the soil type and the correct procedures for the selection, fit, use and maintenance of the excavation protection systems
    d. Describe procedures for excavation
    e. Describe the method of prompt, safe removal of injured workers
    f. Be available on the jobsite
    g. Signature of the Competent Person

D. Training

1. Initial training of employees shall occur during orientation for employees who foreseeably will be engaged in excavation work. Hazard recognition and excavation protection systems shall be included in the training
2. Site specific training shall occur before the start of excavation work activities, including hazards and controls noted in the Site Safety Plan and the other provisions of the written plan.

E. Inspections

1. When employee exposure in an excavation is reasonably anticipated, an inspection shall be conducted by a Competent Person:
2. Prior to the start of work each day
3. As needed throughout the shift
4. After every rainstorm or water accumulation
5. When an unusual occurrence affects the integrity of the excavation

***Note**: 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.*

F. Personal Protective Equipment

Minimum Personal Protective Equipment shall consist of:

1. Approved Hardhats
2. Approved Safety Glasses
3. Approved Safety-toe Boots
4. If exposed to vehicular traffic, employees shall be provided with, and shall wear, warning vests or other suitable garments marked with or made of high-visibility material (and be reflective if working in dim light or at night)

G. Specific engineering control options

1. Excavation protection system configurations that require development by a Registered Professional Engineer (RPE)
    a. Protective systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in accordance with 1926.652(b) and (c).
    b. RPE designs shall be in written form and will include at least the following:
        (A.) The protective system configurations that were determined to be safe for the project.
        (B.) The identity of the RPE approving the design.
    c. At least one copy of the design shall be maintained at the jobsite.
2. Sloping and Benching Systems (excavation depth > 5 ft., < 20 ft.)

    ***Note:** Suitable sloping or benching shall occur at >4 feet in depth for unstable soil (Type C).*

    a. General
        (A.) 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.
    b. Classifying Soil
        (A.) Soil and rock deposits shall be classified in accordance with Section I. Classifying Soil of this requested program.
    c. Maximum allowable slope
        (A.) The maximum allowable slope for a soil or rock deposit shall be determined from Table B below

**Table B-1**
**Maximum Allowable Slopes**

| Soil or rock type | Max allowable slopes (H:V) (1) for excavations < 20 feet deep (3) |
|---|---|
| Stable Rock | Vertical (90º) |
| Type A (2) | 3/4:1 (53º) |
| Type B | 1:1 (45º) |
| Type C | 1 ½:1 (34º) |

*Footnote(1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.*
*Footnote(2) A short-term maximum allowable slope of 1/2H:1V (63º) is allowed in excavations in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53º).*
*Footnote(3) Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.*

(B.) The actual slope shall not be steeper than the maximum allowable slope

(C.) When additional weight loads to the system are present from stored material or equipment, operating equipment, or traffic, a Competent Person shall determine the degree to which the slope must be reduced below the maximum allowable slope and will assure that such reduction is achieved.

3. Support and Shielding Systems (excavation depth > 5 ft., < 20 ft.)

a. General

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

(B.) Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand.

(C.) Employees shall not be allowed in shield systems when shields are being installed, removed, or moved vertically.

(D.) Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields. This means that the access and egress methods shall be included from within the protection of the shielding system.

(E.) 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.

b. Materials and equipment.

(A.) Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.

(B.) 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.

(C.) When material or equipment that is 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 assure the material or equipment is able to support the intended loads or is otherwise suitable for safe use,

then such material or equipment shall be removed from service. Manufactured material or equipment, in this case, shall be evaluated and approved by the manufacturer or a Registered Professional Engineer before being returned to service.

4. Installation and removal of support
    a. Members of support systems shall be securely connected together to prevent sliding, falling, kickouts, or other predictable failure.
    b. Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system.
    c. Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand.
    d. 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.
    e. Removal shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.
    f. Backfilling shall progress together with the removal of support systems from excavations.

H. Specific Excavation Hazard Controls
1. Underground Installations
    a. 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 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), or cannot establish the exact location of these installations, the work may proceed, provided the employees do so with caution, and provided detection equipment or other acceptable means to locate utility installations are used.
    b. When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.
    c. While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.
2. Warning system for mobile equipment

    When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.
3. Employee Protection
    a. Adequate protection shall be provided 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.

b. 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 by placing and keeping such materials or equipment at least 2 feet (.61 m) from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

c. Exposure to Falling Loads

(A.) Whether inside or outside of an excavation, no employee shall be a permitted underneath a load being handled by lifting or digging equipment.

(B.) Employees shall stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.

(C.) Operators of such vehicles may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with 1926.601(b)(6), to provide adequate protection for the operator during loading and unloading operations.

4. Inspections

a. Daily inspections of excavations, the adjacent areas, and protective systems shall be made 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.

b. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift.

c. 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.

d. 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.

5. Access and Egress

a. Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a Competent Person.

b. Ramps and runways constructed of two or more structural members shall have the structural members connected to prevent displacement.

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

d. 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.

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

f. A means of egress from trench excavations shall always be maintained. 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.

6. Hazardous Atmospheres

a. Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are

stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet (1.22 m) in depth.

b. Emergency rescue equipment, such as 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. This equipment shall be attended when in use.

7. Water Accumulation

a. Employees shall not work in excavations in which there is accumulated water, or in excavations in which 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.

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

c. If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation.

8. Fall protection

a. If employees or equipment are required to cross over excavations, walkways or bridges with standard guardrails shall be provided.

b. Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, shall wear a full-body 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.

c. Excavations shall be barricaded to prevent employees and others from falling into them. The edge of an excavation 6 feet (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

I. Classifying Soils

1. Classification of soil and rock deposits

a. Each soil and rock deposit shall be classified by a Competent Person as Stable Rock, Type A, Type B, or Type C in accordance with the definitions detailed in 1926.Subpart P Appendix A.

b. The classification of the deposits shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a Competent Person using tests described within this section.

c. 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.

d. 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.

2. Acceptable visual and manual tests
    a. Visual tests
        (A.) 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 material. Soil composed primarily of coarse-grained sand or gravel is granular material.
        (B.) 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.
        (C.) 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 fall off a vertical side, the soil could be fissured. Small falls are evidence of moving ground and are indications of potentially hazardous situations.
        (D.) Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.
        (E.) Observe the opened side of the excavation to identify layered systems.
        (F.) 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.
        (G.) 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.
    b. Manual tests
        (A.) 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 for a length of at least 2 inches. Cohesive material can be successfully rolled into threads without crumbling.

        (B.) 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 that 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 un-fissured.

        (C.) Thumb penetration

            (1.) The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb 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.
            (2.) This test shall 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.
            (3.) If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.

(D.) 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.

(E.) Drying test

(1.) The basic purpose of the drying test is to differentiate between cohesive material with fissures, un-fissured 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, then:

(2.) If the sample develops cracks as it dries, significant fissures are indicated

(3.) 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 un-fissured cohesive material and the unconfined compressive strength shall be determined

(4.) 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.

Safety Specifics – **Fall Protection (29 CFR 1926 Subpart M)**

A. Duty to Have Fall Protection

1. The employer shall determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity.
2. Each employee on a walking/working surface (horizontal and vertical surface – including ramps, runways and other walkways) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems as detailed in 29 CFR 1926.502.
3. Employers shall provide and install all fall protection systems required for an employee, and shall comply with all other pertinent requirements before that employee begins the work that necessitates the fall protection. This includes employees who are:
    a. Constructing a leading edge 6 feet (1.8 m) or more above lower levels
    b. On a walking/working surface 6 feet (1.8 m) or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work
    c. In a hoist area where there is risk of falling 6 feet (1.8 m) or more to lower levels
    d. On walking/working surfaces that has holes (including skylights)
    e. On the face of formwork or reinforcing steel
    f. At the edge of an excavation 6 feet (1.8 m) or more in depth
    g. Working at ANY height over dangerous equipment

B. Fall Protection Selection

1. Providing fall protection requires an assessment of each fall situation at a given jobsite:
    a. Inspect the area to determine what hazards exist or may arise
    b. Identify the hazards and select the appropriate measures and equipment
    c. Give specific and appropriate instructions to workers to prevent exposure to unsafe conditions
    d. Ensure employees follow procedures given and understand training provided
    e. Apprise ourselves of the steps our specialty subcontractors have taken to meet their fall protection requirements
2. When selecting and purchasing fall protection equipment and supplies, they shall be approved for the purpose for which they are intended.
3. All fall protection systems selected for each application will be installed before an employee is allowed to go to work in an area that necessitates the protection.

C. Personal Fall Arrest Systems (PFAS)

1. The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.
2. Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service.
3. Personal fall arrest systems, when stopping a fall, shall:

a. Limit maximum arresting force on an employee to 1,800 pounds (8 kN)

b. Be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level

c. Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m)

d. Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1.8 m), or the free fall distance permitted by the system, whichever is less

4. Connecting / Anchoring

a. Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists.

b. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows:

(A.) As part of a complete personal fall arrest system which maintains a safety factor of at least two

(B.) Under the supervision of a qualified person

5. Components

a. Body belts are not acceptable as part of a personal fall arrest system.

b. The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.

c. Harnesses and components shall be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

d. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

e. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.

f. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

g. Snaphooks shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.

6. Lifelines

a. Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

b. When vertical lifelines are used, each employee shall be attached to a separate lifeline.

c. Lifelines shall be protected against being cut or abraded.

d. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.

e. On suspended scaffolds or similar work platforms with horizontal lifelines which may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.

7. Orthostatic Intolerance / Suspension Trauma

a. An accumulation of blood in the legs reduces the amount of blood in circulation. During severe venous pooling, the reduction in quantity and/or quality (oxygen content) of blood flowing to the brain causes fainting. This reduction also can have an effect on other vital organs. If these conditions continue, they potentially may be fatal.

b. Risks associated with a fall

(A.) Following a fall, a worker may remain suspended in a harness.

(B.) Unconscious/immobile workers suspended in their harness will not be able to move their legs.

(C.) During the static upright position, venous pooling is likely to occur and cause orthostatic intolerance, especially if the suspended worker is left in place for some time.

(D.) Depending on the length of time the worker is suspended, unconsciousness, venous pooling, and any resulting orthostatic intolerance may lead to death.

(E.) Venous pooling and orthostatic intolerance can be exacerbated by other circumstances related to the fall.

(1.) Shock or the experience of the event that caused the fall

(2.) Other injuries

(3.) Fit/positioning of the harness

(4.) Environmental condition

(5.) Worker's psychological state

(F.) Unless the worker is rescued promptly using established safe procedures, venous pooling and orthostatic intolerance could result in serious or fatal injury, as the brain, kidneys, and other organs are deprived of oxygen.

(1.) Research shows that suspension in a fall arrest device can result in unconsciousness, followed by death, in less than 30 minutes.

(2.) While not common, such fatalities often are referred to as "harness induced pathology" or "suspension trauma."

c. Suspension Trauma Relief Straps

(A.) One of the ways to slow the progression of suspension trauma is to stand up.

(B.) A worker can stand in a harness by employing suspension trauma relief straps.

(C.) Suspension trauma relief straps typically come packaged in two pouches that attach to each side of a harness.

(D.) During a fall event, the worker can deploy the trauma relief straps - creating a loop that the worker can put his feet into and press against to simulate standing up, allowing the leg muscles to contract and can relieve pressure from the leg straps to help improve circulation.

d. Post-Fall Procedures

(A.) Continuous monitoring of the suspended worker for signs and symptoms of suspension trauma.

(B.) Ensuring that a worker receives standard trauma resuscitation once rescued.

(C.) If the worker is unconscious, keeping the worker's air passages open and obtaining first aid.

(D.) Monitoring the worker after rescue and ensuring the worker is evaluated by a health-care professional. The worker should be hospitalized if appropriate. Possible delayed effects, such as kidney failure, which is not unusual in these cases, are difficult to assess on the scene.

D. Positioning Systems

1. Positioning devices shall be rigged such that an employee cannot free fall more than 2 feet (.6m).
2. Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration and defective components shall be removed from service.
3. Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds (13.3 kN), whichever is greater.
4. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.
5. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of this system.
6. Snaphooks shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.
7. Body belts, harnesses, and components shall be used only for employee protection and not to hoist materials.

E. Safety Net Systems

1. Safety nets shall be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet (9.1 m) below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net shall be unobstructed.
2. Safety nets shall extend outward from the outermost projection of the work surface as follows:

| Vertical Distance from Working Level to Horizontal Plane of Net | Minimum Required Horizontal Distance of Outer Edge of Net from the Edge of the Working Surface |
|---|---|
| Up to 5 Feet | 8 Feet |
| More than 5 feet and Up to 10 Feet | 10 Feet |
| More than 10 Feet | 13 Feet |

3. Safety nets shall be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to drop test requirements.
4. Defective nets shall not be used. Safety nets shall be inspected at least once a week for wear, damage, and other deterioration. Defective components shall be removed from service. Safety nets shall also be inspected after any occurrence which could affect the integrity of the safety net system.
5. Materials, scrap pieces, equipment, and tools which have fallen into the safety net shall be removed as soon as possible from the net and at least before the next work shift.

F. Guardrail Systems

1. Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches (1.1 m) plus or minus 3 inches (8 cm) above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria.

   ***Note:*** *When employees are using stilts, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the height of the stilts.*

2. Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches (53 cm) high.
   a. Midrails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.
   b. Screens and mesh, when used, shall extend from the top rail to the walking/working level and along the entire opening between top rail supports.
   c. Intermediate members (such as balusters), when used between posts, shall be not more than 19 inches (48 cm) apart.
   d. Other structural members (such as additional midrails and architectural panels) shall be installed such that there are no openings in the guardrail system that are more than 19 inches (.5 m) wide.
3. Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.
4. The ends of all top rails and midrails shall not overhang the terminal posts, except where such overhang does not constitute a projection hazard.
5. Steel banding and plastic banding shall not be used as top rails or midrails.
6. Top rails and midrails shall be at least one-quarter inch (0.6 cm) nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for top rails, it shall be flagged at not more than 6-foot intervals with high-visibility material.
7. When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.
8. When guardrail systems are used at holes, they shall be erected on all unprotected sides or edges of the hole.
9. For guardrail systems used around holes through which materials may be passed:
   a. When materials are being passed through the hole, not more than two sides of the guardrail system are removed; and
   b. When materials are not being passed through the hole, the hole must be guarded by a guardrail system along all unprotected sides or edges or closed over with a cover.
10. When guardrail systems are used around holes which are used as points of access (such as ladderways), they shall be provided with a gate, or be so offset that a person cannot walk directly into the hole.
11. Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.

G. Warning Line Systems

1. The warning line shall be erected around all sides of the roof work area.

a. When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge.

b. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

c. Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines.

d. When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area.

2. Warning lines shall consist of ropes, wires, or chains, and supporting stanchions erected as follows:

a. The rope, wire, or chain shall be flagged at not more than 6-foot (1.8 m) intervals with high-visibility material;

b. The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.9 m) from the walking/working surface and its highest point is no more than 39 inches (1.0 m) from the walking/working surface;

c. After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 N) applied horizontally against the stanchion, 30 inches (.8 m) above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge;

d. The rope, wire, or chain shall have a minimum tensile strength of 500 pounds (2.22 kN), and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in paragraph (f)(2)(iii) of this section; and

e. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

3. No employee shall be allowed in the area between a roof edge and a warning line unless the employee is performing roofing work in that area.

4. Mechanical equipment on roofs shall be used or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system.

H. Controlled Access Zones

1. When used to control access to areas where leading edge and other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access.

a. When control lines are used, they shall be erected not less than 6 feet (1.8 m) nor more than 25 feet (7.7 m) from the unprotected or leading edge, except when erecting precast concrete members.

b. When erecting precast concrete members, the control line shall be erected not less than 6 feet (1.8 m) nor more than 60 feet (18 m) or half the length of the member being erected, whichever is less, from the leading edge.

c. The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.

d. The control line shall be connected on each side to a guardrail system or wall.

2. When used to control access to areas where overhand bricklaying and related work are taking place:
   a. The controlled access zone shall be defined by a control line erected not less than 10 feet (3.1 m) nor more than 15 feet (4.5 m) from the working edge.
   b. The control line shall extend for a distance sufficient for the controlled access zone to enclose all employees performing overhand bricklaying and related work at the working edge and shall be approximately parallel to the working edge.
   c. Additional control lines shall be erected at each end to enclose the controlled access zone.
   d. Only employees engaged in overhand bricklaying or related work shall be permitted in the controlled access zone.
3. Control lines shall consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:
   a. Each line shall be flagged or otherwise clearly marked at not more than 6-foot (1.8 m) intervals with high-visibility material.
   b. Each line shall be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1 m) from the walking/working surface and its highest point is not more than 45 inches (1.3 m). [50 inches (1.3 m) when overhand bricklaying operations are being performed] from the walking/working surface.]
4. On floors and roofs where guardrail systems are not in place prior to the beginning of overhand bricklaying operations, controlled access zones shall be enlarged, as necessary, to enclose all points of access, material handling areas, and storage areas.
5. On floors and roofs where guardrail systems are in place, but need to be removed to allow overhand bricklaying work or leading edge work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed.

I. Covers

1. Covers for holes in floors, roofs, and other walking/working surfaces
2. Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
3. All other 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.
4. All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
5. All covers shall be color coded or they shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

J. Protection from Falling Objects

1. When an employee is exposed to falling objects, the employer shall have each employee wear a hard hat and shall implement one of the following measures:
   a. Erect toeboards
      (A.) Toeboards shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below.

(B.) Toeboards shall be a minimum of 3 1/2 inches (9 cm) in vertical height from their top edge to the level of the walking/working surface. They shall have not more than 1/4 inch (0.6 cm) clearance above the walking/working surface.

(C.) Toeboards shall be solid or have openings not over 1 inch (2.5 cm) in greatest dimension.

b. Erect guardrail systems

Guardrail systems, when used as falling object protection, shall have all openings small enough to prevent passage of potential falling objects.

c. Erect canopies

Canopies shall be strong enough to prevent collapse and to prevent penetration by any objects which may fall onto the canopy.

d. Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

2. During the performance of overhand bricklaying and related work:
   a. No materials or equipment except masonry and mortar shall be stored within 4 feet (1.2 m) of the working edge.
   b. Excess mortar, broken or scattered masonry units, and all other materials and debris shall be kept clear from the work area by removal at regular intervals.
3. During the performance of roofing work:
   a. Materials and equipment shall not be stored within 6 feet (1.8 m) of a roof edge unless guardrails are erected at the edge.
   b. Materials which are piled, grouped, or stacked near a roof edge shall be stable and self-supporting.

K. Training

1. Under no circumstances shall employees work in areas where they might be exposed to fall hazards, do work requiring fall protection devices, or use fall protection devices until they have successfully completed an approved fall protection training program.
2. The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.
3. The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:
   a. The nature of fall hazards in the work area
   b. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
   c. 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
   d. The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs
   e. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection

4. Workers who wear fall arrest devices while working, and those who may perform rescue activities, should also be trained in orthostatic intolerance/suspension trauma
    a. How orthostatic intolerance/suspension trauma may occur
    b. The factors that may increase a worker's risk
    c. How to recognize the signs and symptoms identified in this bulletin
    d. The appropriate rescue procedures and methods to diminish risk while suspended
        (A.) "Pumping" legs frequently to activate the muscles
        (B.) Use of Suspension Trauma Relief Straps
5. Certification
    a. The employer shall verify employee training by preparing a written certification record. The written certification record shall contain:
        (A.) The name or other identity of the employee trained
        (B.) The date(s) of the training
        (C.) Signature of the person who conducted the training or the signature of the employer
    b. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.
6. Retraining
    a. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:
    b. Changes in the workplace render previous training obsolete
    c. Changes in the types of fall protection systems or equipment to be used render previous training obsolete
    d. Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill

L. Enforcement

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

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Safety Specifics – **Fire Prevention (1926.150)**

A. Firefighting Equipment

1. The company shall be responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work, and shall provide for the firefighting equipment as specified.
2. Access to all available firefighting equipment shall be maintained at all times.
3. All firefighting equipment, provided by the employer, shall be conspicuously located.
4. All firefighting equipment shall be periodically inspected and maintained in operating condition. Defective equipment shall be immediately replaced.

B. Ignition Hazards

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

C. Temporary Heating Devices (29 CFR 1926.154)

1. Ventilation
   a. Fresh air shall be supplied in sufficient quantities to maintain the health and safety of the workmen. If no fresh air is available, mechanical ventilation shall be provided.
   b. When heaters are used in confined spaces, sufficient ventilation must be used to insure proper combustion to maintain the health and safety of the workmen.
2. Clearance and Mounting

   Temporary heating devices shall be installed to provide clearance to combustible material not less than the amount shown below:

| Heating Appliances | Minimum Clearance (inches) | | |
|---|---|---|---|
| | Sides | Rear | Chimney Connection |
| Room heater, circulating type | 12 | 12 | 18 |
| Room heater, radiant type | 36 | 36 | 18 |

D. Open yard storage.

1. Combustible materials shall be piled with due regard to the stability of piles and in no case higher than 20 feet.

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

E. Indoor storage.

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

F. Flammable Liquids

1. Only approved containers and portable tanks shall be used for storage and handling of flammable liquids.
2. Flammable liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of people.
3. Quantities of flammable liquid in excess of 25 gallons shall be stored in an acceptable or approved cabinet. Cabinets shall be labeled in conspicuous lettering, "Flammable-Keep Away from Open Flames."
4. Not more than 60 gallons of Category 1, 2 and/or 3 flammable liquids or 120 gallons of Category 4 flammable liquids shall be stored in any one storage cabinet. Not more than three such cabinets may be located in a single storage area. Quantities in excess of this shall be stored in an inside storage room.

G. Fire Extinguishers

1. A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the protected building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.
2. One or more fire extinguishers, rated not less than 2A, shall be provided on each floor. In multistory buildings, at least one fire extinguisher shall be located adjacent to stairway.
3. Extinguishers subject to freezing temperature shall be protected from freezing.
4. Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.
5. Portable fire extinguishers shall be inspected periodically and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A-1970.
6. Location
    a. A fire extinguisher, rated not less than 10B, shall be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the jobsite. This requirement does not apply to the integral fuel tanks of motor vehicles.
    b. At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable liquids.
    c. At least one portable fire extinguisher having a rating of not less than 20-B units shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.

H. Sprinkler System

1. If the facility being constructed includes the installation of automatic sprinkler protection, the installation shall closely follow the construction and be placed in service as soon as applicable laws permit following completion of each story.
2. During demolition or alterations, existing automatic sprinkler installations shall be retained in service as long as reasonable. The operation of sprinkler control valves shall be permitted only by properly authorized persons. Modification of sprinkler systems to permit alterations or additional demolition should be expedited so that the automatic protection may be returned to service as quickly as possible. Sprinkler control valves shall be checked daily at close of work to ascertain that the protection is in service.

I. Fire alarm devices.

1. An alarm system, e.g., telephone system, siren, etc., shall be established by the employer whereby employees on the site and the local fire department can be alerted for an emergency.
2. Alarm code and reporting instructions shall be conspicuously posted at phones and at employee entrances.

J. Fire cutoffs.

1. Fire walls and exit stairways, required for the completed buildings, shall be given construction priority. Fire doors, with automatic closing devices, shall be hung on openings as soon as practicable.
2. Fire cutoffs shall be retained in buildings undergoing alterations or demolition until operations necessitate their removal.

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Safety Specifics – **First Aid & Medical Services (1926.50, 1910.151)**

A. Procedures

1. Prior to the commencement of each project, provisions shall be made for prompt medical attention in case of serious injury.
    a. Ensure properly trained first-aid providers are on-site if there is no infirmary, clinic, or hospital in near proximity to the workplace which is used for the treatment of all injured employees."
    b. Pre-Plan for the nearest available communications, and/or hospitals and physicians.
    c. Emergency information will be posted in a conspicuous place at the job site.
2. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.
3. For incidents requiring more than on-site first aid, refer to the chapter titled "Emergency & Incident Management" of this manual.

B. First Aid Kit

1. First aid supplies shall be readily accessible and identifiable when required.
2. The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item, and shall be checked by the employer before being sent out on each job.
3. When larger operations or multiple operations are being conducted at the same location, the company should determine the need for additional first aid kits at the worksite, additional types of first aid equipment and supplies and additional quantities and types of supplies and equipment in the first aid kits.
4. If it is reasonably anticipated that employees will be exposed to blood or other potentially infectious materials while using first aid supplies, employers are required to provide appropriate personal protective equipment (PPE) in compliance with the provisions of the Occupational Exposure to Blood borne Pathogens standard, § 1910.1030(d)(3) (56 FR 64175). This standard lists appropriate PPE for this type of exposure, such as gloves, gowns, face shields, masks, and eye protection.
5. First aid kit shall be checked on a weekly basis by the Foreman, or designated representative. First aid kits shall contain, at a minimum, supplies that met ANSI/ISEA Z308.1-2015:
    a. Class A - designed to treat common workplace injuries
        - 16 - 1" x 3"adhesive bandages
        - 1 adhesive tape, 2.5 yards
        - 10 - 1/57 oz. antibiotic applications
        - 10 - 1/57 oz. antiseptics
        - 1 breathing barrier
        - 1 - 4" x 4" burn dressings, gel soaked
        - 10 - 1/32 oz. burn treatments
        - 1 – 4"x5" cold pack
        - 2 - 1.9 square inch eye coverings with means of attachment
        - 1 – 1 fluid oz. eye/skin wash
        - 1 first aid guide
        - 6 - 1/32 oz. hand sanitizers
        - 2 pair medical exam gloves
        - 1 – 2"x4 yd. roller bandage
        - 1 pair scissors
        - 2 – 3"x3" sterile pads
        - 2 – 5"x9" trauma pads
        - 1 triangular bandage

b. Class B - have a broader range of supplies that can be helpful in more complex or high-risk environments

- 50 - 1" x 3"adhesive bandages
- 2 adhesive tapes, 2.5 yards
- 25 - 1/57 oz. antibiotic applications
- 50 - 1/57 oz. antiseptics
- 1 breathing barrier
- 2 - 4" x 4" burn dressings, gel soaked
- 25 - 1/32 oz. burn treatments
- 2 – 4"x5" cold packs
- 2 - 1.9 square inch eye coverings with means of attachment
- 1 – 1 fluid oz. eye/skin wash
- 1 first aid guide
- 10 - 1/32 oz. hand sanitizers
- 4 pair medical exam gloves
- 2 – 2"x4 yd. roller bandages
- 1 pair scissors
- 1 splint
- 1 tourniquet
- 4 – 3"x3" sterile pads
- 4 – 5"x9" trauma pads
- 2 triangular bandages

C. Eye Wash Stations

1. Eyewash stations will be located in any work areas that present a risk to an eye injury
   a. Concrete or Grout mixing
   b. Chemical exposure
2. All employees will be trained on the locations of the eye wash stations and their proper use.
3. Eyes will be flushed for a minimum of 15 minutes in the event of chemical exposure and medical assistance will be sought if necessary.

D. Training

1. Employees shall be trained in the First Aid program at least annually.
2. Training shall cover:
   a. Location(s) of first aid kit(s), as well as how and when to use such supplies
   b. Interacting with the local EMS system
   c. PPE with regard to providing first aid treatment
   d. The effects of stress, fear of infection, panic; how they interfere with performance; and what to do to overcome these barriers to action
   e. Assessing the scene and victim(s)
   f. Response to non-life threatening emergencies
      - Wounds
      - Burns
      - Temperature extremes
      - Musculoskeletal injuries
      - Eye injuries
      - Mouth/Tooth injuries
      - Bites & Stings
   g. Response to life threatening emergencies

      For incidents requiring more than on-site first aid, refer to the chapter titled "Emergency & Incident Management" of this manual.

Safety Specifics – **Hand & Power Tools (29 CFR 1926.301)**

A. Hand Tools & Equipment

1. Any tool or piece of equipment that is identified as unsafe will be tagged/locked to prevent use, will be rendered inoperable, or shall be physically removed from its place of operation.
2. All tools and equipment (both, company and employee-owned) used by employees in workplace will be in good condition.
3. Hand tools such as chisels, punches, etc., which develop mushroomed heads during use will be reconditioned or replaced as necessary.
4. Broken or fractured handles on hammers, axes and similar equipment shall be replaced immediately.
5. Worn or bent wrenches will be replaced.
6. Handles used on files and similar tools will be appropriate and in good condition.
7. Employees will be trained regarding the hazards caused by faulty or improper use of tools.
8. Safety glasses, face shields, etc., will be used while using hand tools or equipment that might produce flying materials or be subject to breakage.
9. Jacks will be checked periodically to assure they are in good operating condition.
10. Tool cutting edges will be kept sharp so the tool will move smoothly without binding or skipping.
11. Eye and face protection will be used when driving hardened or tempered nails.

B. Portable (Power Operated) Tools and Equipment

1. Any power operated tool or piece of equipment that is identified as unsafe will be tagged/locked to prevent use, will be rendered inoperable, or shall be physically removed from its place of operation.
2. Grinders, saws, and similar equipment will be provided with appropriate safety guards.
3. Power tools will be used with the correct shield, guard, or attachment, recommended by the manufacturer.
4. Portable circular saws will be equipped with guards above and below the base shoe.
5. Rotating or moving parts of equipment will be guarded to prevent physical contact.
6. Cord-connected, electronically operated tools and equipment will be effectively grounded or of the approved double insulated type.
7. Effective guards shall be in place over belts, pulleys, chains, sprockets, on equipment such as concrete mixers, air compressors, etc.
8. Portable fans will be provided with full guards or screens having openings ½ inch or less.
9. Ground-fault circuit interrupters shall be provided on all temporary electrical 15 and 20- ampere circuits, used during periods of construction.
10. Pneumatic and hydraulic hoses on power-operated tools will be checked regularly for deterioration or damage.
11. Power cords will not be used to lie or lower portable electric tools.
12. All electrical cords will be kept clear from where vehicles might drive over them.
13. Table saws will be equipped with hood guards over the blade above the table, which will automatically adjust to the thickness and remain in contact with the material being cut.

C. Abrasive Wheel Equipment – Grinders

1. Any grinder that is identified as unsafe will be tagged/locked to prevent use, will be rendered inoperable, or shall be physically removed from its place of operation.
2. The work rest used will be kept adjusted to within 1/8 inch of the wheel.
3. The adjustable tongue on the topside of the grinder will be used and kept adjusted to within ¼ inch of the wheel.
4. Side guards will cover the spindle, nut and flange and 75 percent of the wheel diameter.
5. Bench and pedestal grinders will be permanently mounted.
6. Goggles or face shields will always be worn when grinding.
7. The maximum RPM rating of each abrasive wheel will be compatible with the RPM rating of the grinder motor.
8. Fixed or permanently mounted grinders will be connected to their electrical supply system with metallic conduit or other permanent wiring method.
9. Each grinder will have an individual on and off control switch.
10. Each electrically operated grinder will be effectively grounded.
11. When abrasive wheels are mounted, they will be visually inspected and ring tested.
12. Dust collectors and powered exhausts will be provided on grinders used in operations that produce large amounts of dust.
13. Splashguards will be mounted on grinders that use coolant to prevent the coolant from reaching employees.

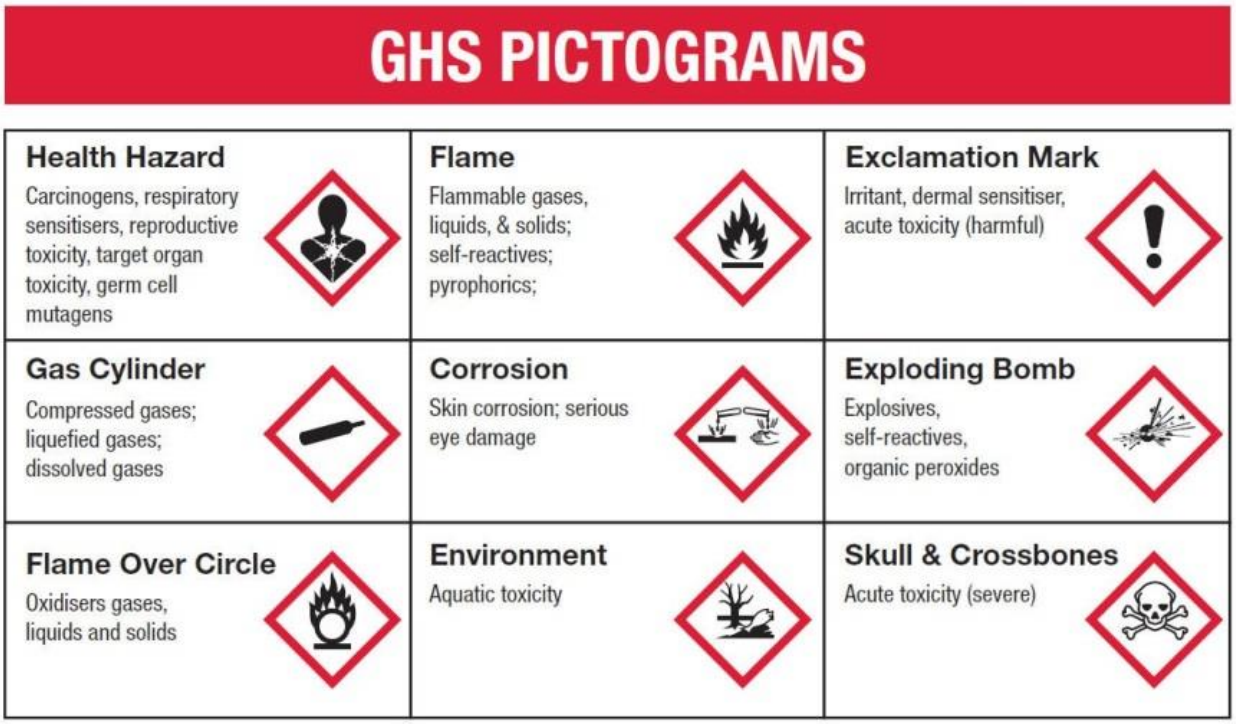
D. Powder-Actuated Tools

1. Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.
2. The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
3. Any tool found not in proper working order, or that develops a defect during use, shall be immediately removed from service and not used until properly repaired.
4. Personal protective equipment shall be in accordance with Subpart E of this part.
5. 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.
6. Loaded tools shall not be left unattended.
7. 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.
8. Driving into materials easily penetrated 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.
9. No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.
10. Tools shall not be used in an explosive or flammable atmosphere.
11. All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

Safety Specifics – **Hazard Communications & I.D. (29 CFR 1926.59)**

A. Container Labeling

1. The company will verify that all containers received for use will be clearly labeled by the manufacturer with the following:
   a. Name, address and telephone number of the manufacturer
   b. Product identifier
   c. Signal word
   d. Hazard statement(s)
   e. Precautionary Statement(s)
   f. GHS Pictogram(s)
2. Existing labels will not be removed or defaced on incoming containers unless containers are to be immediately marked with required information.
3. All materials on site are to be stored in their original container with the label attached.
4. Any material with a label missing or illegible shall be reported to the supervisor immediately for proper labeling.
5. All labels **must** include pictograms included in the Global Harmonization System (GHS). The pictograms found on all labeling must be according to the current requirements.




6. Workplace Labels
   a. Employers have the option to create their own workplace labels. They can either provide all of the required information that is on the label from the chemical manufacturer or, the product identifier and words, pictures, symbol, or a combination thereof, which, in combination with other information immediately available to employees, provide specific information regarding the hazards of the chemicals.
   b. If an employer has an in-plant or workplace system of labeling that meets the requirements of HazCom 1994, the employer may continue to use this system in the workplace as long as this system, in conjunction with other information immediately

available to the employees, provides the employees with the information on all of the health and physical hazards of the hazardous chemical.

(A.) This workplace labeling system may include signs, placards, process sheets, batch tickets, operating procedures, or other such written materials to identify hazardous chemicals.

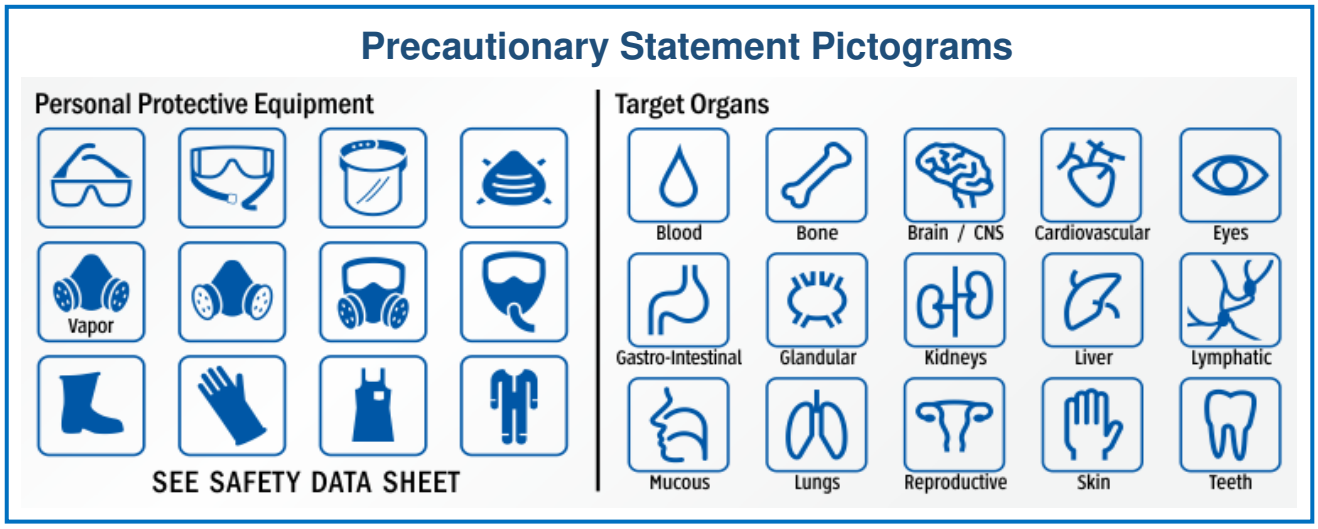
(B.) Any of these labeling methods or a combination thereof may be used instead of a label from the manufacturer, importer or distributer as long as the employees have immediate access to all of the information about the hazards of the chemical.

c. Workplace labels must be in English. Other languages may be added to the label if applicable.

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

e. Employers may use additional instructional or precautionary symbols that are not included in OSHA's HCS pictograms on the workplace labels.

(A.) An example of an instructional or precautionary pictogram is a person with goggles, denoting that goggles must be worn while handling the given chemical. Including both types of pictograms on workplace labels is acceptable.




f. Employers may continue to use rating systems such as National Fire Protection Association (NFPA) diamonds or HMIS requirements for workplace labels as long as they are consistent with the requirements of the Hazard Communication Standard and the employees have immediate access to the specific hazard information as discussed above.

(A.) An employer using NFPA or HMIS labeling must, through training, ensure that its employees are fully aware of the hazards of the chemicals used.

B. Safety Data Sheets (SDS)

1. Any product having a hazardous warning on its label requires a SDS.
2. The manufacturer, distributor, or vendor shall provide the SDS for the hazardous product.
3. All SDS shall be forwarded to the Project Manager and reviewed by the Job Superintendent and Subcontractor using the product to determine safe work practices and personal protection, as needed. The SDS will be maintained and keep accessible by the subcontractor on site.

4. The SDS must provide the 16 sections listed:
    - Identification
    - Hazard(s) identification
    - Composition/information on ingredients
    - First-aid measures
    - Fire-fighting measures
    - Accidental release measures
    - Handling and storage
    - Exposure control/personal protection
    - Physical and chemical properties
    - Stability and reactivity
    - Toxicology information
    - Ecological information
    - Disposal Consideration
    - Transport information
    - Regulatory information
    - Other information

C. Employee Training and Information

1. The Subcontractors will provide training to their employees when hired and routinely thereafter on the hazardous nature of chemical products. Training will include:
2. The Hazard Communication Policy
3. Chemicals present in their workplace operations
4. Physical and health effects of the hazardous chemicals
5. Appropriate work practices and controls when using chemicals.
6. Emergency and first-aid procedures
7. How to read labels and review an SDS to obtain appropriate hazard information
8. Location of the SDS file and written hazard communications program

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Safety Specifics – **Heat & Cold Stress (General Duty Clause; NIOSH)**

A. Assignment of Responsibilities

1. Management Responsibilities
    a. Maintain, review and update the Heat and Cold Stress Program as needed.
    b. Provide monitoring (upon request) and assist employees with the development of procedures to minimize the adverse effects of heat and cold stress in the workplace.
    c. Provide training to employees affected by heat and cold.
    d. Train employees to administer proper first aid on heat- and cold-induced injuries or illnesses as well as emergency response procedures.
2. Supervisor Responsibilities
    a. Review and comply with the provisions outlined in this program.
    b. Ensure all employees are properly trained before working in extreme temperature conditions.
    c. Assess the day-to-day heat or cold stresses on employees.
    d. Assess employees work load and assigning work and rest schedules as needed.
    e. Take personal factors into consideration before assigning a task where there is a possibility of a heat related illness occurring.
    f. Ensure all employees have the appropriate personal protective equipment (PPE) prior to working in extreme temperature conditions.
3. Employee Responsibilities
    a. Review and comply with the provisions outlined in this program, including PPE use.
    b. Complete training before working in extreme temperature conditions and be familiar with the signs and symptoms of heat and cold weather hazards.
    c. Report heat and cold stress concerns to their supervisor.

B. Heat Related Illnesses: Signs, Prevention & Treatment

1. While working in hot weather conditions, the human body may not be able to maintain a normal temperature just by sweating. If this happens, heat-related illnesses may occur. The physical factors which contribute to this condition shall be considered prior to performing any tasks in hot weather.
2. Common Health Problems - Heat
    a. Heat stroke – This is the most serious heat related effect. Heat stroke occurs when the body temperature increases above 104 - 106 F. Signs and symptoms of heat stroke are confusion, loss of consciousness and lack of perspiration. This condition must be treated as a medical emergency and the employee must receive immediate medical attention.
    b. Heat exhaustion – Signs and symptoms of heat exhaustion include headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy perspiration and a temperature 104 or greater. Employees experiencing heat exhaustion shall be moved to a cool area, given fluids to drink and given cold compresses for their head, face and neck. Employees shall also be taken to a clinic or emergency room to be monitored by medical personnel.
    c. Heat cramps – Signs and symptoms of heat cramps include muscle pains usually caused by the loss of body salts/fluids. Employees shall replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g. Gatorade) every 15 to 20 minutes.

d. Heat rash – Heat rash is caused by excessive perspiration and looks like a red cluster of pimples or small blisters. Heat rash usually appears on the neck, upper chest, in the groin, under the breasts and in elbow creases. Treatment for heat rash is to provide a cooler, less humid environment.

e. Dehydration – Dehydration is a major factor in most heat disorders. Signs and symptoms of dehydration include increasing thirst, dry mouth, weakness or light-headedness (particularly if worse upon standing), and a darkening of the urine or a decrease in urination. Dehydration can be reversed or put back in balance by drinking fluids that contain electrolytes that are lost during work related activities. Avoid caffeinated drinks.

3. Prevention methods - Heat

a. Acclimation – Acclimation is a process by which the physical processes of an employee's body adjusts to the environment over a period of time. Based on data obtained from OSHA, this process usually takes five to seven days. This process could take up to three weeks depending on the individual and their work environment. According to the American Industrial Hygiene Association, the process requires a consistent work level for at least two hours each day during the acclimation period in order for an employee to become acclimatized..

b. Engineering Controls – For employees working indoors, the best way to prevent heat-related illness is to make the work environment cooler. Where and if possible, use air conditioning to cool the work area. Alternatively, increase the general ventilation as much as possible by opening windows or doors. When available, use cooling fans to aid in increasing ventilation.

c. Safe Work Practices – For employees working outdoors or working indoors without air conditioning or ventilation, take scheduled breaks in cool areas. Ensure there is plenty of cool, potable drinking water and take water breaks as needed. Employees shall always be provided with access to shaded area. Immediately report any problems to a supervisor. Supervisors shall consider scheduling the hottest work for the coolest part of day, assigning extra employees to high demand tasks, and using work-saving devices (e.g. power tools, hoists or lifting aids) to reduce the body's work load. All employees shall watch out for the safety of their coworkers.

**Work / Rest and Water Consumption Table**

*Applies to average sized, heat acclimated person wearing long sleeved shirt and pants or cloth overalls*

*Revised June 12, 2010 – Supersedes all previous versions*

| Easy Work | Moderate Work | Hard Work |
|---|---|---|
| • Walking/Working on hard surface at 2.5 mph with < 30lb load | • Walking/Working on loose sand, water, reeds at 2.5 mph with minimal load<br>• Walking/Working on hard surface at 3.5 mph with < 40lb load | • Walking/Working on hard surface at 3.5 mph, ≥ 40lb load<br>• Walking/Working on loose sand at 2.5 mph with minimal load<br>• Wearing protective coveralls (ie: Tyvek) and/or respirator |

| Heat Category | Easy Work | | Moderate Work | | Hard Work | |
|---|---|---|---|---|---|---|
| | Work/Rest (min) | Water Intake (qt/hr) | Work/Rest (min) | Water Intake (qt/hr) | Work/Rest (min) | Water Intake (qt/hr) |
| 1 White Flag | NL | ½ | NL | ¾ | 40/20 min | ¾ |
| 2 Green Flag | NL | ½ | 50/10 min | ¾ | 30/30 min | 1 |
| 3 Yellow Flag | NL | ¾ | 40/20 min | ¾ | 30/30 min | 1 |
| 4 Red Flag | NL | ¾ | 30/30 min | ¾ | 20/40 min | 1 |
| 5 Black Flag | 50/10 min | 1 | 20/40 min | 1 | 10/50 min | 1 |

- The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ qt/hr)
- NL = no limit to work time per hour
- Rest = minimal physical activity (sitting or standing) accomplished while in the shade
- ***CAUTION: Hourly fluid intake should not exceed 1-½ quarts. Daily fluid intake should not exceed 12 quarts***
- Operational requirements should be considered in the application of this heat management tool.

C. Heat Index – The Heat Index is a single numeric value that uses both temperature and humidity to inform the public on how the weather outdoors "feels". The higher the Heat Index, the hotter the weather feels. OSHA has used the Heat Index to assign protective measures for workers as the Heat Index increases. These protective measures may reduce the likelihood of heat related illnesses.

(A.) The heat index is a simple tool and a useful guide for employers/employees making decisions about protecting employees in hot weather. It does not account for certain conditions that contribute additional risk, such as physical exertion. Consider taking the steps at the next highest risk level to protect employees from the added risks posed by:

(1.) Working in the direct sun (can add up to 15°F to the heat index value)

(2.) Wearing heavy clothing or protective gear

(B.) Under most circumstances, fluid intake shall not exceed 6 cups per hour or 12 quarts per day. This makes it particularly important to reduce work rates, reschedule work, or enforce work/rest schedules.

**Heat index Chart**

***How To Use:*** *Find the temperature on the left-hand side, then move to the right and find the relative humidity value on the top. Where the two columns meet is the Heat Index Value.*

***Add up to 15° in direct sun with no available shade***

| TEMPERATURE °F \ RELATIVE HUMIDITY % | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 140 | 125 | | | | | | | | | | | | | | | | | | | | |
| 135 | 120 | 128 | | | | | | | | | | | | | | | | | | | |
| 130 | 117 | 122 | 131 | | | | | | | | | | | | | | | | | | |
| 125 | 111 | 116 | 123 | 131 | 141 | | | | | | | | | | | | | | | | |
| 120 | 107 | 111 | 116 | 123 | 130 | 139 | 145 | | | | | | | | | | | | | | |
| 115 | 103 | 107 | 111 | 115 | 120 | 127 | 135 | 143 | 151 | | | | | | | | | | | | |
| 110 | 99 | 102 | 105 | 108 | 112 | 117 | 123 | 130 | 137 | 143 | 150 | | | | | | | | | | |
| 105 | 95 | 97 | 100 | 102 | 105 | 109 | 113 | 118 | 123 | 129 | 135 | 142 | 149 | | | | | | | | |
| 100 | 91 | 93 | 95 | 97 | 99 | 101 | 104 | 107 | 110 | 115 | 120 | 126 | 132 | 138 | 144 | | | | | | |
| 95 | 87 | 88 | 90 | 91 | 93 | 94 | 96 | 98 | 101 | 104 | 107 | 110 | 114 | 119 | 124 | 130 | 136 | | | | |
| 90 | 83 | 84 | 85 | 86 | 87 | 88 | 90 | 91 | 93 | 95 | 96 | 98 | 100 | 102 | 106 | 109 | 113 | 117 | 122 | | |
| 85 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 93 | 95 | 97 | 99 | 102 | 105 | 108 |
| 80 | 73 | 74 | 75 | 76 | 77 | 77 | 78 | 79 | 79 | 80 | 81 | 81 | 82 | 83 | 85 | 86 | 86 | 87 | 88 | 89 | 91 |
| 75 | 69 | 69 | 70 | 71 | 72 | 72 | 73 | 73 | 74 | 74 | 75 | 75 | 76 | 76 | 77 | 77 | 78 | 78 | 79 | 79 | 80 |
| 70 | 64 | 64 | 65 | 65 | 66 | 66 | 67 | 67 | 68 | 68 | 69 | 69 | 70 | 70 | 70 | 71 | 71 | 71 | 71 | 71 | 72 |

*Revised June 12, 2010 – Supersedes all previous versions*

| Heat Category/Flag Color | 1 White Flag Low Risk | 2 Green Flag Caution | 3 Yellow Flag Extreme Caution | 4 Red Flag At Risk | 5 Black Flag High Risk |
|---|---|---|---|---|---|

D. Cold Related Illnesses: Signs, Prevention & Treatment

1. During cold weather, an employee's body will use energy to maintain a normal internal body temperature. This will result in a shift of blood flow from employee's extremities (hands, feet and legs) and outer skin to the employee's core (chest and abdomen). If this happens, cold-related illnesses and injuries may occur if exposed to cold conditions for an extended period of time.
2. Common health problems - Cold
   a. Hypothermia – Hypothermia is a potentially serious health condition. Hypothermia occurs when body heat is lost faster than it can be replaced. When the core body temperature

drops to approximately 95°F, the onset of symptoms normally begins. The employee may begin to shiver, lose coordination, have slurred speech, and fumble with items in the hand. The employee's skin will likely be pale and cold. As the body temperature continues to fall these symptoms will worsen and shivering will stop. Once the body temperature falls to around 85°F severe hypothermia will develop and the person may become unconscious, and at 78°F, vital organs may begin to fail. Treatment depends on the severity of the hypothermia. For cases of mild hypothermia move to warm area and stay active. Remove wet clothes and replace with dry clothes or blankets, cover the head. To promote metabolism and assist in raising internal core temperature drink a warm (not hot) sugary drink. Avoid drinks with caffeine. For more severe cases do all the above, plus contact emergency medical personnel (Call 911 for an ambulance), cover all extremities completely, place very warm objects, such as hot packs or water bottles on the victim's head, neck, chest and groin. Arms and legs shall be warmed last. In cases of severe hypothermia, treat the employee very gently and do not apply external heat to re-warm. Hospital treatment is required.

b. Frostbite – Frostbite occurs when the skin actually freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite usually occurs when the temperatures are 30° F or lower, wind chill factors can allow frostbite to occur in above freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. The affected body part will be cold, tingling, stinging or aching followed by numbness. Skin color turns red, then purple, then white, and is cold to the touch. There may be blisters in severe cases. Do not rub the area to warm it. Wrap the area in a soft cloth, move the employee to a warm area, and contact medical personnel. Do not leave the employee alone. If help is delayed, immerse in warm (maximum 105 °F), not hot, water. Do not pour water directly on affected part. If there is a chance that the affected part will get cold again do not warm. Repeated heating and cooling of the skin may cause severe tissue damage.

c. Dehydration – It is easy to become dehydrated during cold weather. Signs of dehydration include increasing thirst, dry mouth, weakness or light-headedness (particularly if worse upon standing), and a darkening of the urine or a decrease in urination. Dehydration can be reversed or put back in balance by drinking fluids that contain electrolytes (i.e. Gatorade) that are lost during work related activities. Avoid caffeinated drinks

3. Prevention method - Cold

a. Acclimation – Employees exposed to the cold shall be physically fit, without any circulatory, metabolic, or neurologic diseases that may place them at increased risk for hypothermia. A new employee shall not be required to work in the cold full time during the first days of employment until they become adjusted to the working conditions and required protective clothing. New employees shall be introduced to the work schedule slowly and be trained accordingly.

b. Engineering Controls – For employees working indoors, the best way to prevent cold-related illness is to make the work environment warmer. Where and if possible, use heaters to warm the work area. Alternatively, decrease the general ventilation as much as possible by closing windows or doors.

c. Safe Work Practices – For employees working outdoors or working indoors without heat, take scheduled breaks in warm areas. If available, use wind barricades to block the wind from the employees. Ensure there is plenty of water to drink and take water breaks as needed. Immediately report any problems to a supervisor. Supervisors shall consider scheduling the most work for the warmest part of day, assigning extra employees to high demand tasks that will require longer periods in cold areas. All employees shall watch out for the safety of their coworkers. All employees will be informed of dangers associated with working around unstable snow and ice build-ups. All regularly used walkways and travelways shall be sanded, salted, or cleared of snow and ice as soon as practicable.

## Warm-Up and Break Chart – 4 hour shift

*Schedule applies to any 4-hour work period with moderate to heavy work activity; with warm up periods of ten (10) minutes in a warm location and with an extended break (ie: lunch) in a warm location at the end of the 4-hour work period.*

| Air Temperature -Sunny Sky | | No Noticeable Wind | | 5 mph Wind | | 10 mph Wind | | 15 mph Wind | | 20 mph Wind | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| °F (approximate) | °C (approximate) | Maximum Work Period | # of Breaks | Maximum Work Period | # of Breaks | Maximum Work Period | # of Breaks | Maximum Work Period | # of Breaks | Maximum Work Period | # of Breaks |
| -15 to -19 | -26 to -28 | | 1 Normal | | 1 Normal | 75 min. | 2 | 55 min. | 3 | 40 min. | 4 |
| -20 to -24 | -29 to -31 | | 1 Normal | 75 min. | 2 | 55 min. | 3 | 40 min. | 4 | 30 min. | 5 |
| -25 to -29 | -32 to -34 | 75 min. | 2 | 55 min. | 3 | 40 min. | 4 | 30 min. | 5 | Non-Emergency work should cease | |
| -30 to -34 | -35 to -37 | 55 min. | 3 | 40 min. | 4 | 30 min. | 5 | Non-Emergency work should cease | | | |
| -35 to -39 | -38 to -39 | 40 min. | 4 | 30 min. | 5 | Non-Emergency work should cease | | | | | |
| -40 to -44 | -40 to -42 | 30 min. | 5 | Non-Emergency work should cease | | | | | | | |
| -45 & below | -43 & below | Non-Emergency work should cease | | | | | | | | | |

d. Wind Chill -. Wind Chill is the term used to describe the rate of heat loss from the human body, resulting from the combined effect of low air temperature, and wind speed.

(A.) The Wind Chill Temperature is a single value that takes both air temperature, and wind speed into account.

(B.) For example, when the air temperature is 40°F, and the wind speed is 35mph, the wind chill temperature is 28°F; this measurement is the actual effect of the environmental cold on the exposed skin.

## Wind Chill Chart

**Wind Chill (°F) = 35.74 + 0.6215T – 35.75($V^{0.16}$) + 0.4275T($V^{0.16}$)**

T=Air Temperature ( F) V=Wind Speed (m/hr)

| WIND m/hr | TEMPERATURE F | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 40 | 35 | 30 | 25 | 20 | 15 | 10 | 5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 | -40 | -45 |
| 5 | 36 | 31 | 25 | 19 | 13 | 7 | 1 | -5 | -11 | -16 | -22 | -28 | -34 | -40 | -46 | -52 | -57 | -63 |
| 10 | 34 | 27 | 21 | 15 | 9 | 3 | -4 | -10 | -16 | -22 | -28 | -35 | -41 | -47 | -53 | -59 | -66 | -72 |
| 15 | 32 | 25 | 19 | 13 | 6 | 0 | -7 | -13 | -19 | -26 | -32 | -39 | -45 | -51 | -58 | -64 | -71 | -77 |
| 20 | 30 | 24 | 17 | 11 | 4 | -2 | -9 | -15 | -22 | -29 | -35 | -42 | -48 | -55 | -61 | -68 | -74 | -81 |
| 25 | 29 | 23 | 16 | 9 | 3 | -4 | -11 | -17 | -24 | -31 | -37 | -44 | -51 | -58 | -64 | -71 | -78 | -84 |
| 30 | 28 | 22 | 15 | 8 | 1 | -5 | -12 | -19 | -26 | -33 | -39 | -46 | -53 | -60 | -67 | -73 | -80 | -87 |
| 35 | 28 | 21 | 14 | 7 | 0 | -7 | -14 | -21 | -27 | -34 | -41 | -48 | -55 | -62 | -69 | -76 | -82 | -89 |
| 40 | 27 | 20 | 13 | 6 | -1 | -8- | -15 | -22 | -29 | -36 | -43 | -50 | -57 | -64 | -71 | -78 | -84 | -91 |
| 45 | 26 | 19 | 12 | 5 | -2 | -9 | -16 | -23 | -30 | -37 | -44 | -51 | -58 | -65 | -72 | -79 | -86 | -93 |
| 50 | 26 | 19 | 12 | 4 | -3 | -10 | -17 | -24 | -31 | -38 | -45 | -52 | -60 | -67 | -74 | -81 | -88 | -95 |
| 55 | 25 | 18 | 11 | 4 | -3 | -11 | -18 | -25 | -32 | -39 | -46 | -54 | -61 | -68 | -75 | -82 | -89 | -97 |
| 60 | 25 | 17 | 10 | 3 | -4 | -11 | -19 | -26 | -33 | -40 | -48 | -55 | -62 | -69 | -76 | -84 | -91 | -98 |

Frostbite Times: 30 Min | 10 Min | 5 Min

*Revised Nov. 1, 2001– Supersedes all previous versions*

e. Personal Protective Equipment (PPE) – PPE is an important factor in preventing cold stress related illnesses and injuries. Cold weather supplies will be regularly inspected and restocked when necessary. Employees shall adhere to the following recommendations when dressing for work in a cold environment:

(A.) Wear at least three layers of clothing; an inner layer of wool, silk or synthetic to wick moisture away from the body; a middle layer of wool or synthetic to provide insulation even when wet; an outer wind and rain protection layer that allows some ventilation to prevent overheating.

(B.) Wear a hat or hood; up to 40% of body heat can be lost when the head is left exposed.

(C.) Wear insulated boots or other footwear.

(D.) Do not wear tight clothing; loose clothing provides better ventilation.

(E.) Keep a change of clothing available in case work clothes become wet.

f. All employees shall be under constant protective observation by a co-worker or supervisor for cold weather symptoms.

E. Training

1. Supervisors shall be trained in prevention measures for heat and cold related illnesses and well as emergency response procedures.
2. All employees shall receive initial and annual training regarding the health effects of Heat and/or Cold Stress prior to working in such conditions.
3. All workers shall be trained to administer proper first aid treatment on cold induced injuries or illnesses.
4. The company can provide heat or cold stress training upon request.
5. All training records shall be maintained in the employees personnel file and maintained by the supervisor. Training records are maintained in the office for training programs.

Safety Specifics – **Housekeeping**

A. General

1. While OSHA regulations require that each working surface be cleared of debris, including solid and liquid waste, at the end of each workshift or job, whichever occurs first, to fully realize the benefit of a clean workplace, it is recommended that good housekeeping be maintained throughout the course of the job and workday.
2. Good Housekeeping is evidenced by (but not limited to):
    a. Floors free from grease and oil spillage
    b. Properly identified passageways
    c. Unobstructed accesses and exits
    d. Neat and orderly machinery and equipment
    e. Well-nested hoses and cords
    f. Properly stored materials
    g. Removal of excess waste material or debris from the working area
    h. Walkways free from ice and snow
    i. Surfaces, including elevated locations, free from accumulated dust
    j. Adequate lighting
3. Each employee shall follow a daily a daily cleanup to including the following:
    a. Keep floors, stairways, aisles, and other passageways clear of tools, equipment, trash, and other materials
    b. Close drawers
    c. Put tools away when they’re not in use, and cover any sharp edges
    d. Stack materials carefully so they won’t fall or block sprinkler access
    e. Clean up all spills immediately and properly, or call someone who can
    f. Report any loose or broken flooring or any broken equipment
    g. Keep food and beverages away from the work area
    h. Properly dispose of all trash
    i. Keep paper and other combustibles away from lights and electrical equipment
    j. Prevent dirt or grease buildup on machinery and equipment
    k. Keep containers of flammables closed when not in use
    l. Don’t place tools or equipment on the edges of shelves or tables

B. Materials, Waste, and Scrap

1. During the course of construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
2. Materials shall be stored in an orderly manner. Work site storage areas and walkways must be maintained free of dangerous depressions, obstructions, and debris.
3. The entire work site shall be orderly and debris must be disposed of in dumpsters, or off site, in accordance with all EPA regulations.

4. Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal.
5. Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse.
    a. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers.
    b. Garbage and other waste shall be disposed of at frequent and regular intervals.

C. Walking Working Surfaces

1. Surface conditions
    a. All places of employment, passageways, storerooms, service rooms, and walking-working surfaces are kept in a clean, orderly, and sanitary condition.
    b. The floor of each workroom is maintained in a clean and, to the extent feasible, in a dry condition. When wet processes are used, drainage must be maintained and, to the extent feasible, dry standing places, such as false floors, platforms, and mats must be provided.
    c. Walking-working surfaces are maintained free of hazards such as sharp or protruding objects, loose boards, corrosion, leaks, spills, snow, and ice.
2. Loads

    The employer must ensure that each walking-working surface can support the maximum intended load for that surface.
3. Access and egress

    The employer must provide, and ensure each employee uses, a safe means of access and egress to and from walking-working surfaces.
4. Inspection, maintenance, and repair
    a. The employer must ensure:
    b. Walking-working surfaces are inspected, regularly and as necessary, and maintained in a safe condition;
    c. Hazardous conditions on walking/working surfaces are corrected or repaired before an employee uses the walking-working surface again. If the correction or repair cannot be made immediately, the hazard must be guarded to prevent employees from using the walking-working surface until the hazard is corrected or repaired; and
    d. When any correction or repair involves the structural integrity of the walking-working surface, a qualified person performs or supervises the correction or repair.

D. Construction

1. During the course of construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
2. Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal.
3. Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse.
    a. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers.

b. Garbage and other waste shall be disposed of at frequent and regular intervals.

E. Chemicals

1. Chemicals or hazardous liquids shall be stored and secured properly.
2. Each container should be properly labeled for easy and accurate identification.
3. The workplace must provide a hazardous communication program which includes safety data sheets, training and proper warning labels.

F. Pathogens

1. All pathogens must be treated as if they are contaminated with infectious diseases.
2. An exposure control plan shall be in place that explains the strategies and procedures used to control and contain the pathogens.
3. Employees must be trained in the plan, and the plan must be reviewed and updated at least once a year.
4. The workplace must provide employees with protective gear and sanitizing chemicals to clean the pathogenic area.
5. The facility must provide an easily accessible hand-washing station stocked with antiseptic cleaner and paper towels.

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Safety Specifics – **Ladders & Stairways (29 CFR 1926.1050)**

A. Administrative Duties

1. The Project Manager is responsible for developing and maintaining this written Stairway and Ladder Safety Plan. This person is solely responsible for all facets of the plan and has full authority to make necessary decisions to ensure the success of this plan. Appropriate training and experience that is commensurate with the complexity of the plan, to administer or oversee our stairway and ladder safety program and conduct the required evaluations, also qualify the Project Manager.

B. Fixed Industrial Stairs

1. Fixed industrial stairs are provided in our facility or on job sits in the following circumstances:
2. For access from one structure level to another where operations necessitate regular travel between levels,
3. For access to operating platforms at any equipment which requires attention routinely during operations, and
4. Where access to elevations is daily or at each shift for such purposes as gauging, inspection, regular maintenance, etc., where such work may expose employees to acids, caustics, gases, or other harmful substances, or for which purposes the carrying of tools or equipment by hand is normally required.
5. All fixed industrial stairs are provided according to OSHA specifications for stair strength, stair width, angle of stairway rise, stair treads, stairway platforms, railings and handrails, and vertical clearance.

C. Portable Ladders

1. All portable ladders, including job built ladders, provided by the company under normal conditions of usage.
    a. When positioned for use, all ladder rungs, cleats, and steps shall be parallel to the ground and uniformly spaced.
    b. Ladders shall not be loaded beyond the maximum intended load for which they were built, or beyond the manufacturer's capacity.
2. For portable wood ladders, all wood parts shall be visually inspected before use and be:
    a. Free from sharp edges and splinters.
    b. Sound and free from shake, wane, compression failures, decay, or other irregularities.
3. Portable metal ladders chose for use by the company are:
    a. Designed without structural defects or accident hazards such as sharp edges, burrs, etc.
    b. Of sufficient strength to meet the test requirements.
    c. Protected against corrosion unless inherently corrosion-resistant.

D. Work Practices

1. When ascending or descending, the climber must face the ladder.
2. Ladders are only used for the purpose they were intended and designed for.

3. Portable ladders are designed as a one-man working ladder based on a 200 pound load and will be used accordingly. Ladders shall not be loaded beyond the manufacturer's maximum intended load.
4. Portable rung and cleat ladders will be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support – 4:1 ratio).
5. The ladder will be so placed as to prevent slipping, or it will be lashed, or held in position. The ladder base section must be placed on a stable level surface with a secure footing.
6. Employees must not carry anything in hands that could cause injury in fall.
7. Employees will only use portable rung ladders with non-slip bases when there is a hazard of slipping. However, nonslip bases are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used on oily, metal, concrete, or slippery surfaces.
8. The top of the ladder must extend 3 feet above the upper landing and placed with the two rails supported, unless equipped with single support attachment.
9. On two-section extension ladders, the minimum overlap for the two sections in use will be according to OSHA specifications.
10. Portable rung ladders with reinforced rails will be used only with the metal reinforcement on the underside.
11. The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.
12. Ladders will not be:
    a. Used in a horizontal position as platforms, runways, or scaffolds.
    b. Placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.
    c. Placed on boxes, barrels, or other unstable bases to obtain additional height.
    d. Tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.
    e. Use to gain access to a roof unless the top of the ladder extends at least 3 feet above the point of support, at eave, gutter, or roofline.
    f. Used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended, unless specifically recommended for use by the manufacturer.
13. More than one employee shall not use ladders at a time for which dimensions are specified or with ladder jacks and scaffold planks where use by more than one employee is anticipated.
14. Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment must not be used. Employees finding ladders with any of these conditions must report them to the Project Manager. Improvised repairs may not be made.
15. Ladders made by fastening cleats across a single rail will not be used.
16. Tops of the ordinary types of stepladders will not be used as steps.
17. Middle and top sections of sectional or window cleaner's ladders will not be used for bottom section unless the user equips them with safety shoes.

E. Inspections and Maintenance

1. Ladders will be inspected regularly and frequently to insure safety and serviceability.
2. Ladders will be maintained in good usable condition at all times.

3. The joint between the steps and side rails is kept tight, all hardware and fitting are securely attached, and the movable parts operate freely without binding or undue play.
4. Metal bearings of lock, wheels, pulleys, etc. will be frequently lubricated.
5. Frayed or badly worn rope will be replaced.
6. Safety feet and other auxiliary equipment will be kept in good condition to insure proper performance.
7. Ladders with defects will be withdrawn from service for repair or destruction and tagged or marked as Dangerous, Do Not Use.
8. If ladders tip over, our employee will:
    a. Inspect the ladder for side rail dents or bends, or excessively dented rungs;
    b. Check all rung-to-side-rail connections;
    c. Check hardware connections; and
    d. Check rivets for shear.
9. If ladders are exposed to oil and grease, equipment will be cleaned and kept free of oil, grease, or slippery materials.
10. Ladder inspection records shall be maintained by the Project Manager.

F. Fixed Ladders

1. Fixed ladders are provided according to OSHA specifications for design, clearance, and pitch.
2. All fixed ladders are maintained in a safe condition.
3. Fixed ladders are inspected regularly and frequently to insure safety and serviceability.

G. Training

For all employees who work on ladders and stairways, training is provided to enable each employee to recognize hazards associated with ladders and stairways and to use proper procedures to minimize the hazards.

H. Disciplinary Procedures

Constant awareness of and respect for stairway and ladder safety procedures and compliance with all safety rules are considered conditions of employment. Supervisors and individuals in the Safety and Personnel Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this stairway and ladder safety program.

I. Program Evaluation

1. Project Manager is responsible for evaluating and updating this written plan as necessary.
2. The evaluation will include a review of reported accidents, as well as near misses, to identify areas where additional safety measures need to be taken. A periodic review to determine the effectiveness of the program will also take place. This may include:
    a. A walk-through of the worksite, and
    b. Interviews with employees to determine whether they are familiar with the requirements of this program and if safety measures are being practiced.

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Safety Specifics – **Lockout/Tagout (29 CFR 1910.147, 1926.417)**

A. Overview

1. Energy Familiarity

   When an employee locks or tags equipment, that employee must be familiar with the types of energy the equipment uses (electrical; hydraulic; mechanical; pneumatic; air, steam, or water pressure; thermal; spring loaded; gravity; chemical; or nuclear) including types of stored energy that the machine uses. Each energy source must be isolated by closing valves, relieving trapped pressure, disconnecting circuits, or blocking/bleeding down lines

2. Use Lockout/Tagout when:

   a. Performing maintenance or servicing equipment

   b. An employee is required to remove or bypass a guard

   c. An employee is required to place any part of his/her body into an area of a machine or equipment where work is performed upon the material being processed (point of operation) or where a danger zone exists during the machine's operating cycle.

3. Lockout/Tagout Exceptions:

   a. When making minor tool changes and adjustments, and other minor servicing activities, which take place during normal operations.

      (A.) These activities must be routine, repetitive, and integral to the use of the equipment. However, this work must be performed using alternate measures to provide effective employee protection such as machine guarding.

   b. When working on cord and plug connected electrical equipment, which the exposure to a hazard is the unexpected startup of the equipment.

      (A.) That hazard will be controlled by unplugging the equipment from its energy source.

      (B.) The plug must be under the control of the employee performing the maintenance on the machine.

B. Rules for Lockout/Tagout

1. General

   a. A machine shut down for repair, cleaning, or inspection must have all power switched and locked in the "OFF" position by each employee working on that equipment.

   b. If the equipment cannot be locked out, utilize a tagout system.

      (A.) **Note:** After January 1990, whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machine or equipment shall be designed to accept a lockout device.

   c. If an employee will be exposed to the servicing or maintenance activities of an outside contractor/repair personnel, the employee must be informed of and comply with the contractor's/repair personnel's energy control procedures. The outside personnel must also be informed and given a copy of our Lockout/Tagout program and will use these procedures if they do not have their own.

2. Locks and Tags

   a. Lockout devices and tagout devices shall be singularly identified; shall be the only devices(s) used for controlling energy, and shall not be used for other purposes.

b. Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

c. Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

d. Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

e. Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.

f. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

g. Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all environment-tolerant nylon cable tie.

h. Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

i. Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: Do Not Start. Do Not Open. Do Not Close. Do Not Energize. Do Not Operate.

C. Mechanical Lockout/Tagout Procedure

1. Before servicing or performing maintenance on machinery or equipment, the authorized employee must follow this written procedure.

2. Preparation for Shutdown

a. Notify affected employee that Lockout/Tagout procedures are going to be used and the reason for procedure use.

b. The authorized employee will know the type(s) and magnitude(s) of energy; the hazards of the energy; and the method(s) to control the energy. If the authorized employee is uncertain of any of this information, the employee must review the energy control procedure for that piece of machinery or equipment.

c. Shut down the machine or equipment by normal stopping procedures (depress stop button, open toggle switch, etc.).

d. Tagout cannot be used if the machine or equipment is capable of being locked out. If the lockout is not possible, a tag must be securely fastened to each energy-isolating device to indicate that the machine or equipment may not be operated until the tag is removed. The employee who attaches the tag must verify that the machine or equipment has been turned off before starting work.

e. If Tagout is used, additional methods of preventing accidental energizing must be used if feasible (removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, removal of valve handle).

3. Applying Lockout/Tagout
    a. Apply locks and tags to each energy-isolating device, isolating energy sources. Tags must note the employee's name and the service date. Each employee must install a lock and tag no the equipment to be serviced.
    b. All stored and residual energy must be must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
    c. Verify that the main disconnect or circuit breaker cannot be moved. Press all start buttons and activating controls on equipment to make sure all power is disconnected.
    d. If it is possible that stored energy will re-accumulate to a hazardous level, the authorized employee will repeat the certification process until servicing or maintenance is completed.
4. Perform Work
    a. Avoid tasks that could reactivate the equipment.
    b. Do not bypass locks or tags when putting in new piping or wiring.
5. Removing Lockout/Tagout
    a. Remove all tools from the work area, reattach guards taken off, and make sure the machine or equipment is safe to operate.
    b. Inform all affected employees that lock(s) and tag(s) are being removed. Check to ensure all Employees are safely positioned or removed from the area.
    c. Verify controls are in neutral.
    d. Remove lock(s) and tag(s) and re-energize equipment.
    e. Notify affected employees that the servicing is completed and the machine or equipment is ready for use.

D. Electrical Lockout/Tagout Procedures

***All mechanical Lockout/Tagout procedures still apply plus the following***

1. Preparation for Shutdown
    a. Notify affected employee that Lockout/Tagout procedures are going to be used and the reason for procedure use.
    b. The authorized employee will know the type(s) and magnitude(s) of energy; the hazards of the energy; and the method(s) to control the energy. If the authorized employee is uncertain of any of this information, the employee must review the energy control procedure for that piece of machinery or equipment.
    c. Shut down the machine or equipment by normal stopping procedures (depress stop button, open toggle switch, etc.).
    d. Tagout cannot be used if the machine or equipment is capable of being locked out. If the lockout is not possible, a tag must be securely fastened to each energy-isolating device to indicate that the machine or equipment may not be operated until the tag is removed. The employee who attaches the tag must verify that the machine or equipment has been turned off before starting work.
    e. If Tagout is used, additional methods of preventing accidental energizing must be used if feasible (removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, removal of valve handle).

2. Shutdown of Machines or Equipment
    a. All sources of energy must be completely disconnected, including auxiliary power supplies (batteries, generators, etc.). Also dissipate any stored energy present (capacitors).
    b. Push button selector switches, interlocks, and other control devices may not be used as the sole means for isolating energy.
    c. Clear the work area of all unqualified personnel.
3. Applying Lockout/Tagout
    a. Lockout/Tagout every point where the equipment could be re-energized.
    b. If a lock cannot be used, use a tag, providing at least one safety precaution equivalent to a lock (removal of fuses, blocking switches, and removal of circuit breakers.)
    c. A qualified employee must verify that equipment is inoperable by attempting to restart it using equipment's on/off controls or by using test equipment (voltmeters, circuit testers, etc.).
4. Perform Work
    a. Avoid tasks that could reactivate the equipment.
    b. Do not bypass locks or tags when putting in new piping or wiring.
5. Removing Lockout/Tagout
    a. After electrical work is completed and before re-energizing equipment, a qualified employee must conduct tests, using test equipment, and make visual inspection to verify the following:
        (A.) That work is completed properly
        (B.) That there are no shorts or grounds
        (C.) That all tools, electrical jumpers and other such devices have been removed, so that the equipment may safely re-energized.
    b. Only the worker who applies the lock/tag is permitted to remove it. In an emergency, locks may be removed with the consent of a supervisor. The Supervisor must then inform the worker that the lock was removed before the worker comes back to work.
    c. After Lockout/Tagout is removed a qualified employee must conduct a thorough safety inspection of the work area, warn others to stay clear, and then energize the machine according to the prescribed sequence under the proper Lockout/Tagout procedures.

E. Special Situations

1. Temporarily reactivating machinery/equipment

    When reactivating equipment, you must remove unnecessary tools from the work area, make sure personnel is clear of equipment, remove lock(s)/tag(s), and energize & proceed with testing. As soon as energy is not needed, isolate equipment and reapply lock(s)/tag(s) following Applying Lockout/Tagout sequence (step 6-9).

2. Servicing by outside contractors/repair personnel

    If an employee will be exposed to the servicing or maintenance activities of an outside contractor or repair personnel, the employee must be informed of and comply with the outside contractor's/repair personnel's energy control procedures. The outside personnel must also be informed and given a copy of the company's Lockout/Tagout Program and will use these procedures if they do not have their own.

3. Group Lockout/Tagout Procedures
    a. If more than one person is servicing or maintaining a piece of equipment, each authorized employee will place a lock and tag on each energy-isolating device.
    b. A hasp will be used if the energy-isolating device cannot accept multiple locks and tags.
    c. The department supervisor will be responsible for ensuring compliance.

F. Shift Changes/Servicing lasting more than one shift
1. During shift or personnel changes, the departing employee servicing the equipment must notify the supervisor of such change.

   Only the person who applies the lock tag is permitted to remove it. In emergencies, locks may be removed with the consent of a Supervisor. The supervisor must then inform the worker that the lock/tag was removed and the reason for removal before that worker goes back to work.
2. The incoming employee will follow steps for Preparation for Shutdown and Applying Lockout/Tagout of the Lockout/Tagout procedure as outlined in sections E. 1-2 and/or F. 1-3 of this Special Emphasis Program.

   This must be done BEFORE the departing employee removes their lock and BEFORE incoming employee performs any work.
3. The departing employee will follow the Removing Lockout/Tagout sequence of the Lockout/Tagout procedure as outlined in sections E. 4 and/or F. 5 of this Special Emphasis Program.

   This must be done only AFTER the incoming employee has applied their lock

G. Compliance
1. Regulations
    a. All Employees are required to comply with the restrictions and limitations imposed upon them during the use of Lockout/Tagout. Non-compliance would be considered a serious violation in the discipline system.
    b. The authorized employees are required to perform the Lockout/Tagout in accordance with this procedure.
    c. In no case shall any employee remove another employee’s Lockout/Tagout device.
    d. All employees, upon observing a machine or piece of equipment which is locked out or tagged out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.
2. Verification/Inspection
    a. We shall conduct a periodic inspection of this energy control procedure at least annually to ensure that the procedure and the requirements of the Standard are being followed.
    b. An authorized employee other than the one(s) utilizing the energy control procedure being inspected shall perform the periodic inspection.
    c. The periodic inspection shall be conducted to correct any deviations or inadequacies identified.
    d. Where Lockout is used for energy control, the periodic inspection shall include a review between the inspector and each authorized employee of that employee’s responsibilities under the energy control procedure being inspected.

e. Where Tagout is used for energy control, the periodic inspection shall include a review between the inspector and each authorized and affected employee of that employee's responsibilities under the energy control procedure being inspected and the elements set forth in Section "Training and Communication" of this Plan.

f. The inspector shall certify that the periodic inspection has been performed. The written certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection. Copies of the certification shall be maintained by the inspector and the Human Resources Department.

H. Training & Communication

1. Training

   We shall provide training to ensure that the purpose and function of the energy control program are understood by all Employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

2. Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

3. Each affected employee shall be instructed in the purpose and use of the energy control procedure.

4. All other Employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

5. Where Tagout systems are used, employees shall be trained in the following limitations of tags:

   a. Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by lock.

   b. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

   c. Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area in order to be effective.

   d. Tags and their means of attachment must be made of materials, which will withstand the environmental conditions encountered in the workplace.

   e. Tags may evoke a false sense of security and their meaning needs to be understood as part of the overall energy control program.

   f. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

6. Retraining

   a. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedure.

   b. Additional retraining shall be conducted whenever a periodic inspection under Section "Compliance with Program" of this Plan reveals, or whenever our company has reason to

believe, that there are deviations from, or inadequacies in the employee's knowledge, or use of the energy control procedures.

c. The training shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

7. Certification
   a. We certify that employee training has been accomplished and is being kept up to date.
   b. The certification shall contain each employee's name and dates of training.
8. Authorized/Affected Employees
   a. Our employees that receive formal training as outlined under this program shall be designated Authorized Employees.
   b. Our employees that receive awareness training during initial employee orientation in regards to purpose, identification, and use of energy control procedures shall be designated as Affected Employees.

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Safety Specifics – **Musculoskeletal Disorders (MSDs) & Ergonomics**

A. Musculoskeletal Disorders (MSDs)

MSDs include cases where the nature of the injury or illness is pinched nerve; herniated disc; meniscus tear; sprains, strains, tears; hernia (traumatic and nontraumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud's syndrome or phenomenon; musculoskeletal system and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration.

B. Risk Factors

1. The risk of MSD injury depends on work positions and postures, how often the task is performed, the level of required effort and how long the task lasts.
2. Risk factors that may lead to the development of MSDs include:
    a. Exerting excessive force Examples include lifting heavy objects or people, pushing or pulling heavy loads, manually pouring materials, or maintaining control of equipment or tools.
    b. Performing the same or similar tasks repetitively. Performing the same motion or series of motions continually or frequently for an extended period of time.
    c. Working in awkward postures or being in the same posture for long periods of time. Using positions that place stress on the body, such as prolonged or repetitive reaching above shoulder height, kneeling, squatting, leaning over a counter, using a knife with wrists bent, or twisting the torso while lifting.
    d. Localized pressure into the body part. Pressing the body or part of the body (such as the hand) against hard or sharp edges, or using the hand as a hammer.
    e. Cold temperatures. In combination with any one of the above risk factors may also increase the potential for MSDs to develop. For example, many of the operations in meatpacking and poultry processing occur with a chilled product or in a cold environment.
    f. Vibration. Both whole body and hand-arm, can cause a number of health effects. Hand-arm vibration can damage small capillaries that supply nutrients and can make hand tools more difficult to control. Hand-arm vibration may cause a worker to lose feeling in the hands and arms resulting in increased force exertion to control hand-powered tools (e.g. hammer drills, portable grinders, chainsaws) in much the same way gloves limit feeling in the hands. The effects of vibration can damage the body and greatly increase the force which must be exerted for a task.
    g. Combined exposure to several risk factors. May place workers at a higher risk for MSDs than does exposure to any one risk factor.

C. Health Hazards

1. Strains and sprains from lifting loads improperly or from carrying loads that are either too large or too heavy
2. Fractures and bruises caused by being struck by materials or by being caught in pinch points
3. Cuts and bruises caused by falling materials that have been improperly stored or by incorrectly cutting ties or other securing devices

D. Symptoms

1. Pain is the most common symptom associated with MSDs. There may be joint stiffness, muscle tightness, redness and swelling of the affected area. Some people may also experience sensations of "pins and needles," numbness, skin color changes, and decreased sweating of the hands.
2. MSDs may progress in stages from mild to severe.
    a. The first pain is a signal that the muscles and tendons should rest and recover. Otherwise, an injury can become longstanding, and sometimes, irreversible.
    b. Not everyone goes through these stages in the same way. The earlier people recognize symptoms, the quicker they should respond to them.
        (A.) Early stage
            (1.) Aching and tiredness of the affected limb occur during the work shift but disappear at night and during days off work.
            (2.) No reduction of work performance.
        (B.) Intermediate stage
            (1.) Aching and tiredness occur early in the work shift and persist at night.
            (2.) Reduced capacity for repetitive work.
        (C.) Late stage
            (1.) Aching, fatigue, and weakness persist at rest.
            (2.) Inability to sleep and to perform light duties.

E. Treatment

The treatment of MSDs should come only from a physician

F. Risk Reduction

1. Hazards are best eliminated at the source; this is a fundamental principle of occupational health and safety. In the case of MSDs, the prime source of hazard is the repetitiveness of work; therefore, the main effort to protect workers from MSDs should focus on avoiding repetitive patterns of work.
2. Where elimination of the repetitive patterns of work is not possible or practical, prevention strategies involving workplace layout, tool and equipment design, and work practices should be considered.
3. Job Design
    a. One way to eliminate repetitive tasks is to mechanize the job. Where mechanization is not feasible or appropriate, other alternatives are available.
    b. Job rotation
        (A.) Requires workers to move between different tasks, at fixed or irregular periods of time. But it must be a rotation where workers do something completely different.
        (B.) Different tasks must engage different muscle groups in order to allow recovery for those already strained.
        (C.) Job rotation alone will not be effective in reducing WMSDs if not combined with the proper design of workstations. And it will not be effective while the high pace of work persists.

c. Job Enlargement increases the variety of tasks built into the job. It breaks the monotony of the job and avoids overloading one part of the body.

d. Team Work

(A.) Team work can provide greater variety and more evenly distributed muscular work.

(B.) The whole team is involved in the planning and allocation of the work and carries out a set of operations to complete the whole product.

(C.) Allows the worker to alternate between tasks, hence, reducing the risk of MSDs.

4. Workplace Design

a. The guiding principle in workplace design is to fit the workplace to the worker.

b. Evaluation of the workplace can identify the source or sources of MSDs.

c. Proper design of the workstation decreases the effort required of the worker to maintain a working position.

d. Ideally, the workstation should be fully adjustable, providing a worker with the options to work in standing, sitting or sitting-standing positions, as well as fitting the worker's body size and shape.

5. Tools and Equipment Design

a. Proper design of tools and equipment significantly decreases the force needed to complete the task.

b. Providing the worker with the proper jigs or fixtures for tasks that require holding elements saves a lot of muscular effort in awkward positions.

c. Good tools, maintained carefully and where necessary frequently changed, can also save a lot of muscle strain. More information about hand tools and preventing MSDs resulting from their use can be found in the OSH Answers document Hand Tool Ergonomics.

G. Ergonomics Program

1. Implementing an ergonomic process is effective in reducing the risks of developing MSDs. An ergonomic process uses the principles of a safety and health program to address MSD hazards. Such a process should be viewed as an ongoing function that is incorporated into the daily operations, rather than as an individual project.

2. Considerations for a program include:

3. Provide Management Support

a. A strong commitment by management is critical to the overall success of an ergonomic process.

b. Management should define clear goals and objectives for the ergonomic process, discuss them with their workers, assign responsibilities to designated staff members, and communicate clearly with the workforce.

4. Involve Workers

a. A participatory ergonomic approach, where workers are directly involved in worksite assessments, solution development and implementation is the essence of a successful ergonomic process.

b. Workers can:

(A.) Identify and provide important information about hazards in their workplaces.

(B.) Assist in the ergonomic process by voicing their concerns and suggestions for reducing exposure to risk factors and by evaluating the changes made as a result of an ergonomic assessment.

5. Provide Training
   a. Training is an important element in the ergonomic process.
   b. Training should be conducted in a language and vocabulary that all workers understand.
   c. Training is best provided by individuals who have experience with ergonomic issues in the particular industry.
   d. When training is effective workers will:
      (A.) Learn the principles of ergonomics and their applications.
      (B.) Learn about the proper use of equipment, tools, and machine controls.
      (C.) Use good work practices, including proper lifting techniques.
      (D.) Become more aware of work tasks that may lead to pain or injury.
      (E.) Recognize early symptoms of MSDs.
      (F.) Understand the importance of reporting and addressing early indications of MSDs before serious injuries develop.
      (G.) Understand procedures for reporting work-related injuries and illnesses, as required by OSHA's injury and illness recording and reporting regulation
6. Identify Problems - An important step in the ergonomic process is to identify and assess ergonomic problems in the workplace before they result in MSDs.
   a. An important part of the ergonomic process is a periodic review of the facility, specific workstation designs and work practices, and the overall production process, from an ergonomics perspective.
   b. Identify existing problems by:
      (A.) Reviewing the company's OSHA 300 injury and illness logs & 301 reports
      (B.) Reviewing workers' compensation records
      (C.) Examining worker reports of problems
   c. Identifying potential ergonomic issues by:
      (A.) Observing workplace conditions and work processes
      (B.) Conduct ergonomic job analyses
      (C.) Conduct workplace survey and worker interviews
7. Implement Solutions to Control Hazards
   a. Interventions have included:
      (A.) Modifying existing equipment
      (B.) Making changes in work practices
      (C.) Purchasing new tools or other devices to assist in the production process
   b. To reduce the chance of injury, work tasks should be designed to limit exposure to ergonomic risk factors.
      (A.) Engineering controls are the most desirable, where possible.

(B.) Administrative or work practice controls may be appropriate in some cases where engineering controls cannot be implemented or when different procedures are needed after implementation of the new engineering controls.

(C.) Personal protection solutions have only limited effectiveness when dealing with ergonomic hazards.

c. Sample Overview for controls:

| Type of Control | Program Policy Examples |
|---|---|
| **Engineering Controls** *(implement physical change to the workplace, which eliminates/reduces the hazard on the job/task)* | Use a device to lift and reposition heavy objects to limit force exertion<br>Reduce the weight of a load to limit force exertion<br>Reposition a work table to eliminate a long/excessive reach and enable working in neutral postures<br>Use diverging conveyors off a main line so that tasks are less repetitive<br>Install diverters on conveyors to direct materials toward the worker to eliminate excessive leaning or reaching<br>Redesign tools to enable neutral postures |
| **Administrative and Work Practice Controls** *(establish efficient processes or procedures)* | Require that heavy loads are only lifted by two people to limit force exertion<br>Establish systems so workers are rotated away from tasks to minimize the duration of continual exertion, repetitive motions, and awkward postures. Design a job rotation system in which employees rotate between jobs that use different muscle groups<br>Staff "floaters" to provide periodic breaks between scheduled breaks<br>Properly use and maintain pneumatic and power tools |
| **Personal Protective Equipment** *(use protection to reduce exposure to ergonomics-related risk factors)* | Use padding to reduce direct contact with hard, sharp, or vibrating surfaces<br>Wear good fitting thermal gloves to help with cold conditions while maintaining the ability to grasp items easily |

8. Encourage Early Reporting of MSD Symptoms

a. Early reporting can accelerate the job assessment and improvement process, helping to prevent or reduce the progression of symptoms, the development of serious injuries, and subsequent lost-time claims.

b. Procedures for reporting work-related injuries and illnesses must be reasonable and not deter or discourage employees from reporting.

c. Retaliating against employees for reporting work-related injuries or illnesses is not permitted.

9. Evaluate Progress

a. Established evaluation and corrective action procedures are required to periodically assess the effectiveness of the ergonomic process and to ensure its continuous improvement and long-term success.

b. As an ergonomic process is first developing, assessments should include determining whether goals set for the ergonomic process have been met and determining the success of the implemented ergonomic solutions.

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Safety Specifics – **Noise Exposure & Hearing Conservation (29 CFR 1926.101)**

A. Audiometric Testing

1. Each new employee whose work exposes them to noise levels above the “OSHA action level” will receive an audiometric test as part of a pre-screening physical examination to establish a baseline audiogram against which subsequent audiograms can be compared as required by the OSHA Standard.
2. Annually, all employees who are exposed to noise levels exceeding the 85 dB standard will be given a follow-up audiometric examination to monitor for any significant changes in their hearing ability.
3. Employees will be formally notified if there is any change in their hearing as the result of the testing. The OSHA Standard has defined this shift as a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 200, 3000 and 4000 hz in either ear. In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in the OSHA Standard.
4. When audiometric testing is required, each affected employee must not be exposed to any workplace noise for at least 14 hours prior to his/her test. This requirement may be met by wearing hearing protectors which will reduce the employee’s exposure to a sound level of 80 db(A) or below.
5. Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometer does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.
6. An audiologist, otolaryngologist or physician will review problem audiograms and shall determine whether there is a need for further evaluation. The company will provide to the person performing this evaluation the following information:
    a. A copy of the 29 CFR 1910.95 Hearing Conservation.
    b. The baseline audiogram and most recent audiogram of the employee to be evaluated.
    c. Measurement of background sound pressure in the audiometric test room as required in 29 CFR 1910.95 Appendix D.
    d. Records of audiometric calibrations as required by 20 CFR 1910.95 Appendix E.
7. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift as defined by OSHA, the employee will be informed of this fact, in writing, by the company within 21 days of determination.
8. Unless a physician determines that the standard threshold shift is not work-related or aggravated by occupational noise exposure, the company will ensure that the following steps are taken when a standard threshold shift occurs:
    a. An employee not using hearing protectors will be fitted with hearing protectors, trained their use and care, and required to use them; and
    b. An employee already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.

c. Refer the employee for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the company suspect that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.

d. Inform the employee of the need for an otological examination if a medical pathology of the ear which is unrelated to the use of hearing protector is suspected.

9. If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour Time-Weighted Average (TWA) average of 90 decibels indicates that a standard threshold shift is not persistent the company:

   a. Will inform the employee of the new audiometric interpretations: and

   b. May stop the required use of hearing protectors for that employee

B. Employee Education and Training

1. The company will train all employees who are exposed to noise at or above the 8-hour TWA of 85 dB on the use of personal hearing protection equipment.

2. Training will be repeated annually for each employee included in the hearing conservation program.

3. Training will cover:

   a. The effects of noise on hearing

   b. The purpose of hearing protectors, the advantages, disadvantages, and the attenuation of various types and instruction on selection, fitting, use and care

   c. The purpose of audiometric testing, and an explanation of the test procedures.

   d. How to clean and maintain the hearing protection equipment.

   e. Access to information and training materials.

C. Monitoring and Analysis of Workplace Noise Levels

1. The company periodically or as necessary, conducts noise level surveys of the workplace. The results of these surveys will be made available to employees upon request.

2. Any job area or company location found to be in excess of the allowable designated noise levels that cannot be brought into compliance with the noise standard will be designated as an area where hearing protectors are to be worn. When signs are posted employees must wear hearing protection. The signs may read as follows:

**NOTICE:**
**HEARING PROTECTION**
**REQUIREDIN THIS AREA**

D. Provide Suitable Engineering Controls

Where appropriate, the company will provide engineering controls to reduce noise exposure. Due to the complexity of most jobsites, it is difficult if impossible to institute effective engineering controls for most noise exposures. Shall this be the case, then employees will be required to wear suitable hearing protection.

E. Provide Hearing Protectors Where Required

1. The company will provide and required employees with hearing protectors if his/her 8-hour TWA is above the 85dB (A).

2. The company will also make hearing protectors available to all employees exposed to a TWA above 85dB (A) at no cost to the employee.
3. Any employee who may have a significant threshold shift of hearing level will be required to wear hearing protection if they are exposed to noise TWA of 85dB.
4. The company will provide workers with a choice of at least one type of ear plug and one type of earmuff (earmuff cannot be used when anything prevents the seal of the ear muff, such as safety glasses).
5. On some jobsites there will be a choice of two different ear plugs.
6. The company will make a concerted effort to find the right protector for each employee, one that offers the right attenuation, is accepted on the terms of comfort, and is used by the employee.

F. Responsibilities

1. Company
   a. Determine all sources of noise at or above 85 dB.
   b. Determine if personnel have 8-hour TWA exposures at or above 50% of the OSHA allowable.
   c. Review noise exposures annually for all job classifications with TWA exposure at or above 50% of the OSHA allowable.
   d. Ensure that audiograms are made annually for personnel whose TWA exposures are at or above 50% of the OSHA allowable.
2. Jobsite Supervisors
   a. Will require hearing protection in all areas with noise levels at or above the 85dB(A) and for all task which generate such noise level (i.e., grinding, hammering). Ear plugs shall be required in an area and/or on tasks with the sound levels exceeding 105dB.
   b. To alert employees to possible hazardous noise exposures, signs shall be posted by the company in work areas in which the sound levels may exceed 85dB.
   c. Evaluate the need for engineering and/or administrative controls to reduce the noise levels below the 85 dB and, where feasible, develop a plan to reduce all personnel exposures to less than 50% of the OSHA allowable.
   d. Make hearing protection available and enforce its use by all employees with TWA exposures at or above the 50% of the OSHA allowable and/or by those who must enter or work in areas where the noise level is 85dB or above.

   ***REMEMBER*** *- The Company determines if a unit or work area is classified as a high noise area. After the determination is made, the company's employees will be instructed to wear the appropriate hearing protection.*

G. Recordkeeping

1. All record-keeping for this program will be maintained in the office. Records will include:
2. Audiometric tests
3. Noise surveys
4. Employee training
5. Engineering controls implemented
6. Record of purchase of hearing protector

H. Work Requiring Hearing Protectors

There are many jobs or types of work that generally produces noise level that intermittently or for short durations exceed the permissible TWA. It is the policy of the company to require all workers who are engaged in these jobs to wear hearing protectors. Some are:

| Activities and/or Equipment Typically Resulting in High Noise Level | Estimated Average Noise Level dB(A) |
|---|---|
| Air Arc Gouging | 115 |
| Air compressor | 95 |
| Chain saw | 107 |
| Electric Disc Grinder | 100 |
| Forklift inside a trailer | 98 |
| Heavy equipment working | 100 |
| Impact tools | 108 |
| Pneumatic chipping hammer | 110 |
| Abrasive blasting | 100 |
| Welding machines | 95 |

I. Hearing Protectors

1. Employees may choose the type of hearing protection that best suits their particular assignment and personal preference for among those listed below. Each employee required to wear hearing protection is responsible for carrying hearing protection on his/her person. Hearing protection is furnished at no cost to employees.
2. Ear plugs

   Most ear plugs, when worn properly, have a noise reduction rating (NRR) on the package. Most ear plugs have NRR of about 30.
3. Earmuffs

   Adjustable muffs can be worn in three positions:

| Position | NRR |
|---|---|
| Over the Head | 24 (depends on the NRR of the Earmuff |
| Under the Chin | 20 |
| Behind the Head | 20 |

J. Computing the Hearing Protection Level

To compute the actual hearing protection level under the protector, subtract 7 dB(A) from the Noise Reduction Rating (NRR), then divide the number by 2, and subtract that number from the measured noise level dB (A).

| | | | | | | |
|---|---|---|---|---|---|---|
| *(subtract 7 from the NRR)* | NRR of 29 | - | 7 | = | 22 | dB(A) |
| *(divide by 2)* | 22 dB(A) | / | 2 | = | 11 | dB(A) |
| *(subtract from the Noise Level)* | 95 dB(A) | - | 11 | = | 84 | dB(A) |

Therefore, this device offers a protection level of 84 dB(A)

Safety Specifics – **Personal Protective Equipment (PPE) (29 CFR 1926.28)**

A. Assessment

1. In order to assess the need for PPE the following steps are taken:
2. Project Manager, with other appropriate employees identifies job classifications where exposures occur or could occur. The Project Manager or designee examines the following records to identify and rank jobs according to exposure hazards:
    a. Injury/illness records
    b. First aid logs
3. The Project Manager surveys the workplace areas where hazards exist or may exist to identify sources of hazards to employees.
    a. They consider these basic hazard categories:
        (A.) Impact
        (B.) Heat
        (C.) Penetration
        (D.) Harmful dust
        (E.) Compression (roll over)
        (F.) Light (optical) radiation
        (G.) Chemical
    b. During the survey the Project Manager observes and records the following hazards along with PPE currently in use.
        (A.) Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.
        (B.) Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.
        (C.) Chemical exposures
        (D.) Sources of harmful dust.
        (E.) Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
        (F.) Sources of falling objects or potential for dropping objects.
        (G.) Sources of sharp objects which might pierce the feet or cut the hands.
        (H.) Sources of rolling or pinching objects which could crush the feet.
        (I.) Layout of workplace and location of coworkers.
        (J.) Electrical hazards.
    c. Following the survey, the Project Manager organizes the data and information for use in the assessment of hazards to analyze the hazards and enable proper selection of protective equipment.
    d. An estimate of the potential for injuries is now made. Each of the basic hazards is reviewed and a determination made as to the frequency, type, level of risk, and seriousness of potential injury from each of the hazards found. The existence of any situations where multiple exposures occur or could occur are considered.

e. The Project Manager documents the hazard assessment via a written certification that identifies the workplace evaluated, the person certifying that the evaluation has been performed, the date(s) of the hazard assessment, and that the document is a certification of hazard assessment.

B. Selection Guidelines

1. Once any hazards have been identified and evaluated through hazard assessment, the general procedure for selecting protective equipment is to:
2. Become familiar with the potential hazards and the type of protective equipment (PPE) that are available, and what they can do.
3. Compare types of equipment to the hazards associated with the environment.
4. Select the PPE which ensures a level of protection greater than the minimum required to protect employees from the hazards.
5. Fit the user with proper, comfortable, well-fitting protection and instruct employees on care and use of the PPE. It is very important that the users are aware of all warning labels for and limitations of their PPE. (See the Employee Training guidelines outlined in the next section of this program for a more detailed description of training procedures.)
6. It is the responsibility of the Project Manager to reassess the workplace hazard situation as necessary, to identify and evaluate new equipment and processes, to review accident records, and reevaluate the suitability of previously selected PPE. Elements which shall be considered in the reassessment include:
    a. Adequacy of PPE program
    b. Accidents and illness experience
    c. Levels of exposure (this implies appropriate exposure monitoring)
    d. Adequacy of equipment selection
    e. Number of person hours that workers wear various protective ensembles
    f. Adequacy of training/fitting of PPE
    g. The adequacy of program records
    h. Recommendation for program improvement and modification
    i. Coordination with overall safety and health program

C. Providing PPE

1. Protective equipment, including personal protective equipment (PPE), used to comply with this part, shall be provided by the employer at no cost to employees.
2. The employer shall not require an employee to provide or pay for his or her own PPE, except as outlined below:
    a. Employer is not required to pay for non-specialty safety-toe protective footwear (including steel-toe shoes or steel-toe boots).
    b. Employer is not required to pay for non-specialty prescription safety eyewear, provided that the employer permits such items to be worn off the job-site.
    c. If providing metatarsal protection, employer is not required to pay for shoes or boots with built-in metatarsal protection that the employee requests to use.

   d. Employer is not required to pay for everyday clothing, such as long-sleeve shirts, long pants, street shoes, and normal work boots.
   e. Employer is not required to pay for ordinary clothing, skin creams, or other items, used solely for protection from weather, such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen.
3. The employer must pay for replacement PPE, except when the employee has lost or intentionally damaged the PPE.
4. Employee Owned PPE
   a. Where an employee provides adequate protective equipment he or she owns the employer may allow the employee to use that PPE.
   b. Employer must ensure that the PPE is adequate to protect the employee from hazards at the workplace.
   c. Employer is not required to reimburse an employee for that PPE.

D. Employee Training
1. The Project Manager or designee provides training for each employee who is required to use personal protective equipment, to include:
   a. When PPE is necessary
   b. What PPE is necessary
   c. How to wear assigned PPE
   d. Limitations of PPE
   e. The proper care, maintenance, useful life, and disposal of assigned PPE
2. Employees must demonstrate an understanding of the training and the ability to use the PPE properly before they are allowed to perform work requiring the use of the equipment.
3. Employees are prohibited from performing work without donning appropriate PPE to protect them from the hazards they will encounter in the course of that work.
4. If the Project Manager has reason to believe an employee does not have the understanding or skills required, then the employer must retrain. Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used which would render previous training obsolete. Also, inadequacies in an affected employee's knowledge or use of the assigned PPE which indicates that the employee has not retained the necessary understanding or skills require retraining.
5. The Project Manager certifies in writing that the employee has received and understands the PPE training.
6. An employee who does not comply with this program will be disciplined for noncompliance according to the following schedule:
   a. Verbal warning for the first offense accompanied by retraining
   b. Written reprimand for the second offense which goes in the employee's permanent record
   c. Suspension without pay for a third offense and documentation in the permanent record
   d. Dismissal as a last resort.

E. Cleaning and Maintenance

1. It is important that all PPE provided be kept clean, properly used and maintained in a sanitary and reliable condition by the employee to whom it is assigned.
2. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision.
3. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection.
4. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees.
5. If a piece of PPE is in need of repair or replacement it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor.
6. No one shall use PPE that is in disrepair or not able to perform its intended function.
7. Contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

F. PPE Specific Information

1. Eye and face protection -- Goggles and face shields
    a. All regular full time, part time, subcontractors, and temporary employees working in designated work areas and/or job assignments are required to wear ANSI approved goggles/face shields to help prevent eye and face injuries, including those resulting from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or light radiation, for example.
    b. Employees from temporary work agencies and contractors/subcontractors are required to wear goggles/face shields if assigned to work in the designated work areas requiring PPE.
    c. All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.
    d. All employees who work in designated work areas and/or job assignments are responsible for wearing company provided goggles/face shields to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
    e. All employees required to wear goggles/face shields must routinely inspect and properly care for their goggles/face shields.
2. Foot Protection-Safety Shoes
    a. All regular full time, part time, subcontractors, and temporary employees working in designated work areas and/or job assignments are required to wear safety shoes to help prevent foot injuries, ankle injuries, slips, and falls.
    b. Employees from temporary work agencies and contractors/subcontractors are required to wear safety shoes if assigned to work in the designated work areas. It is the responsibility of the agency and/or contractor to ensure the employee reports to his/her temporary assignment at this company wearing approved safety shoes.
    c. All employees who work in designated work areas and/or job assignments are responsible for purchasing and wearing safety shoes to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
    d. Personnel are responsible for informing new employees who are assigned to the designated work areas of the safety shoe policy and the procedures for obtaining them. The new employee is responsible for reporting to his/her first day of work wearing approved safety shoes.

3. Hand Protection -- Gloves
    a. All regular full time, part time, subcontractors, and temporary employees working in designated work areas and/or job assignments are required to wear gloves to help prevent hand injuries, including cuts, burns, chemical exposure, for example.
    b. Employees from temporary work agencies and contractors are required to wear protective gloves if assigned to work in the designated work areas.
    c. All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.
    d. All employees who work in designated work areas and/or job assignments are responsible for wearing company provided gloves to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
    e. All employees required to wear protective gloves must routinely inspect and properly care for their assigned gloves (if the gloves are not disposable).
4. Head protection -- Hard hats
    a. All regular full time, part time, subcontractors, and temporary employees working in designated work areas and/or job assignments are required to wear ANSI approved hard hats to help prevent head injuries, including those resulting from falling objects, bumping the head against a fixed object, or electrical shock.
    b. Employees from temporary work agencies and contractors are required to wear hard hats if assigned to work in the designated work areas.
    c. All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.
    d. All employees who work in designated work areas and/or job assignments are responsible for wearing hard hats to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
    e. All employees required to wear hard hats must routinely inspect and properly care for their hard hats.

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Safety Specifics – **Scaffolding & Aerial Lifts (29 CFR 1926.450)**

A. Scaffolding

1. Capacity

   a. Taking into account the OSHA rules we must apply and the engineering/manufacturing requirements of our scaffolds, the following rules apply.

   b. Each scaffold and scaffold component we use will support, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.

   c. When we use non-adjustable suspension scaffolds, each suspension rope, including connecting hardware, will support, without failure, at least six times the maximum intended load applied or transmitted to that rope.

2. Platform Construction

   a. Each scaffold plank will be installed so that the space between adjacent planks and the space between the platform and uprights is no more than one inch wide. If, in certain situations, we need to make this space wider, we will attach our demonstration in the appendix to this plan.

   b. Except for outrigger scaffolds (3 inches) and plastering and lathing operations (18 inches), the front edge of all platforms will not be more than 14 inches from the face of the work, unless we have a guardrail or personal fall arrest system in place that meets regulations.

   c. The following additional construction and safety information is included depending on the type of scaffold being erected.

      (A.) Supported Scaffolds

         (1.) Supported scaffolds with a height to base width ratio of more than four to one (4:1) must be restrained from tipping by guying, tying, bracing, or equivalent means.

         (2.) Supported scaffold poles, legs, posts, frames, and uprights will always bear on base plates and mud sills or other adequate firm foundations.

      (B.) Suspension Scaffolds

         (1.) Before a scaffold is used, all direct connections will be evaluated by our competent person. Our competent person will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads that will be imposed.

         (2.) When winding drum hoists are used on a suspension scaffold, they will never contain less than four wraps of the suspension rope at the lowest point of scaffold travel.

3. Gaining Access to Scaffolds

   a. We know that getting to the working platform is critical to the safety of our employees. This section outlines the mechanical requirements for gaining access to scaffold platforms such as:

      - Ladders
      - Stair rails
      - Ramps and walkways
      - Direct access from another scaffold

   b. Portable, hook-on, and attachable ladders will be positioned so as not to tip the scaffold.

   c. All stair rail systems and handrails will be surfaced to prevent injury to our employees from punctures or lacerations, and to prevent snagging of their clothes.

4. Fall Protection Plan
    a. Fall protection planning is critical to the safety and well-being of our employees. Our fall protection plan follows the OSHA requirements which are different depending on the type of scaffold we are using.
    b. Fall protection will be provided for any employee on a scaffold more than 10 feet above a lower level.
    c. This fall protection plan for our working employees is for the various types of scaffolds that we may encounter in the workplace:
        (A.) Workers on a boatswains' chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system
        (B.) Workers on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system
        (C.) Workers on a crawling board (chicken ladder) shall be protected by a personal fall arrest system, a guardrail system (with minimum 200 pound toprail capacity), or by a three-fourth inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board
        (D.) Workers on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by ropes.
        (E.) Workers on a walkway located within a scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) installed within 9 1/2 inches (24.1 cm) of and along at least one side of the walkway.
        (F.) Workers performing overhand bricklaying operations from a supported scaffold shall be protected from falling from all open sides and ends of the scaffold (except at the side next to the wall being laid) by the use of a personal fall arrest system or guardrail system (with minimum 200 pound toprail capacity).
        (G.) For all scaffolds not otherwise specified, workers shall be protected by the use of personal fall arrest or guardrail
5. All employees must wear hardhats when working on, assembling, or dismantling scaffolds. This is our primary protection from falling objects. Additionally, we will:
    a. Install all guardrail systems with openings small enough to prevent passage of potential falling objects.
    b. Prevent tools, materials, or equipment that inadvertently fell from our scaffolds from striking employees by barricading the area below the scaffold.
6. Using Scaffolds
    a. Site preparation, scaffold erection, fall protection, and gaining access to the working platform is only part of the requirements for scaffold work. While this all takes concentration and safe work practices, the most dangerous time can be when employees are concentrating on their work and not particularly aware of the hazards of working from scaffolds. It is critical that employees who use scaffolds be trained, among other things, in the recognition of the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. Our competent person will inspect all scaffolds and scaffold components for visible defects before each work shift, and after any occurrence which could affect a scaffold's structural integrity. However, in addition to that, all users of scaffolds in this company will know and understand the following safety rules:

b. Scaffolds and scaffold components will never be loaded in excess of their maximum intended loads or rated capacities.

c. Debris must not be allowed to accumulate on platforms.

7. Specific Procedures

a. In addition to the general procedures in this written safety plan, there are procedures that apply to specific types of scaffolds. The safety rules for these specific types of scaffolds are found in1926.452.

b. Prohibited Practices

(A.) Scaffold components manufactured by different manufacturers will never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.

(B.) Unstable objects will never be used to support scaffolds or platform units. Footings must be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.

(C.) Cross braces will never be used as a means of access.

(D.) The use of shore or lean-to scaffolds is prohibited.

B. Aerial Lifts

1. Anytime aerial lifts, including: (1) extensible boom platforms, (2) aerial ladders, (3) articulating boom platforms, (4) vertical towers, or (5) a combination of any such devices, are used to elevate employees to job-sites above ground, the following safety rules will apply:
2. Only authorized persons shall operate an aerial lift.
3. Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
4. Approved fall protection shall be worn and a lanyard attached to a lanyard anchoring point when working from an aerial lift.
5. Boom and basket load limits specified by the manufacturer shall not be exceeded.
6. For electrical lines rated 50 kV or below, a minimum clearance between the lines and any part of the aerial lift, employee, tools/equipment, or load shall be 10 feet. For lines greater than 50 kV, our competent person will determine clearance distances using the rule of 4” additional clearance or every 10 kV greater than 50 kV.
7. Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition. Tests shall be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition.
8. All aerial lifts shall have a reverse signal alarm audible above the surrounding noise level or the vehicle is backed up only when an observer signals that it is safe to do so.
9. No aerial lift this company owns or uses will be 'field modified' for uses other than those intended by the manufacturer unless:

a. The manufacturer certifies the modification in writing, or

b. Any other equivalent entity, such as a nationally recognized testing lab, certifies the aerial lift modification conforms to all applicable provisions of ANSI A92.2-1969, and the OSHA rules at 1926.453. The lift must be at least as safe as the equipment was before modification.

C. Ladder Trucks and Tower Trucks:

Aerial ladders must be secured in the lower traveling position by the locking device on top of the truck cab, and the manually operated device at the base of the ladder before the truck is moved for highway travel.

D. Extensible and articulating boom platforms:

1. We will test lift controls each day prior to use to determine they are in safe working condition.
2. Only authorized employees can operate an aerial lift.
3. A full body harness must be worn and a lanyard attached to the boom or basket when working from an aerial lift.

E. Duties of Competent and Qualified Persons

1. Definition
    a. Competent person-One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
    b. Qualified person-One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.
2. Duties of a Competent Person:
    a. We will not intermix scaffold components manufactured by different manufacturers unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components manufactured by different manufacturers will not be modified in order to intermix them unless our competent person determines the resulting scaffold is structurally sound.
    b. Before a suspension scaffold is used, direct connections must be evaluated by our competent person who will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed.
    c. Prior to each work shift and after every occurrence which could affect a rope's integrity, suspension scaffold ropes will be inspected by our competent person. Ropes will be replaced if any of the conditions outlined in 1926.451(d)(10) exist.
    d. Scaffolds will be erected, moved, dismantled, or altered only under the supervision and direction of a competent person.
3. Duties of a Qualified Person:
    a. The following tasks will only be done by the person we have deemed competent or qualified to perform
    b. Scaffolds must be designed by a qualified person and shall be constructed and loaded in accordance with that design.
    c. Swaged attachments or spliced eyes on wire suspension ropes of suspension scaffolds will not be used unless they are made by the wire rope manufacturer or a qualified person.
    d. We will have each employee who performs work while on a scaffold trained by a person qualified in the subject matter to recognize the hazards associated with the type of

scaffold being used and to understand the procedures to control or minimize those hazards.

e. If any unsafe condition is noted which might impact the ability of the scaffolding system to safely perform its intended functions and protect personnel, the scaffolding system will be immediately tagged at all access points, "Danger: Do Not Use" These tags shall be designed in accordance with specifications detailed in 29 CFR 1910.145 & 1926.200. These tags are commercially available through Labelmaster as Product number HT-117 by calling 1-800-621 -5808.

f. Implement the company's disciplinary plan in accordance with our corporate policies and procedures program when requirements of this program are not met or unqualified individuals alter, dismantle, or erect our scaffolding systems.

F. Training

1. Employees Who Use Scaffolds.

   a. Our employees who perform work on scaffolds will be trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training will include the following areas as applicable:

   b. The nature of and the correct procedures for dealing with electrical hazards.

   c. The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object protection systems used.

   d. The proper use of the scaffold, and the proper handling of materials on the scaffold.

   e. The maximum intended load and the load-carrying capacities of the scaffolds used.

   f. Any other pertinent requirements of the OSHA rules.

2. Employees Who Erect, Disassemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds:

   a. Our employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds will be trained by our competent person to recognize the hazards associated with the work being done. The training will include the following topics as applicable:

   b. The nature of scaffold hazards.

   c. The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.

   d. The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.

   e. Any other pertinent requirements of this subpart.

3. Employees Who Need Retraining:

   a. When we have reason to believe that one of our employees lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, we will retrain the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

   b. Where changes at the worksite present a hazard about which the employee has not been previously trained.

   c. Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.

   **d.** Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

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Safety Specifics – **Silica Exposure (26 CFR 1926.1153)**

A. Scope

This section applies to all occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air (25 µg/m3) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.

B. Recordkeeping

1. Objective data
    a. The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of this section. This record shall include at least the following information:
    b. The crystalline silica-containing material in question;
    c. The source of the objective data;
    d. The testing protocol and results of testing;
    e. A description of the process, task, or activity on which the objective data were based;
    f. Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.
2. The employer shall ensure that records are maintained and made available in accordance with 29 CFR 1910.1020.

C. Education and Training

1. Hazard communication
    a. The employer shall include respirable crystalline silica in the program established to comply with the hazard communication standard (HCS) (29 CFR 1910.1200).
    b. The employer shall ensure that each employee has access to labels on containers of crystalline silica and safety data sheets, and is trained in accordance with the provisions of HCS.
2. Employee Information and Training
    a. Training is required prior to using silica-containing materials or working in an environment known to contain airborne concentrations of Silica. Periodic refresher training is also required. We will train all silica dust in the following:
    b. Specific tasks in the workplace that could result in exposure to respirable crystalline silica
    c. Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used
    d. Hazards associated with exposure to silica dust
        (A.) Cancer
        (B.) Lung effects
        (C.) Immune system effects
        (D.) Kidney effects

e. The risks of exposure to silica to include:

(A.) Signs and symptoms of silica disease

(B.) Safe work procedures to be followed (e.g., setup of enclosures, disposal of silica waste, personal decontamination)

(C.) Use of respirators and other personal protective equipment (e.g., donning and doffing of personal protective equipment, and cleaning and maintenance of respirators)

(D.) Use of control systems (e.g., LEV and wet methods)

(E.) How to seek first aid (for example, the location and use of eyewash stations)

(F.) How to report an exposure to silica dust

(G.) The purpose and a description of the medical surveillance program

D. Written exposure control plan.

1. The employer shall establish and implement a written exposure control plan that contains at least the following elements:
   a. A description of the tasks in the workplace that involve exposure to respirable crystalline silica;
   b. A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;
   c. A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and
   d. A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.
2. The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.
3. The employer shall make the written exposure control plan readily available for examination and copying, upon request, to each employee covered by this section, their designated representatives, the Assistant Secretary and the Director.
4. The employer shall designate a competent person to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.

E. Specified Exposure Control Methods – Table 1 (Appendix A)

1. For each employee engaged in a task identified on Table 1 in the Forms section of this manual, the employer shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on Table 1, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with section D – Alternative Exposure Control Methods of this program.
2. When implementing the control measures specified in Table 1, each employer shall:
   a. For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust.
   b. For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust.

c. For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:

(A.) Is maintained as free as practicable from settled dust;

(B.) Has door seals and closing mechanisms that work properly;

(C.) Has gaskets and seals that are in good condition and working properly;

(D.) Is under positive pressure maintained through continuous delivery of fresh air;

(E.) Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (e.g., MERV-16 or better).

(F.) Has heating and cooling capabilities.

3. Where an employee performs more than one task on Table 1 during the course of a shift:

a. The total duration of all tasks combined is **more than four hours**, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift.

b. The total duration of all tasks on Table 1 combined is **less than four hours**, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

F. Alternative Exposure Control Methods – **Other than Table 1**

1. For tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1:
2. Permissible exposure limit (PEL)

a. The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m3, calculated as an 8-hour time-weighted average (TWA).

3. Exposure assessment

a. The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with either the performance option or the scheduled monitoring option.

b. Performance option

The employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

c. Scheduled monitoring option

(A.) The employer shall perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

(B.) If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

(C.) Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring within six months of the most recent monitoring.

(D.) Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the employer shall repeat such monitoring within three months of the most recent monitoring.

(E.) Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the employer shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring, except as otherwise provided in Reassessment of Exposure guidelines

d. Reassessment of exposures

The employer shall reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

e. Methods of sample analysis

The employer shall ensure that all samples taken to satisfy the monitoring requirements of this program are evaluated by a laboratory that analyzes air samples for respirable crystalline silica.

f. Employee notification of assessment results

(A.) Within five working days after completing an exposure assessment, the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.

(B.) Whenever an exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

g. Observation of monitoring

(A.) Where air monitoring is performed to comply with the requirements of this section, the employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.

(B.) When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, the employer shall provide the observer with protective clothing and equipment at no cost and shall ensure that the observer uses such clothing and equipment.

h. Recordkeeping of Air monitoring data

(A.) The employer shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica. This record shall include at least the following information:

(1.) The date of measurement for each sample taken.

(2.) The task monitored.

(3.) Sampling and analytical methods used.

(4.) Number, duration, and results of samples taken.

(5.) Identity of the laboratory that performed the analysis.

(6.) Type of personal protective equipment, such as respirators, worn by the employees monitored.

(7.) Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

(B.) The employer shall ensure that records are maintained and made available in accordance with 29 CFR 1910.1020.

4. Methods of compliance

a. Engineering and work practice controls

(A.) The employer shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless the employer can demonstrate that such controls are not feasible.

(B.) Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection that complies with the requirements of paragraph (e) of this section.

b. Abrasive blasting

(A.) In addition to the engineering and workplace controls, the employer shall comply with other OSHA standards, when applicable, such as 29 CFR 1926.57 (Ventilation), where abrasive blasting is conducted using crystalline silica containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.

G. Housekeeping

1. The employer shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.
2. The employer shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:
   a. The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air
   b. No alternative method is feasible

H. Respiratory protection

1. Where respiratory protection is required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this paragraph and 29 CFR 1910.134 which includes a respiratory protection program.
2. Respiratory protection is required:
   a. Where specified by Table 1
   b. For tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1:

(A.) Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls.

(B.) Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible.

(C.) During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.

I. Medical surveillance

1. The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this section to use a respirator for 30 or more days per year.
    a. The employer shall ensure that all medical examinations and procedures required by this section are performed by a Physician or other licensed health care professional (PLHCP).
2. Recordkeeping
    a. The employer shall make and maintain an accurate record for each employee covered by medical surveillance. The record shall include the following information about the employee:
        (A.) Name and social security number;
        (B.) A copy of the PLHCPs' and specialists' written medical opinions; and
        (C.) A copy of the information provided to the PLHCPs and specialists.
    b. The employer shall ensure that records are maintained and made available in accordance with 29 CFR 1910.1020.
3. Initial examination
    a. The employer shall make available an initial (baseline) medical examination within30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this section within the last three years. The examination shall consist of:
    b. A medical and work history, with emphasis on: past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history.
    c. A physical examination with special emphasis on the respiratory system.
    d. A chest X-ray.
    e. A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio.
    f. Testing for latent tuberculosis infection.
    g. Any other tests deemed appropriate by the PLHCP.
4. Periodic examinations

    The employer shall make available medical examinations at least every three years, or more frequently if recommended by the PLHCP.
5. Information provided to the PLHCP. The employer shall ensure that the examining PLHCP has a copy of this standard, and shall provide the PLHCP with the following information:

a. A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica.

b. The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica.

c. A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment.

d. Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

6. PLHCP's written medical report for the employee.

a. The employer shall ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed.

b. The written report shall contain:

(A.) A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment.

(B.) Any recommended limitations on the employee's use of respirators

(C.) Any recommended limitations on the employee's exposure to respirable crystalline silica.

(D.) A statement that the employee should be examined by a specialist if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

7. PLHCP's written medical opinion for the employer

a. The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

(A.) The date of the examination.

(B.) A statement that the examination has met the requirements of this section.

(C.) Any recommended limitations on the employee's use of respirators.

b. If the employee provides written authorization, the written opinion shall also contain either or both of the following:

(A.) Any recommended limitations on the employee's exposure to respirable crystalline silica.

(B.) A statement that the employee should be examined by a specialist if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

c. The employer shall ensure that each employee receives a copy of the written medical opinion within 30 days of each medical examination performed.

8. Additional examinations

a. If the PLHCP's written medical opinion indicates that an employee should be examined by a specialist, the employer shall make available a medical examination by a specialist within 30 days after receiving the PLHCP's written opinion.

b. The employer shall ensure that the examining specialist is provided with all of the information that the employer is obligated to provide to the PLHCP

c. The employer shall ensure that the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report shall contain:

   (A.) A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment.

   (B.) Any recommended limitations on the employee's use of respirators

   (C.) Any recommended limitations on the employee's exposure to respirable crystalline silica.

d. The employer shall obtain a written opinion from the specialist within 30 days of the medical examination. The written opinion shall contain:

   (A.) The date of the examination.

   (B.) Any recommended limitations on the employee's use of respirators.

   (C.) Any recommended limitations on the employee's exposure to respirable crystalline silica.

# Appendix A - Table 1

## Specified Exposure Control Methods when Working with Materials Containing Crystalline Silica

| Equipment / Task Number and Description | | Engineering & Work Practice Control Methods | Req'd Respiratory Protection & Minimum Assigned Protection Factor (APF) | |
|---|---|---|---|---|
| | | | ≤ 4 hrs/shift | > 4 hrs/shift |
| 1 | Stationary masonry saws | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | NONE | NONE |
| 2 | Handheld power saws (any blade diameter) | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>– When used outdoors<br>– When used indoors or in an enclosed area. | <br><br><br><br>NONE<br>APF 10 | <br><br><br><br>APF 10<br>APF 10 |
| 3 | Handheld power saws for cutting fibercement board (with blade diameter of inches or less) | For tasks performed outdoors only:<br>Use saw equipped with commercially available 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. | NONE | NONE |
| 4 | Walk-behind saws | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br>– When used outdoors.<br>– When used indoors or in an enclosed area. | <br><br><br>NONE<br>APF 10 | <br><br><br>NONE<br>APF 10 |
| 5 | Drivable saws | For tasks performed outdoors only:<br>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | NONE | NONE |
| 6 | Rig-mounted core saws or drills | Use saw equipped with integrated water delivery system that continuously feeds water to the blade.<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | NONE | NONE |
| 7 | 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 |
| 8 | Dowel drilling rigs for concrete | For tasks performed outdoors only:<br>Use shroud around drill bit with a dust collection system.<br>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 |
| 9 | 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 |

# Appendix A - Table 1 (cont'd)

| Equipment / Task Number and Description | | Engineering & Work Practice Control Methods | Req'd Respiratory Protection & Minimum Assigned Protection Factor (APF) | |
|---|---|---|---|---|
| | | | ≤ 4 hrs/shift | > 4 hrs/shift |
| 10 | 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. | | |
| | | – When used outdoors. | NONE | APF 10 |
| | | – When used indoors or in an enclosed area. | APF 10 | APF 10 |
| | | 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. | | |
| | | – When used outdoors. | NONE | APF 10 |
| | | – When used indoors or in an enclosed area. | APF 10 | APF 10 |
| 11 | 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 |
| 12 | 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 | NONE | NONE |
| | | 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 | | |
| | | – When used outdoors. | NONE | NONE |
| | | – When used indoors or in an enclosed area. | NONE | APF 10 |
| 13 | 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 |

# Appendix A - Table 1 (cont'd)

| Equipment / Task Number and Description | | Engineering & Work Practice Control Methods | Req'd Respiratory Protection & Minimum Assigned Protection Factor (APF) | |
|---|---|---|---|---|
| | | | ≤ 4 hrs/shift | > 4 hrs/shift |
| 14 | Small drivable milling machines (less than half-lane) | Use a machine equipped with supplemental water sprays designed to suppress dust.<br>Water must be combined with a surfactant.<br>Operate and maintain machine to minimize dust emissions. | NONE | NONE |
| 15 | 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.<br>Water must be combined with a surfactant.<br>Operate and maintain machine to minimize dust emissions. | NONE | NONE |
| 16 | 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 |
| 17 | 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 | NONE | NONE |
| | | When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions. | NONE | NONE |
| 18 | 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 | NONE | NONE |
| | | When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab. | NONE | NONE |

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Safety Specifics – **Voluntary Respirator Program (29 CFR 1910.134(c)(2))**

A. Policy

Any voluntary use of respiratory protection equipment by employees shall be governed by the provisions of this program, also at no expense to the employees. The company will provide a copy of 29 CFR 1910.134 Appendix D.

B. Dust Masks

1. When worn voluntarily:
2. The company must:
    a. Determine that the masks themselves do not pose a hazard to workers
    b. Provide the information found in Appendix D to 1910.134 of OSHA's Respiratory Protection Standard ("Information for Employees Using Respirators When Not Required Under the Standard").
3. The company is not required to:
    a. Have a written respiratory protection program
    b. Determine medical clearance for the workers
    c. Provide training

C. Respirators **other than Dust Masks**

1. When worn voluntarily:
2. The company must:
    a. Determine that the masks themselves do not pose a hazard to workers
    b. Provide the information found in Appendix D to 1910.134 of OSHA's Respiratory Protection Standard ("Information for Employees Using Respirators When Not Required Under the Standard").
        (A.) Copy of Appendix D can be found in the Forms section of this manual
    c. Establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator.
    d. Ensure that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.
3. Either the employer or the employee can provide the respirator for voluntary use. The employer doesn't have to pay for the voluntary-use respirators, but the employer does have to pay for any expenses related to providing the Appendix D information, as well as any necessary medical evaluations and respirator cleaning equipment.
4. Facial Hair
    a. Unlike for required respirator use, OSHA does not prohibit employees from having facial hair when they use a tight-fitting respirator voluntarily -- because the air is safe to breathe. But, OSHA does discourage this and recommends following sound industrial hygiene practices, as well as the manufacturer's instructions, even for voluntary use.

5. Medical Evaluation

    a. All employees who wish to make use of voluntary respiratory protection other than a dust mask shall be evaluated and certified by a physician or a licensed health care professional (PLHCP) as being “medically fit” to wear a respirator. The medical evaluation consists of, at a minimum, the administration of a health questionnaire meeting federal guidelines or provisions for a physical examination by a PLHCP that elicits the same information as the questionnaire. The PLHCP shall be provided with supplemental information by the employer on the description of the possible work conditions and any additional PPE that may be required of the employee while using respiratory equipment.

    b. The administration of the health questionnaire will be done during work hours and at no cost to the employee. The information on the questionnaire shall remain confidential between the PLHCP and the employee. The employee must have access to the PLHCP for discussion and asking questions concerning their medical evaluation. The company will only receive a recommendation of the employee’s ability to wear respiratory equipment.

    c. If an employee is restricted by the PLHCP from wearing a negative pressure respirator, but otherwise physically able to perform duties with a powered air respirator, then reasonable accommodations will be made by the program administrator not to have this restriction limit the employee’s ability to perform his job.

6. Maintenance and Care

    a. The company will provide for the cleaning and disinfecting, storage, inspection and repair of respirators that are made available to their employees for voluntary use. There are specific guidelines to follow in Appendix 1 to ensure the respirators are clean and disinfected. Respirators designated for the exclusive use of an employee shall be the responsibility of that employee to maintain and keep in a sanitary condition. Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals. Respirators maintained for emergency, training, or fit testing use shall be cleaned and disinfected after every use.

    b. Storage

        Respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals. They shall be packed or stored to prevent deformation of the face piece. Emergency respirators shall, in addition, be kept accessible to the work area and stored in easily identifiable coverings. Refer to manufacturer’s instructions for other recommendations.

    c. Inspection

        Respirators are inspected on a regular basis and employees are instructed on how to inspect their respirator. All respirators used on a routine basis shall be inspected before each use and during cleaning. All emergency respirators shall also be inspected at least on a monthly basis. Respirator inspection shall include the tightness of connections and the condition of various parts including, but not limited to, the face piece, head straps, valves, and gaskets, connecting tubes, cartridges, canisters and filters. Also, check all elastic parts for deterioration and pliability. Inspection of self-contained breathing apparatus shall be done only by trained technicians competent with that specific brand, make and model of respiratory equipment. The technician conducting the inspection shall certify the inspection by attaching a signed and dated tag or label to the equipment.

    d. Repairs

        Equipment that is defective, broken or otherwise in need of repair shall be identified immediately by attaching a red tag and stating the reason it is out of service. Repairs to respirator equipment shall be made by competent employees and only with the

manufacturers' recommended replacement parts. Absolutely no substitution of parts is allowed that is not authorized by the NIOSH approval.

7. Training

   Employers who wish to participate in a voluntary respirator program are only required to provide the basic information on respirators in 29 CFR 1910.134 Appendix D to employees who wear respirators when not required.

8. Recordkeeping

   The company will receive and keep on file the health care provider's written opinion on the employee's ability to use the respirator.

## Appendix 1
## Respirator Cleaning Procedures

These procedures are provided as a guideline when cleaning respirators. They are general in nature, and the administrator as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth (i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user).

- Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.

- Wash components in warm water (110° F maximum), with mild detergent or cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

- Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain.

- When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
    - Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 110° F, or,
    - Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100cc of 45% alcohol) to one liter of water at 110°F, or,
    - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

- Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

- Components should be hand-dried with a clean lint-free cloth or air-dried.

- Reassemble face piece, replacing filters, cartridges, and canisters where necessary.

- Test the respirator to ensure that all components work properly.

Safety Specifics – **Welding, Cutting & Hot Work (29 CFR 1926.350)**

A. Administrative Duties

The Safety Director is responsible for implementing and maintaining the written Welding, Cutting, Hot Work Procedures. These procedures are kept in the written Safety and Health manual and our corporate offices.

Prior to any welding or cutting is to be performed, the Superintendent shall ensure that the area has been inspected and that the requirements of this program have been met. If acceptable conditions are found, the Superintendent may then authorize the welding and/or cutting operation through the use of a written permit.

B. Training

It is the policy of our company to permit only trained and authorized personnel to operate welding and cutting equipment. The Superintendent will identify all new employees in the employee orientation program and make arrangements with department management to schedule training.

The Superintendent or designee will conduct initial training and evaluation: This instructor(s) must have the necessary knowledge, training, and experience to train new welding and cutting equipment operators.

1. Initial Training
    a. During training, we cover the operational hazards of our welding and cutting operations, including:
        (A.) Hazards associated with the particular make and model of the welding and cutting equipment.
        (B.) Hazards of the workplace/duties of the fire watch including fire extinguishing equipment.
        (C.) General hazards that apply to the operation of all or most welding and cutting equipment.
    b. Each potential welder or cutter who has received training in any of the elements of our training program for the types of equipment which that employee will be authorized to operate and for the type of workplace in which the welding and cutting equipment will be operated need not be retrained in those elements before initial assignment in our workplace if we have written documentation of the training and if the employee is evaluated to be competent.
2. Performance Evaluation

    Each certified welder or cutter is evaluated to verify that the welder or cutter has retained and uses the knowledge and skills needed to operate safely. This evaluation is done by the Superintendent. If the evaluation shows that the welder or cutter is lacking the appropriate skills and knowledge, the welder or cutter is retrained. When a welder or cutter has an accident or near miss or some unsafe operating procedure is identified, we also do retraining.
3. Current Welders and Cutters
    a. Under no circumstances may an employee operate welding or cutting equipment until he/she has successfully completed this company's welding and cutting training program. This includes all new welders and cutters regardless of claimed previous experience.
    b. All employees have a general obligation to work safely with and around welding and cutting operations. If welding cannot be conducted safely the welding and cutting shall not be performed.

C. Operating Procedures

Welding and cutting can create certain hazards that only safe work practices can prevent. That's why we have created a set of operating procedures. Our operating procedures follow:

1. Compressed Gas Cylinders
    a. Handling, storage, and use of compressed gases around the job site represents a number of hazards. Questions shall be resolved through supervisors or use of the Compressed Gas Association Pamphlet P-1-1965.
    b. Approved practices that our employees must follow include:
        (A.) Keep valve protection cap in place at all times when a cylinder is not in use.
        (B.) When cylinders are hoisted, secure them on a cradle, sling board, or pallet.
        (C.) Move cylinders by tilting and rolling on their bottom edges. Care in handling is required.
        (D.) Secure cylinders in an upright position at all times, especially when moving them by machine.
        (E.) Use carriers or carts provided for the purpose when cylinders are in use.
        (F.) When in use, isolate cylinders from welding or cutting operations, or suitably shield. Care will be taken to prevent them from becoming part of an electrical circuit.
        (G.) Maintain a distance of at least 20 feet or provide a non-combustible barrier at least five feet high in separating fuel gas cylinders from oxygen cylinders. This applies to indoor and outdoor storage.
        (H.) The Superintendent will designate
            (1.) Well-ventilated storage areas for cylinders inside buildings.
            (2.) Locations for fuel gas and oxygen manifolds in well-ventilated areas.

            Care will be taken to keep storage areas out of traffic areas or other situations where they could be knocked over, damaged or be tampered with.
    c. Prohibited practices that our employees must comply with include:
        (A.) Use of valve protection caps for lifting cylinders.
        (B.) Use of damaged or defective cylinders. The Superintendent will provide appropriate tags and designate an appropriate storage area for these cylinders.
        (C.) Mixing of gases.
        (D.) Use of a magnet or choker sling when hoisting cylinders.
        (E.) Use of a bar to pry cylinders from frozen ground. Warm, not boiling, water is used to thaw cylinders.
        (F.) Taking oxygen, acetylene, or other fuel gas or manifolds with these gases into confined spaces.
2. Gas Welding and Cutting
    a. Safe practices in using compressed gases and torches include:
        (A.) Cracking cylinders and attaching regulators according to industry practice.
        (B.) Putting caps on header hose connections and manifolds when not in use.
        (C.) Keeping all hoses, regulators, cylinders, valve protection caps, couplings, apparatus, and torch connections free of grease and oil, especially those involving oxygen.

(D.) Using fuel gas hose and oxygen hose of different colors.

(E.) Inspections: * All hoses before every shift; * All torches. Only devices designed for the purpose will be used to clean torch tips.

(F.) Use only friction lighters to ignite torches.

(G.) Removal of torches and hoses and positive shut-off of gas sources from confined spaces when leaving a confined space project for any substantial period of time.

b. Prohibited practices include:

(A.) Interchange of hoses, including use of adapters, between fuel gas and oxygen sources.

(B.) Placement of anything on or near a manifold or cylinder top that may interfere with the prompt shut-off in case of an emergency.

(C.) Taping more than four inches out of every 12 inches in joining fuel gas and oxygen hoses.

(D.) Using defective hose or torches.

(E.) Use of oxygen for personal cooling, cleaning off of surfaces, ventilation or blowing dust from clothing.

3. Arc Welding and Cutting

a. Safe practices in using arc welders include:

(A.) Use of holders, cable, and other apparatus specifically designed for the purpose, matched to the job and other components and in good repair.

(B.) Following Department Of Transportation standards for welding on natural gas pipelines.

(C.) When leaving electrode holders unattended, electrodes are removed and holders placed so that accidental electrical contact is not made.

(D.) Turning off the arc welding or cutting machine when it is to be left unattended for a substantial period of time or when it is being moved.

(E.) Immediate reporting of any defective equipment to the Superintendent.

(F.) Use of non-combustible or flame-proof screens to protect employees and passersby from arc rays wherever practicable.

(G.) Keeping chlorinated solvents at least 200 feet from an inert-gas metal-arc welder or providing adequate shielding. Surfaces prepared with chlorinated solvents will be thoroughly dry before welding.

b. Prohibited practices include:

(A.) Using cables with repairs or splices within 10 feet of the holder that are not equivalent in insulating value to the original cable.

(B.) Use of pipelines with flammable gases or liquids or conduits with electrical circuits as ground return.

(C.) Dipping hot electrode holders into water.

4. Fire Prevention

a. The Superintendent will use this guide to assess fire hazards at a job site:

(A.) When the object to be welded, cut or heated can be moved, and a fire-resistant, safe workspace is available, then the welding, cutting, brazing, or heating must be done in that space.

(B.) When the object to be welded, cut, or heated cannot be moved, and all fire hazards can be moved to a safe distance, then the welding, cutting, brazing or heating can be done.

(C.) When the object to be welded, cut, or heated cannot be moved, and all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.

(D.) When there is a welding, cutting, or heating task, and concentrations of flammable paints, dusts, or other flammable compounds are present, then welding, cutting, brazing or heating is not allowed.

b. All employees will be required to:

(A.) Wear flame-resistant clothing.

(B.) Have a fire watch in attendance when appropriate.

(C.) Remove all combustible material at least 35 feet from the work area and to move away from combustible materials or cover combustibles with fire resistant material.

(D.) Not weld in atmospheres containing dangerously reactive or flammable gases, vapors, liquid, or dust.

(E.) Clean and purge containers which may have held combustible material before applying heat.

(F.) Get a hot work permit and follow its safety precautions.

(G.) The company will provide suitable fire extinguishing equipment based on the Superintendent's assessment of hazards. The Superintendent will ensure the equipment is maintained for immediate use.

5. Fire Watches

a. Where a fire watch is required, the Permit Authorizing Individual (PAI) shall be responsible for ensuring that a fire watch is on site.

b. Where a fire watch is NOT required, the PAI shall **make a final check one half hour after the completion of hot work operations to detect and extinguish smoldering fires.**

c. The fire watch shall be trained to understand the inherent hazards of the work site and of the hot work, and have authority to stop operations if unsafe conditions develop.

d. The fire watch shall ensure that safe conditions are maintained during hot work operations.

e. The fire watch shall have fire-extinguishing equipment readily available and shall be trained in its use.

f. The fire watch shall watch for fires in all exposed areas and try to extinguish them only when the fires are obviously within the capacity of the equipment available. If the fire watch determines that the fire is not within the capacity of the equipment, the fire watch shall sound the alarm immediately.

g. A fire watch shall be required by the PAI when hot work is performed in a location where other than a minor fire might develop or where the following conditions exist:

(A.) Combustible materials in building construction or contents are closer than 11 m (35 ft) to the point of operation.

(B.) Combustible materials are more than 11 m (35 ft) away from the point of operation but are easily ignited by sparks.

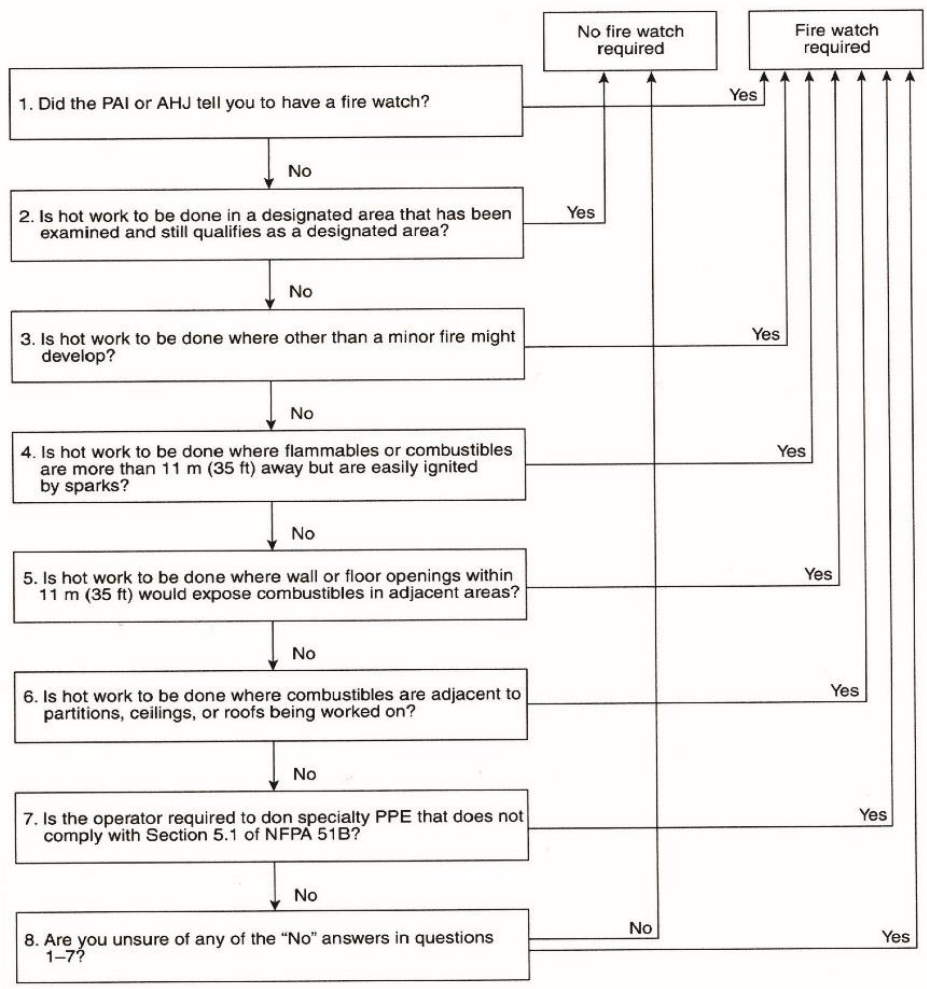
(C.) Wall or floor openings within a 11-m (35-ft) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.

(D.) Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.

h. A fire watch shall be maintained for at least 1/2 hour after completion of hot work operations in order to detect and extinguish smoldering fires.

i. More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by the initial fire watch.

j. For single ply and torch applied roofing systems, a fire watch shall be conducted for at least 1hour after torches have been extinguished as per NFPA 241.

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6. Ventilation

a. The Superintendent will determine the number, location, and capacity of ventilation devices.

b. Where ventilation is not sufficient to provide clean, respirable air, respirators will be specified according to the provisions in the Personal Protective Equipment section.

c. Ventilation will be sufficient to protect passersby as well as the welder.

d. Employees will be required to:

(A.) Know the symptoms of fumes and gases and get out of the area if they shall develop.

(B.) Perform atmospheric tests.

(C.) Keep a safe distance from the fume or gas plume.

7. Personal Protective Equipment
   a. Air line respirators will be provided for confined space jobs when sufficient ventilation cannot be provided without blocking the exit. Employees will be trained on the proper use of their respirators.
   b. When known or unknown toxic materials are present in a job, respirators will be provided that match the hazard for all employees. The hazards include zinc or zinc-bearing base or filler metals, lead base metals, cadmium-bearing filler metals, chromium-bearing or chromium-coated metals, mercury, nitrogen dioxide, and beryllium. Due to beryllium's extreme danger, both ventilation and air line respirators will be used.
   c. Where screens are not sufficient to protect welders and passersby from arc radiation, the company will provide eye protection with appropriate helmets, ANSI approved filter lens goggles, or hand shields. The helmets and shields will be maintained in good repair.
   d. When a toxic preservative is detected on a surface in a confined space, airline respirators will be provided (or the toxic coating will be stripped from at least four inches around the heated area).
   e. Other PPE used may include
      (A.) Flame resistant aprons to protect against heat and sparks.
      (B.) Leggings and high boots for heavy work.
      (C.) Ankle-length safety shoes worn under pant legs to keep from catching slag.
      (D.) Shoulder cape and skull cap to protect against overhead welding.
      (E.) Ear plugs or ear muffs on very noisy jobs like high velocity plasma torches.
      (F.) Insulated gloves to protect against contact with hot items and radiation exposure.
      (G.) Safety helmets to protect against sharp or falling objects.
   f. Employees are asked to wear wool, leather, or cotton treated clothing to reduce flammability for gas shielding arc welding. Long sleeves and pants without cuffs/front pockets are recommended to avoid catching sparks.
8. Confined Spaces
   a. Confined spaces, such as manholes, tunnels, trenches and vaults, are particularly hazardous working areas made more dangerous by welding. These spaces shall be identified by signage and all employees will be made aware of them. Ventilation is a primary consideration and will be required by the Superintendent or other competent employee designated by the company in accordance with the company's Confined Space Program.
   b. When welding or cutting is suspended for any substantial period of time, such as lunch or overnight, torches and hoses and/or electrodes and leads shall be removed from the confined space. Additionally, valves will be shut and welders shall be disconnected from their power sources.
   c. An employee will be stationed outside the confined space to maintain communication with those entering and ready to render emergency assistance when respirators are used.

d. When confined spaces are entered through a manhole or similar small opening, the company will provide a means of quickly removing a worker. An attendant with a rescue procedure will observe the worker at all times and be able to put the rescue plan into effect.

e. Limited work spaces, hazardous atmospheres, slippery floor surfaces and interior surfaces of the space will be evaluated for flammability.

9. Flammable, Toxic, or Hazardous Materials

   a. The company will designate a competent person to test the flammability and/or composition of unknown coatings.

   b. When a coating is found to be highly flammable or contain potentially toxic materials, such as lead-painted surfaces, it will be stripped from the area to prevent fire or unnecessary exposure to the welder/cutter.

10. Electrical Equipment

    Approved safe practices include:

    a. Arc welding will not be done while standing on damp surfaces or in damp clothing.

    b. Equipment will be properly grounded, installed, and operated.

    c. Defective equipment will not be used.

    d. Well-insulated electrode holders and cables will be used.

    e. Employees shall insulate themselves from both the work and the metal electrode and holder.

    f. Welding cables must not be wrapped around the welder's body.

    g. Employees shall wear dry gloves and rubber-soled shoes.

    h. No damaged or bare cables and connectors will be used.

    i. In case of electric shock, a victim shall not be touched. Current shall be turned off at the control box and then help called for. After the power is off, cardio-pulmonary resuscitation (CPR) may be performed if necessary.

11. Fall Protection

    a. A platform with railings, or safety harness and lifeline will be used when welding or cutting above ground or floor levels and there are falling hazards.

    b. A clear welding or cutting area will be maintained to prevent slips, trips, and falls.

12. First Aid/Medical Services

    First Aid equipment/Medical Services shall be available at all times in accordance with our First Aid/Medical Services written program.

C. Inspections

A number of inspections are required under the welding and cutting regulations. To make inspections efficient, we have compiled a list of inspection items to be checked before welding or cutting. The Superintendent or designated representative shall make inspections at the beginning of each shift utilizing the Inspection Checklist. Shall any deficiencies are safety hazards be identified during the inspections shall immediately take the equipment out of service and notify the Superintendent. The Superintendent shall not allow the equipment to be returned to service until it has been repaired by qualified personnel and its safety has been assured

D. Maintenance

Any deficiencies found in our welding and cutting equipment are repaired, or defective parts replaced, before continued use. However, no modifications or additions that affect the capacity or safe operation of the equipment may be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, must be changed accordingly. In no case may the original safety factor of the equipment be reduced.

While defective parts may be found, we prefer to invest time and effort into the proper upkeep of our equipment, which results in day-to-day reliability. Keeping up with the manufacturer's recommended maintenance schedules, and completing the proper records, will also increase our welding and cutting equipment's longevity.

# Chapter 8 SUPPLEMENTAL SAFETY PROGRAMS

**These Supplemental Safety Programs have been identified as specifically relevant to your organization and beneficial to your organization's safety program.**

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Supplemental Safety Programs – **Infectious Disease Prep & Response Plan**

A. Purpose

1. Using CDC guidelines, and the information currently at our disposal, this Infectious Disease Preparedness and Response Plan has been developed to sustain operations in the workplace during an infectious disease event such as Influenza or COVID-19.
2. This plan contains recommendations from federal, state, and local level public safety and health authorities and does not supersede Public Health orders, laws or regulations that apply to your business and local jurisdiction. Always consult local authorities having jurisdiction for local guidelines.
3. In the event of an emergency, always follow existing procedures for exit, assembly, accountability, and other life safety procedures.
4. In developing a plan for an infectious disease event, the following questions were taken into consideration:
    a. Are we able to reduce the number of employees who are public facing?
    b. Are we able to have the same consistent employee(s) be public facing?
    c. Are we able to conduct our business with a reduced number of people on site?
    d. Do we have an adequate supply of and capacity to provide hand sanitizing stations, soap, and paper towels for employees and consumers?
    e. How will we implement cleaning and disinfection of worksites?
    f. Are there restricted points of entrance and exit that force people to be in proximity and/or pass through high-touch areas (e.g. turnstiles, fingerprint entry, doors and elevators)?
5. Each location will designate an Infectious Disease Plan Manager (IDPM) for this program.

B. Plan Activation

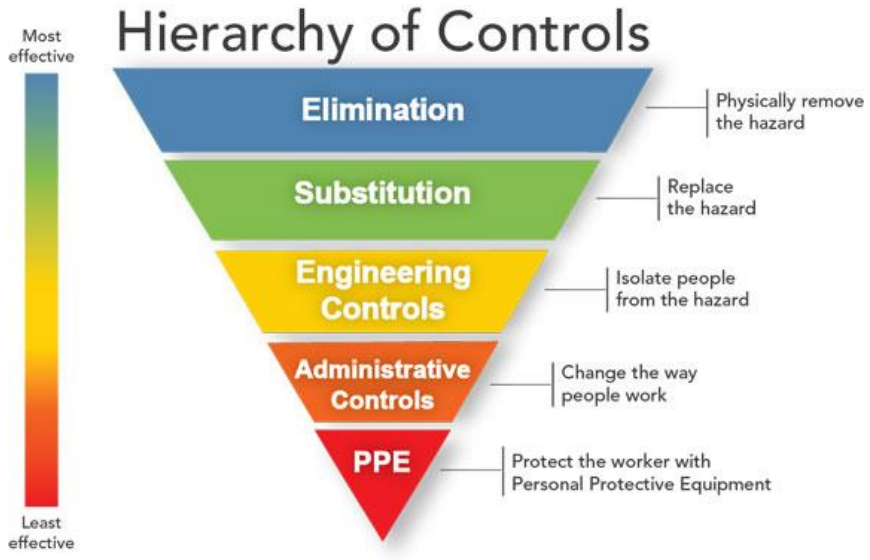
1. Should the Infectious Disease Preparedness and Response Plan need to be activated, the IDPM will:
    a. Ensure that employee contact information is current
    b. Communicate the immediate and potential hazard(s) and course of action
    c. Work with leadership to develop any event-specific policies
    d. Re-train employees on the hazard, specifics of the plan, and any event-specific policies developed
    e. As the situation evolves, the recommendations of this program will be updated and communicated to all employees by the IDPM
2. The Infection Disease & Pandemic Preparation Plan will periodically be reviewed & adjusted based on the current state of an outbreak.
3. IMPACT will keep track of “lessons learned” during the plan activation and will use this information to improve and adjust the plan for future use.
4. IMPACT will provide period training to employees to ensure that all employees are aware of the plan as well as any new updates.

C. Communication

1. The IDPM will communicate with all employees re: infectious disease plans and updates.
2. The IDPM, in coordination with the Owner and Director of Construction Operations, will communicate any changes in operations to all customers and affected parties.
3. Communications leading up to and during an infectious disease event will be provided about measures employees can take to be prepared, steps that the company will be taking, and changes to company policies. Employee records will need to be kept current with multiple ways to be reached during such an event.

D. Hierarchy of Controls

A hierarchy of controls will be implemented for infection control throughout the worksite(s). Minimizing exposure risk is dependent on a combination of control methods versus counting on a single control measure to be effective.




E. Stay-Home-When-Sick Policy

1. If you, or someone you have had close contact with has been diagnosed with an infectious disease, DO NOT COME TO WORK. Contact your supervisor and/or the IDPM for guidance.
2. If a large percentage of personnel become ill, the office will shut down, employees will work from home for a determined period of time and the office will be sanitized.

F. Exposure Screening Policy

During an infectious disease event:

1. All employees will be masked or wear a face covering when arriving at work.
2. An exposure screening shall be conducted safely, respectfully, and in in accordance with any applicable privacy laws and regulations.
   a. Exposure Screening Form
   b. Temperature taken with a touchless thermometer
   c. Employees with a temperature of 100.4°F (38°C) or above, or who answer yes to any of the screening questions must not be allowed to enter the workplace.

G. Worksite Assignment

1. It may be vital, in the event of an infectious disease outbreak and/or pandemic that the company have available a record of all customers and personnel with whom a diagnosed employee may have come into direct contact.
2. In the event of an infectious disease event, worksite assignments for all employees will be kept utilizing a Worksite Assignment Tracking Form. Assignments will be kept current for the duration of and one (1) month beyond the “all clear” of an infectious disease outbreak.

H. Reduction of Face-to-Face Contact

1. Eliminate handshaking and reduce physical contact.
2. When possible, meetings will be conducted via conference calls, or electronic meeting applications. Instructions for remote meetings will be communicated prior to meeting start times.
    a. If remote meetings are not an option, multiple, smaller group meetings will be conducted, rather than large “all hands” meetings.

I. Visitor Protocol

1. Visitors should be limited at the worksite under normal circumstances and shall be even more so during an infectious disease event.
2. Visitors are defined as, but not limited to:
    a. Friends / family of employees (should be discouraged from visiting)
    b. Maintenance workers
    c. Subcontractors
    d. Visitors shall complete an Exposure Screening Form
3. A Visitor Log shall be maintained tracking the arrival to and departure from the worksite.

J. Handwashing Policy

1. Hands should be washed using warm water (at least 100°F) and soap for at least 20 seconds. When hand washing is not possible, alcohol-based hand sanitizer containing at least 70% alcohol may also be used.
2. During an infectious disease event wash/sanitize your hands:
    a. Upon arriving at the worksite.
    b. After using the restroom.
    c. After coughing, sneezing, or blowing your nose.
    d. After cleaning, sweeping, mopping, etc.
    e. Before and after eating or drinking.
    f. Before leaving the worksite.

K. Cleaning and Disinfection Policy

1. Frequently touched surfaced should be cleaned regularly under normal circumstances. In the case of an infectious disease event, the IDPM will coordinate increased cleaning and disinfecting of those surfaces.

2. Cleaning and disinfecting will be conducting following event-appropriate guidelines.
3. All frequently touched surfaces will be cleaned and disinfected at least daily and/or between shifts. Ideally, more frequent cleanings will occur. Areas to be frequently cleaned and disinfected include but are not limited to:
    a. Restrooms
    b. Common areas
    c. Break rooms
    d. Locker rooms
    e. Transparent dividers
    f. Doorknobs, handles, etc.
    g. Shared computers, telephones, and office supplies
    h. Shared tools
    i. Machine / equipment control panels
    j. Company vehicles
    k. Packaging centers
    l. Shipping / receiving offices and docks
    m. Time clocks
    n. Air conditioner coils and drip pans
4. Adequate soap, water, paper towels, and hand sanitizer will be stocked at all worksites for handwashing and workspace cleaning.
5. Breaks will be allowed for regular and frequent workspace sanitizing throughout the day.

L. Controls for Specific Area(s) of the Worksite

1. Office / Worksite Entries

    Signs will be placed at office entrances/ exits, lobby, and break areas indicating:

    a. Exposure Screening policy
    b. Hazard awareness
    c. Social (6-foot) distancing
    d. Face coverings, if required
    e. Entries will be cleaned and disinfected at least daily, to include doorknobs, transparent dividers, and handles.
2. Hallways & Stairways
    a. Signs will be placed to promote social distancing.
    b. In the event of an evacuation or emergency, always follow existing procedures for exiting the worksite via the stairways.
    c. Stairway handrails will be cleaned and disinfected at least daily.
3. Restrooms
    a. Signs will be placed to promote proper hand washing and 6-foot distancing.
    b. Adequate soap, water, paper towels, and hand sanitizer will be stocked in all restrooms.
4. Conference Rooms, Break Rooms and Other Common Areas
    a. Common areas such as conference rooms, break rooms may be temporarily closed and/or have room capacity reduced during an infectious disease event.
    b. Signs will be placed to promote social distancing.
    c. Chairs/stools will be removed or relocated to maintain 6-foot distancing.

d. Common areas will be stocked with disinfectant wipes with adequate time allotted for appropriate cleaning between uses.

e. Common areas will be cleaned and disinfected at least daily, to include doorknobs, handles, buttons, appliances, etc.

5. Office Workspaces

a. Breaks will be allowed for regular and frequent handwashing and workspace sanitizing throughout the day.

b. Sharing your telephone, keyboard, mouse, and other office equipment is strongly discouraged.

c. Wipe down and disinfected your workspace at least daily, to include your phone, keyboard, mouse, stapler, and other frequently touched items.

6. Construction Site Workspaces

a. All personal items will be stored in designated areas on the worksite or in your vehicle, including reusable cups, outerwear, etc.

b. Toolbox Talks will be held outside, following social distancing requirements. Electronic sign-in sheets will be utilized.

c. In work conditions where 6-foot distancing is impossible to achieve, employees will wear face coverings.

d. Shift start/stop times, break times, and lunchtimes will be staggered by the supervisor to avoid larger groups of people interacting.

e. When entering a machine, vehicle, or lift, wipe down the door handles and interior surfaces with a disinfectant prior to entry.

f. If the site includes elevators or lifts, limit number of individuals in an elevator to two (2), depending on the size of the elevator.

g. Breaks will be allowed for regular and frequent handwashing and workspace sanitizing throughout the day.

M. Personal Protective Equipment (PPE)

1. Use of protective equipment is an effective risk mitigation strategy. Distribution of personal equipment means that workers use face coverings, and, in some situations, gloves.

2. All employees not working alone in an enclosed space must wear a face covering throughout the workday.

3. Face coverings or supplies to make face coverings will be made available to all employees and volunteers.

4. Employees will be trained on the proper design, use, and requirements of face coverings, with documentation to be kept in the employee and company training files.

N. Employee/Visitor becomes ill at work and/or is diagnosed

1. Any employee or visitor who develop any symptoms of in infectious disease while at work will be isolated and immediately sent home.

2. Employees who are sent home with symptoms should not return to work until they have met CDC's criteria to discontinue home isolation, or they have been cleared to return by their healthcare provider.

3. If an employee or visitor is tested for or diagnosed with an infectious disease, the employee or visitor shall contact the IDPM immediately.
    a. The IDPM will compile a list of employees, visitors, or other people known to be in close contact with the person diagnosed with an infectious disease, while NOT releasing the name of the diagnosed employee.
    b. Employees identified as having close contact should be immediately sent home or told not to come into work until the investigation has been conducted.
4. Areas recently used by an employee or visitor who has tested positive for an infectious disease shall be thoroughly cleaned and disinfection.
    a. Follow federal, state, and local guidelines for cleaning and disinfecting procedures.
    b. Ensure safe and correct application of disinfectants.

O. Phased return of employees following a closure
    1. Working from home may be an option for employee who are able
    2. Return dates and times may be staggered so that not everyone is coming to the worksite at the same time, or even on the same days
    3. Work schedules may be modified to reduce the number of employees at the worksite
    4. All changes to work schedules, return to work dates, start, and end times, etc. will be communicated to employees by their supervisor and/or the IDPM

P. Handling Cases of COVID-19

IMPACT Strategies recognizes the potential of exposure to Coronavirus (COVID-19) on our projects and the impact it could have on our people and the company. Accordingly, we have the following plan in place in the event that an individual tests positive for COVID-19 and was present on an IMPACT Jobsite.

Mike Michael has been identified as the point of contact for this policy and is hereby identified as the company's IDPM. Please IMMEDIATELY report and symptoms, exposure, concerns, or questions to Mike at (618) 960-0808.

1. Purpose of this Plan
    a. Protect people and reduce the spread of COVID-19
    b. Sustain business operations
    c. Continuity of Operations
    d. Ensure compliance with contractual and regulatory obligations
2. Protect People and Reduce the Spread of COVID-19
    a. Communicate with individuals with or suspected of COVID-19
        (A.) Confirm individual is receiving care they need.
        (B.) Confirm areas and people the individual had contact with and during what time.
        (C.) Determine if the individual knows when they might have been exposed
        (D.) Confirm that individual should not report to work and should self-quarantine to avoid contact with other people as much as possible to keep from spreading illness, while suggesting they seek medical attention

(E.) For IMPACT employees who have tested positive, communicate all available resources, and benefits available to them including that this time off will be considered sick leave and short-term disability for those who become eligible

(F.) For subcontractor employees, they should check with their employer and/or union to determine leave benefits.

(G.) Confirm with an individual that they should not return to work until a doctor confirms it is safe

b. Identify Close Contacts

Considerations when assessing close contact include the duration of exposure (e.g., longer exposure time likely increases exposure risk) and the clinical symptoms of the person with COVID-19 (e.g., coughing likely increases exposure risk, as does exposure to a severely ill patient).

The CDC defines close contact as:

(A.) Being within approximately 6 feet (2 meters) of a COVID-19 case for a prolonged period of time; close contact can occur while caring for, living with, visiting, or sharing a health care waiting area or room with a COVID-19 case. OR

(B.) Having direct contact with infectious secretions of a COVID-19 case (e.g., being coughed on).

c. Separate & Inform Workers with Close Contact, Provide Direction

IMPACT shall inform those who were in close contact, both verbally and in writing, of the situation. This step will be handled by your project manager.

(A.) Keep the identity of the individual with COVID-19 private.

(B.) The Centers for Disease Control and Prevention recommends that these individuals limit public activities.

(C.) IMPACT and subcontractor employees should self-quarantine and work from home until they are symptom free for 14 days from the day they had contact.

d. Self-Quarantine

When people are in self-quarantine, they may have no symptoms, but because there is a possibility that they might have been exposed, the CDC and healthcare leaders indicate they should stay away from others in public settings. People in self-quarantine should not go to work, or any public places where they could have close contact with others.

e. Inform People, Client, and Subcontractor Principals

On each project, the Director of Construction Operations, Scott Manning, or Project Manager, is responsible for informing client and trade partner after obtaining approval from Mark Hinrichs.

(A.) Keep the identity of the individual with COVID-19 private.

(B.) IMPACT shall inform everyone working at the project of the situation. We recommend that people be gathered in small groups to deliver the message and be provided written guidance.

(C.) Share facts of situation, our response, and ongoing steps to protect people.

3. Sustain Business Operations

a. Immediately Stop Work in Area/Control the Situation

The Project Superintendent is responsible to stop all work directly associated with the area in question. The area should be controlled in such a manner to eliminate the potential for both worker and public exposure. A determination will be made by the Director of

Operations, Craig Spidle, as to whether a project will be required to stand down for a period of time.

b. Personnel Screening

Workers showing evidence of a fever or temperature of 100.4 degrees or higher will be asked to leave the jobsite and seek professional medical diagnosis.

c. Post Warnings

The Project Superintendent shall post signage, barricades, and other protective measures to ensure the area remains undisturbed.

d. Cleaning

If a positive test result is confirmed, please contact Mike Michael. He will contact an OSHA approved sanitizing company. Cleaning must comply with OSHA's standards, including proper disposal of regulated waste.

e. Reduce the Spread of the Virus

(A.) All personnel on jobsites are required to wear all personal protective equipment at all times, especially if work requires proximity to other workers.

(B.) Provide resources that promote personal hygiene, for example, tissues, no-touch trashcans, hand soap, hand sanitizer, disinfectants, and disposable towels for employees to clean their work surfaces.

(C.) Place posters provided by your Project Manager for subcontractors, owners, vendors, and visitors on how to protect themselves and mitigate the spread of the virus.

(D.) Employees are encouraged to obtain appropriate immunizations as they see fit.

4. Continuity of Operations

a. Provide support to ensure that core functions, people and skills are identified, and that strategies are in place to ensure continuity of operations.

b. Consult with Director of Operations, Scott Manning, in order to prepare the project site or office to safely function with a potential for increased absenteeism and a reduced workforce

5. Compliance with a Regulatory Obligations

a. IMPACT will monitor and stay in compliance with the recommendations, requirements, and guidelines from the CDC, AGC, and other agencies with authority and expertise in the area of COVID-19.

b. IMPACT will review and comply with all local governmental guidance including OSHA CFR 1904 Recordkeeping requirements.

Supplemental Safety Programs – **Property Damage Prevention**

A. In addition to direct replacement or repair costs, theft and/or vandalism can result in indirect losses such as down time, cost overrun, contract penalties, and delays.

B. Site Security Plan (SSP)
   1. An effective Site Security Plan is the deterrent needed to help prevent material and equipment theft, vandalism, malicious mischief, and acts of terrorism and should be:
      a. Project/site specific
      b. Developed during the pre-construction planning stage
      c. Specific for the type of construction and project location
      d. Clearly communicated to all contractors on the site
   2. The following areas should be considered when designing a SSP:
      a. Budgetary provisions for surveillance
      b. Inventory management of equipment and materials
      c. Control measures to be used at the site
      d. Involving fires responders
      e. Inventory Management
      f. Off-Site Exposure
      g. Responsibility designation

C. Considerations for preventing property damage
   1. Surveillance
      a. Sites shall be monitored to prevent a breach in security that may result in materials or equipment theft, vandalism, malicious mischief, or even an act of terrorism.
      b. The extent of surveillance that will be necessary to protect a site should be consistent with the construction type, location, and values potentially exposed.
      c. Types of surveillance
         (A.) Patrols (security service, local police, employee patrols, etc.)
         (B.) Security system
         (C.) Closed circuit television
         (D.) Motion detectors
         (E.) Web cameras
      d. Surveillance systems should be supervised and monitored by an independent security service at least during off-hours
   2. Perimeter Lighting
      a. The perimeter of the job site should be well illuminated with lighting positioned to avoid a distracting glare for patrol personnel.
      b. Interior areas should provide lighting activated by an electric eye, motion detector, or timer.
      c. Avoid lights that require a "warm up" period, such as sodium and mercury lights.

d. Lighting should be well maintained and the changing of bulbs should be part of the project's maintenance plan.

3. Controls

a. Securing the perimeter and interior areas of a construction project will usually involve the use of multiple control measures.

b. Control measures to be used should be included in the site security plan and should be re-evaluated during all phases of the project.

c. Types of controls include:

(A.) “No Trespassing" signs should be posted around the perimeter of the job site.

(B.) Warning signs indicating that the Product Identification Numbers (PINs) for the equipment on the site have been recorded in a central location and on a national database. Reward signs or decals on equipment are• good reminders to help discourage theft and vandalism.

(C.) Perimeter fencing will be installed as a physical barrier that will deter most intruders, control authorized entries into the site, and demonstrate management's commitment to site security.

(D.) When perimeter fencing isn't feasible, barriers such as low walls, posts, dirt berms, or ditches can be used to help prevent the theft of mobile equipment on a construction site.

(E.) The points of ingress and egress to and from a construction site should be limited, witl1

(F.) Locks are used to secure equipment, supplies, and materials stored within gang boxes, storage rooms, and trailers.

d. Key Control

(A.) Procedures should be established to limit access to secured key storage to authorized personnel.

(B.) If patrol personnel are given keys to access secure areas, they must also be included in the key control program. Some tips:

(1.) Key log. Any key taken should be recorded in a log that records the name, date, time out and time returned. Employees or subcontractors tl1at have finished their involvement with the project must be checked against key logs.

(2.) Lock up mobile keys. Another simple but often neglected procedure is to remove keys from all mobile equipment.

e. Trailers

Locating storage and site office trailers in positions near the guarded entrance/ exit point, which are visible from the street, can help deter crime. For job sites in high "crime areas," consider using metal grating over windows and doors of office trailers and immobilizing storage trailers.

f. Administrative controls

(A.) Maintain a list of employees and subcontractors authorized to enter/leave the work site.

(B.) Consider issuing identification cards to employees assigned to your work site.

(C.) Log all visitors in and out of the site and assign "Visitor" passes to subcontractors or anyone else coming to your site for a short period of time.

(D.) Keep track of vehicles. There should be someone responsible for checking and logging vehicles entering or exiting the site.

4. Inventory Management
   a. All valuable equipment and supplies and appropriate storage areas at the construction site shall be identified and inventoried to include:
      (A.) Equipment manufacturer and model number.
      (B.) Serial, VIN, or Product Identification Number (PIN) number (if available) - if none, a unique number should be placed on the equipment and recorded.
      (C.) Date of purchase (information needed in the event of a claim, manufacturers' recall, evaluation of equipment durability and related issues).
      (D.) Date of delivery and expected return of leased equipment.
      (E.) Personnel (names or job titles) authorized to operate the equipment.
   b. Tracking or GPS systems can be utilized to assist in recovering stolen equipment

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Supplemental Safety Programs – **Water Damage Prevention**

A. Consequences of water damage

1. In addition to direct costs associated with cleanup, material replacement, equipment repair and mold remediation, water damage incidents may lead to significant indirect costs associated with construction delays and business interruptions.
2. Many construction contracts include liquidated damage provisions in the event a project is delayed past a predetermined date.
3. Construction delays, especially those near the end of a project, can result in loss of revenues as well as increased taxes, interest expense, legal fees, inspection fees and marketing expenses.

B. Water Damage Prevention Plan (WDPP)

1. A WDPP establishes a proactive plan in preventing water damage and should be:
    a. Project/site specific
    b. In place prior to the start of construction,
    c. Documented in writing
    d. Available to all contractors working on the job
    e. Included in employee orientation
    f. Re-evaluated as conditions change or following any water intrusion incident
2. The following areas should be considered when designing a WDPP:
    a. Job Responsibilities
    b. Deliveries and Storage
    c. Inspections and Surveillance
    d. Controls
    e. Training
    f. Off-Site Storage
    g. Reporting
    h. Risk Transfer
3. Considerations need to be made for projects that involve Renovations versus New Construction

C. Considerations for preventing water damage

1. Weather forecasts shall be monitored for inclement weather such as heavy rainfall, windstorm, flooding or hurricane.
2. Locate mechanical and electrical equipment away from areas where water may collect, such as basements.
3. Site development or grading plans should divert water accumulations from the construction area. Connections to permanent sewer and storm water systems should be made before building construction begins.
4. All weatherproofing/ waterproofing installations shall adhere to the building plans, manufacturers' specifications, industry stan-dards, and all relevant building codes.

5. Site shall be inspected to ensure that:
    a. Water accumulations from rain and groundwater are not migrating into the building
    b. All door and window openings are covered at the end of each work shift and prior to inclement weather
    c. Water lines and mechanical equipment are protected from freezing
    d. Sprinkler or plumbing lines that are pressure tested with water are drained immediately following the test
    e. Standpipe valves are closed
    f. Roof drains are not blocked with leaves or debris
    g. Sink drains are not clogged
    h. Storage areas are dry and well ventilated
    i. Materials are raised off the floor by pallets for storage
6. Moisture sensitive building materials shall be identified, specified when they are to be received; and where they will be stored prior to installation.

## Chapter 9 FORMS

# These forms are provided as additional resources, templates, and/or tools that can be used with your safety program.

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# Emergency Action Plan Guide

***Note:*** *The following emergency action plan is provided only as a guide to assist employers and employees in complying with the requirements of 29 CFR 1910.38, as well as to provide other helpful information. It is not intended to supersede the requirements of the standard. An employer shall review the standard for particular requirements which are applicable to their individual situation and make adjustments to this program that are specific to their company. An employer will need to add information relevant to their particular facility in order to develop an effective, comprehensive program.*

**Emergency Action Plan Date** _____ / _____ / _____

**Project Name**:_____

## POLICY

It is the policy of this company to take every possible action to comply with all emergency regulations and protect employees in emergency situations.

## EMERGENCY PLAN COORDINATOR

_____ *(name of person or title)* is responsible for making sure this emergency action plan is kept up to date, practices, and reviewed periodically.

The Emergency Plan Coordinator can be reached at *(location and phone number)*: _____

_____

## REPORTING PROCEDURES

*(List the types of emergencies that could occur at your workplace and how employees shall report them. Options include internal telephone numbers, intercom, public address systems, etc. Employees must also notify external emergency responders if the company uses them for assistance in emergencies.)*

| Type of Emergency | How to Report (Phone Numbers) |
|---|---|
| Fire | |
| Explosion | |
| Weather | |
| Bomb threat | |
| Chemical Spill/Leak | |
| Violence | |
| Medical | |
| Other (list) | |

Reporting procedures are posted *(locations)*: _____

Emergency Designated Meeting Place: _____

## EVACUATION PROCEDURES

### Emergency Escape Procedures and Meeting Location

Emergency escape procedures and meeting location shall be assigned to each person by their supervisor. Subcontractor supervisors are to insure all employees within their company are familiar with this plan.

### Employee Accountability Procedures after Evacuations

When an evacuation signal is given, each supervisor involved will proceed to the vicinity of the designated meeting place. The supervisor will insure all personnel are evacuated and will provide assistance to employees requiring same.

All employees will then be accounted for by their supervisor. Supervisors will then report their company's status to the superintendent or individual in charge. No one is to re-enter the building for any reason until the Fire Department or other responsible agency has notified us the building is safe for re-entry.

### Severe Weather/Tornado

When a hazardous weather alert is announced, all employees shall immediately go to their designated tornado refuge area. All employees shall stay in the tornado refuge area until given the all clear sign and then proceed to their designated meeting place.

Tornado refuge areas are located *(locations)*: _____

_____

### Training

The following personnel have been trained to assist in the safe and orderly emergency evacuation of other employees.

| Name | Title |
|---|---|
| | |
| | |
| | |

## FIRE EXTINGUISHERS

Fire extinguishers are located at the IMPACT Strategies office trailer and throughout the project jobsite where appropriate

## CHAIN OF COMMAND AND EMERGENCY PHONE NUMBERS

For more information about this plan, contact the Project Superintendent. The following people shall be contacted during off-hours emergencies:

| Name | Telephone Number |
|---|---|
| | |
| | |
| Mike Christ | 618-531-9406 |

# IMPACT Strategies

## Incident Investigation Report

Investigator: _____ Report Date: _____ / _____ / _____

Incident Resulted In: ☐ Near Miss ☐ Equipment Damage ☐ Property Damage ☐ Injury ☐ Fatality

When did the incident occur? Date: _____ / _____ / _____ Time: ____ : ____a.m./p.m.

Is the incident/injury reportable to OSHA? ☐ No ☐ Yes – Date reported to OSHA: _____ / _____ / _____

**Involved Employee Information:**

Name: _____ _____ _____
LAST FIRST MI

Address: _____ _____ _____ _____
STREET CITY STATE ZIP

Home Phone: _____ Mobile Phone: _____

D.O.B.: _____ Gender: _____ SS# _____ - _____ - _____

Occupation: _____

Was the employee Drug Tested? ☐ No ☐ Yes – Results: _____

Was the employee Alcohol Tested?☐ No ☐ Yes – Results: _____

**Employer Information:**

Company Name: _____

Supervisor's Name: _____ _____ _____
LAST FIRST MI

Telephone: _____ Fax Number: _____

Company Address: _____ _____ _____ _____
STREET CITY STATE ZIP

**Witness Information:** ☐ No Witnesses

Name: _____ _____ _____
LAST FIRST MI

Statement Attached? ☐ Yes ☐ No (If no, explain) _____

Name: _____ _____ _____
LAST FIRST MI

Statement Attached? ☐ Yes ☐ No (If no, explain) _____

Name: _____ _____ _____
LAST FIRST MI

Statement Attached? ☐ Yes ☐ No (If no, explain) _____

# Incident Investigation Report (cont'd)

**Incident Information:**

When was the incident reported to supervisor?Date: _____ / _____ / _____ Time: ____ : ____a.m./p.m.

Job Site Address: _____ _____ _____ _____
STREET CITY STATE ZIP

Specific Location Where Incident Occurred: _____

The incident occurred while working: ☐ Inside ☐ Outside

Conditions (*if outside*): ☐ Sunny ☐ Excessive Heat ☐ Dry ☐ Rainy ☐ Snowy ☐ Excessive Cold

What was the involved employee doing at the time of the incident?

Describe how did the incident occurred:

Describe any Property damage:

Describe any Equipment damage:

What environmental factors (unsafe conditions) contributed to the incident? *(see supplemental information)*

What behavioral factors (unsafe acts) contributed to the incident? *(see supplemental information)*

What corrective actions have been taken to prevent incident recurrence?

# Incident Investigation Report (cont'd)

## Injury Information:

When was the injury reported to supervisor? Date: _____ / _____ / _____ Time: ____ : ____a.m./p.m.

Type of Medical Treatment administered: (check all applicable)

- ☐ None
- ☐ On-Site first aid
- ☐ Doctor/Clinic visit
- ☐ EMT/Paramedic
- ☐ Emergency Room
- ☐ Hospital Stay

Type of Injury/Illness that was incurred: (check all applicable)

- ☐ Abrasion
- ☐ Allergic Reaction
- ☐ Animal Bite
- ☐ Asphyxiation
- ☐ Blister
- ☐ Burns
- ☐ Cardiovascular
- ☐ Concussion
- ☐ Contusion (bruise)
- ☐ Crushing Injury
- ☐ Dermatitis
- ☐ Dislocation
- ☐ Electrocution
- ☐ Exposure-Chemical
- ☐ Exposure-Radiation
- ☐ Eye Cases
- ☐ Fracture
- ☐ Hearing Loss-Temp.
- ☐ Hernia
- ☐ Laceration
- ☐ Poisoning
- ☐ Puncture
- ☐ Repetitive Motion
- ☐ Splinter
- ☐ Sprain (joint)
- ☐ Sting-Insect Bite
- ☐ Strain (muscle)
- ☐ Temperature-Extreme Hot or Cold
- ☐ Unclassified

Injury Caused by: (check all applicable)

- ☐ Burns
- ☐ Caught in/between
- ☐ Climbing
- ☐ Cut/Puncture
- ☐ Electrical Shock
- ☐ Explosion
- ☐ Fall - Elevation
- ☐ Fall - Same Level
- ☐ Fall – Climbing
- ☐ Falling Object
- ☐ Irritation
- ☐ Lifting./Handling
- ☐ Motor Vehicle
- ☐ Natural Disaster
- ☐ Reaching for…
- ☐ Struck against…
- ☐ Struck by…
- ☐ Violence

Body Part that was injured: (check all applicable)

- ☐ Head
- ☐ Face
- ☐ Ear ☐ R ☐ L
- ☐ Eye ☐ R ☐ L
- ☐ Nose
- ☐ Mouth
- ☐ Throat
- ☐ Neck
- ☐ Back
- ☐ Chest
- ☐ Stomach
- ☐ Kidney ☐ R ☐ L
- ☐ Buttock ☐ R ☐ L
- ☐ Groin ☐ R ☐ L
- ☐ Hip ☐ R ☐ L
- ☐ Leg ☐ R ☐ L
- ☐ Knee ☐ R ☐ L
- ☐ Ankle ☐ R ☐ L
- ☐ Foot ☐ R ☐ L
- ☐ Toes ☐ R ☐ L

*(circle)*

- ☐ Shoulder ☐ R ☐ L
- ☐ Arm ☐ R ☐ L
- ☐ Elbow ☐ R ☐ L
- ☐ Wrist ☐ R ☐ L
- ☐ Hand ☐ R ☐ L
- ☐ Fingers ☐ R ☐ L

*(circle)*

## Medical Treatment Information:

Hospital/Clinic Name: _____ Telephone: _____

Address: _____ _____ _____ _____
STREET CITY STATE ZIP

Attending Physician: _____ Telephone: _____

Address: _____ _____ _____ _____
STREET CITY STATE ZIP

Recommendation of the doctor: ☐ Return to Regular Work ☐ Restricted Work ☐ Days off Work

Number of Days to be off Work: _____ Date to Return to Restricted Work: _____ / _____ / _____

Number of Restricted Work: _____ Date to Return to Regular Work: _____ / _____ / _____

## Incident Investigation Report (cont'd)

**Supervisor Information:**

*I certify that I have reviewed all information contained on this Incident/Near Miss Report and am taking the appropriate actions to completely investigate the incident, as well as to report any required findings.*

Reported to National Safety Consulting: Date: _____ / _____ / _____ Time: ____ : ____a.m./p.m.

Name of person to whom it was reported: _____

Reported to OSHA (if applicable): Date: _____ / _____ / _____ Time: ____ : ____a.m./p.m.

**Signature:**

_____ _____ _____ / _____ / _____
PRINT SIGNED DATE

---

**National Safety Consulting Information:**

Safety Manager Completing Investigation: _____

☐ Photos Attached to Report

Incident Notes:

Recommended Remediation:

**National Safety Consultant Signature:**

_____ _____ _____ / _____ / _____
PRINT SIGNED DATE

# Incident Supplemental Information

*Note: Each incident will involve at least one of the following conditions as a contributing factor.*

## Environmental Factors (Unsafe Conditions)

| Conditions | Definition of Condition | Suggested Corrective Action |
|---|---|---|
| Unsafe procedures | Hazardous Process. Management failed to make adequate plans for safety. | A. Pre-Project Planning<br>B. Formulation of Safe Procedures |
| Improperly guarded | Work areas, machines, or equipment that is unguarded or inadequately guarded. | A. Inspection<br>B. Checking plans, blueprints, purchase orders, contracts, & materials for safety<br>C. Include guards in original design, order, & contract<br>D. Provide guards for existing hazards |
| Defective through use | Buildings, machines, or equipment that have become rough, slippery, sharp edged, worn, cracked, broken, or otherwise defective through use or abuse. | A. Inspection<br>B. Proper Maintenance |
| Defective through design | Failure to provide for safety in the design, construction, and installation of buildings, machinery, & equipment. Too large, too small, not strong enough. | A. Source of supply must be reliable<br>B. Checking plans, blueprints, purchase orders, contracts, & materials for safety<br>C. Correction of defects |
| Unsafe clothing or personal protective equipment | Management's failure to provide or specify the use of goggles, respira-tors, safety shoes, hard hats, & other articles of safe dress or apparel. | A. Provide safe apparel or personal protective equipment.<br>B. Specify the use or non-use of certain apparel or protective equipment on certain jobs. |
| Unsafe housekeeping facilities | Unsuitable layout or lack of equipment necessary for good housekeeping (i.e. shelves, boxes, bins, aisle markers, etc.) | A. Provide suitable layout and equipment necessary for good housekeeping. |
| Improper ventilation | Poorly or not ventilated area | A. Improve ventilation |

## Behavioral Factors (Unsafe Acts)

| Factor | Definition of Factor | Suggested Corrective Action |
|---|---|---|
| Lack of knowledge or skill | Unaware of safe practice; Unpracticed or unskilled. Not properly instructed or trained. | A. Job training<br>B. Improved hiring practices |
| Improper attitude | Worker was properly trained and instructed, but failed to follow instructions. | A. Supervision<br>B. Discipline<br>C. Improved hiring practices |
| Physical Deficiencies | Worker has impaired eyesight or hearing, heart trouble, hernia, previous injuries, etc. | A. Pre-employment physicals<br>B. Periodic physicals<br>C. Proper placement of workers<br>D. Identification of workers with temporary physical deficiencies |
| Substance Abuse | Worker was under the influence of (illegal or prescribed) drugs or alcohol while completing task | |

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# IMPACT Strategies

## Incident / Near Miss Witness Statement

**Witness Information:**

Name: _____ _____ _____
LAST FIRST MI

Address: _____ _____ _____ _____
STREET CITY STATE ZIP

Home Phone: _____ Mobile Phone: _____

Name of Employer: _____

Supervisor's Name: _____ _____ _____
LAST FIRST MI

Telephone: _____ Fax Number: _____

Employer's Address: _____ _____ _____ _____
STREET CITY STATE ZIP

**Incident Information:**

When did the incident occur? Date: _____ / _____ / _____ Time: ____ : ____a.m./p.m.

The incident occurred while working: ☐ Inside ☐ Outside

Conditions (*if outside*): ☐ Sunny ☐ Excessive Heat ☐ Dry ☐ Rainy ☐ Snowy ☐ Excessive Cold

Please state your involvement in the incident: *(the more detail, the better – continue on back, if needed)*

Did you report the incident to anyone? ☐ Yes _____ ☐ No (If no, explain)

*The events recounted on this Incident/Near Miss Report are true and complete to the best of my recollection.*

_____ _____ _____ / _____ / _____
PRINT SIGNED DATE

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# IMPACT Strategies

## Near Miss Report

***This form is not intended to result in retaliatory action by the company or by National Safety Consulting. This report is strictly intended to: improve employee awareness and the predictive module in NSC's auditing software. This will assist in identifying where a potential incident MIGHT happen; to evaluate the safety hazards; and to determine, as a team, where we can better improve on-site training, techniques, and behavior.***

Who is Reporting: _____ Report Date: _____ / _____ / _____

Date and Time of Near Miss: Date: _____ / _____ / _____ Time: _____ : _____a.m./p.m.

---

Potentially Involved Company: _____

Specific Location of the Near Miss: ☐ Inside ☐ Outside Where on the project? _____

_____

Conditions (*if outside*): ☐ Sunny ☐ Humid ☐ Excessive Heat ☐ Rainy ☐ Icy ☐ Snowy ☐ Excessive Cold

---

Potential Injuries? ☐ No ☐ Yes (describe) _____

Potential Property Damage? ☐ No ☐ Yes (describe) _____

Potential Equipment Damage? ☐ No ☐ Yes (describe) _____

Were behavioral factors (unsafe acts) related to the near miss? ☐ No ☐ Yes (describe below)

Were environmental factors related to the near miss? ☐ No ☐ Yes (describe below)

Describe the Near Miss *(including what job was being done, what the employee was doing before the near miss, and any behavioral or environmental factors)*:

**Near Miss Report information sent to National Safety Consulting:** ☐ No ☐ Yes _____ / _____ / _____

_____ _____ _____ / _____ / _____

PRINT SIGNED DATE

---

**Near Miss Report received by National Safety Consulting & Entered into Predictive Solutions**

_____ _____ _____ / _____ / _____

PRINT SIGNED DATE

**NSC's recommended action, if any to be taken:**

☐ Further Investigation ☐ Training ☐ Additional program(s) ☐ Other:_____

_____ _____ _____ / _____ / _____

PRINT SIGNED DATE

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# IMPACT Strategies

## Safety Training / Meeting Sign In Sheet

Trainer: _____ Meeting Type: _____ Date: ____ / ____ / ____

| | Print Name | Job Title | Signature |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
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| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |

**Safety Topics Covered:**

- ☐ Confined Space
- ☐ Driver Safety
- ☐ Drug-Free Workplace Program
- ☐ Emergency Procedures
- ☐ Fire Protection
- ☐ First Aid Training
- ☐ Hazardous/Flammable Materials
- ☐ Housekeeping
- ☐ Incident Investigation
- ☐ Incident Reporting
- ☐ Industrial Hygiene
- ☐ Injuries or Incident Review
- ☐ Lockout/Tagout
- ☐ Materials Handling/Back Safety
- ☐ Personal Protective Equipment
- ☐ Powered Industrial Truck
- ☐ Pre-Project Planning
- ☐ Safety Manual Orientation
- ☐ Supervisor's Training
- ☐ Teamwork
- ☐ Tools, Equipment, Machinery
- ☐ Vehicle Safety
- ☐ Violence Prevention Program
- ☐ Welding
- ☐ Other _____

**Comments:** _____

_____

_____

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# IMPACT Strategies

## Safety Inspection Check List

Inspector: _____ Title: _____ Date: ____ / ____ / ____

*1 = Satisfactory  2 = Needs some attention  3 = Needs immediate action*

| Item | Grade | Comments |
|---|---|---|
| **Housekeeping** | | |
| General neatness of work area, lunchrooms, restrooms. Housekeeping maintained | | |
| Aisles are properly marked, clear & in good condition | | |
| Aisle widths maintained | | |
| Mats, gratings, etc. used when drainage is needed | | |
| Floor openings & holes marked and protected | | |
| **Fire Prevention** | | |
| Fire extinguisher available & functional, where required | | |
| No smoking signs posted & enforced | | |
| Ventilation adequate | | |
| Exposures from dust, fumes, vapors, etc. controlled | | |
| **Flammable Gases & Liquids, Batteries** | | |
| Proper storage, use & handling of flammable & combustible materials in approved cans and/or cabinets | | |
| Proper handling of compressed gases & materials | | |
| Storage drums for flammable liquids properly grounded & bonded | | |
| Batteries are charged in a properly vented room | | |
| No open flames exist in the battery charging room | | |
| Fuel tanks are always filled when the equipment engine is turned off | | |
| **Tools, Machinery & Equipment** | | |
| Electrical & portable tools and outlets properly grounded | | |
| Covers in place on all electrical fuse & outlet boxes | | |
| Approved machines guards in place at points of operation & over foot treadles | | |
| Only authorized tools are used to place & remove materials from machinery | | |
| Proper guarding of gears, pulleys, conveyors, chains, etc. | | |
| Machines firmly anchored to prevent moving | | |
| Weight of load does not exceed equipment rating to handle it | | |
| Mobile equipment equipped with a horn, capacity sign & overhead guard | | |
| Lockout/Tagout program in use for designated equipment | | |

***Continued on back***

# Safety Inspection Check List (Page 2)

*1 = Satisfactory  2 = Needs some attention  3 = Needs immediate action*

| Item | Grade | Comments |
|---|---|---|
| **Ladders** | | |
| Ladders inspected, in good condition, and free from sharp edges & splinters | | |
| Ladders have proper safety feet | | |
| Cages & wells used as required (on fixed ladders only) | | |
| Step ladders do not exceed 20 feet in length | | |
| **Stairs & Exits** | | |
| Stair handrails are 30-34 inches above surface | | |
| A handrail is in place on every stairway with at least 4 risers (steps) | | |
| Risers conform to proper height and are uniform | | |
| Standard railings are in place on open sides of exposed stairs | | |
| Building exits are marked & adequate | | |
| Exit routes are not blocked and well illuminated | | |
| Lighting on exit signs conform to government standards (5 foot candles) | | |
| **General Work Environment & Personal Protective Equipment** | | |
| Noise levels conform to government standards | | |
| Compressed air for cleaning under 30 PSI | | |
| Separate lunch rooms provided when toxic materials are present | | |
| Number of restroom facilities available conforms to federal standards | | |
| Separate restroom facilities provided for men & women | | |
| Personnel trained in first aid & first aid kits are available | | |
| Personal protective equipment provided & used | | |
| Proper respirators & masks used when necessary | | |
| **OSHA Postings & Records** | | |
| OSHA poster is properly displayed | | |
| Capacity signs posted through-out the building | | |

# IMPACT Strategies

## Safety Violation Notice

Employee Name: _____

Department: _____ Violation Date: ____ / ____ / ____

A safety and health survey of your operation has revealed non-compliance of certain safety rules, procedures, programs, and/or local, state, or federal regulations. As a condition of the company's safety policy, you are required to maintain a safe work environment and to prevent unsafe actions of yourself, co-workers, and/or your employees.

This warning is for your protection and safety. The violation(s) noted and corrective action(s) are indicated below.

| Rule Violated | Violation Description | Corrective Action Required* |
|---|---|---|
| 1) | | |
| 2) | | |
| 3) | | |

**Corrective Action Required***

1 = Cease operation until corrective action is complete
2 = Warn personnel and instruct them on proper safety procedures
3 = Provide proper equipment necessary
4 = Change procedure/work method
5 = Initiate and complete corrective action (include date)
6 = Other (specify above)

**Comments:** _____

_____

_____

**Disciplinary Action Imposed**

- ☐ Verbal Reprimand along with this notice
- ☐ Written Reprimand with a last chance warning
- ☐ Suspension from Work Site (from _____ / _____ / _____ until _____ / _____ / _____)
- ☐ Termination of Employment Contract

Supervisor: _____ Date: ____ / ____ / ____

Employee: _____ Date: ____ / ____ / ____

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# IMPACT Strategies

## Substance Abuse Testing Notification Form

***To be signed by the employee and returned to the Company***

Date: _____ / _____ / _____ Employee Name: _____

Test Date: _____ / _____ / _____ Test Time: _____ am / pm

Testing Location: _____

Test Reason: ☐ Pre-Employment

☐ Post-Vehicle Accident ☐ Post-Incident ☐ Random

☐ Reasonable Suspicion ☐ Routine Fitness for Duty ☐ Other: _____

Testing Authority: *(check all that apply)*

☐ DOT Drug (Urine Specimen) ☐ Non-DOT Drug (Urine Specimen) ☐ Non-Observed

☐ DOT Breath Alcohol ☐ Non-DOT Breath Alcohol ☐ Observed

---

I acknowledge that on/at the date and time noted below I have been notified by my employer that I am required to submit to a drug and/or alcohol test on/at the date and time above.

If I do not submit to this request, I will be considered to be in violation of the Substance Abuse Policy, will be reclassified to a non-compliant status and will be subject to the reinstatement requirements as defined in this policy.

This document will be retained in my confidential testing files along with the final determination of all drug and/or alcohol testing results.

Date Notification Received: _____ / _____ / _____ Time: _____ am / pm

Signature: _____

---

**Employee Information**

You are to proceed immediately to the collection site, unless you have a scheduled date/time noted above. Should you fail to arrive within the reasonable amount of time allowed, you will be deemed to have refused the test.

Random Testing: If required, your name has been selected for drug and/or alcohol testing by a computerized program of random selection. Your selection does not imply that the company has a specific cause to suspect you of using alcohol or prohibited drugs; rather, that the Random Testing program is being utilized.

Non-Observed Drug Specimen: You may provide a urine specimen (at least 45 ml) in the privacy of a stall.

Observed Specimen (after previous DOT violation or when instructed by an MRO): You will be asked to provide a urine specimen (at least 45 ml) in view of a person of your same gender. You will be asked to raise clothing above the waist, lower clothing worn below the waist, and turn around so the observer can detect the use of any unauthorized device.

Urine Collections: If you are unable to provide a sufficient quantity of urine, you will be given a waiting period and encouraged to drink liquids during such time. If you are unable to provide a sufficient urine specimen in the allotted time you will need to be evaluated by a licensed physician or the Medical Review Officer (MRO) to determine if there is a valid medical reason for the insufficient urine sample (“shy bladder”). If not, you will be deemed to have refused to provide the required urine specimen. If you refuse to provide the required specimen, adulterate the specimen, substitute the urine of another person, or the test result is positive for prohibited drugs, you will be considered in violation of the Substance Abuse Policy

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# IMPACT Strategies

## Substance Abuse Policy Acknowledgement Form

***To be signed by the employee and returned to the Company***

By signing this document, I am acknowledging and agreeing to the following:

- I have received a copy of the Substance Abuse Policy used by this company.
- I have read and understand the Substance Abuse Policy and agree to abide by the policy in all respects.
- I understand that I may not use, store, possess, manufacture, distribute, or be under the influence of illegal substances, or use or be under the influence of alcohol, while performing work for the company.
- I am aware that the failure to abide by any part of this policy will result in disciplinary action, up to and including termination of my employment with the Company.

If I have any questions regarding these procedures, I will consult with my supervisor, manager, and/or company representative as soon as possible.

Print Name: _____ Date: _____ / _____ / _____

Signature: _____

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# IMPACT Strategies

## Task Safety Observation (TSO) Vest Card

(outside of trifold vest card)

**Work Practices**

S AR
- ❑ ❑ Ladder use
- ❑ ❑ Scaffold use
- ❑ ❑ Hand tool use
- ❑ ❑ Power tool use
- ❑ ❑ Shop equipment use
- ❑ ❑ Aerial platform use
- ❑ ❑ Extension cord use
- ❑ ❑ Forklift use
- ❑ ❑ Material handling
- ❑ ❑ Working at heights
- ❑ ❑ Overhead work
- ❑ ❑ Crane/rigging use
- ❑ ❑ Chemical use
- ❑ ❑ Vehicle use

**Activity Planning**

S AR
- ❑ ❑ Pre-task analysis

Feedback provided:

The "at risk" behaviors or people cause the majority of workplace injuries. Task Safety Observations aim to continuously improve these behaviors and prevent incidents instead of respond to them.

Remember: You get the level of safety than **you** demonstrate you want!

IMPACT STRATEGIES

*Illinois Office*
340 Office Court, Suite A
Fairview Heights, IL 62208
618-394-8400

*Missouri Office*
Power House Building
401 S. 18th Street, Suite 375
St. Louis, MO 63103
314-646-8400

IMPACT STRATEGIES

**Task Safety Observation**

BUILD.
TRUST.
NO LIMITS.

(inside of trifold vest card)

IMPACT STRATEGIES

Prepare for your audit; for example, establish the time, place and activity
- Should take no longer than 15 minutes
- Stand and observe workers; use all senses
- Use the **checklist**
- Do not attempt to solve all problems in one audit-
  **TALK** and **LISTEN** to the workers:
  - Ask **open-minded** questions!
  - Take interest in their **Input**
  - Do they know standards, procedures, policy, rules, initatives?
  - Do they **understand** how they get injured?
  - What would the **injury** be?
  - What are **their ideas** to avoid injury?
  - What are **their** current **safety** problems?
  - What do **they believe**?
- **Praise** good performance
- **Make clear agreements on corrections**

**Typical Open Questions Approach**

Why do you think we stopped you?
What do you think worried me when I first saw this happening?
What could go wrong?
How could **YOU** get hurt?
What kind of injury? How serious?
Who else could be affected?
What could **YOU** do to prevent it?
**GET AGREEMENTS**
How could the job be done more safely?
**GET A COMMITMENT TO ACT**

**Task Safety Observation**

Observer name:_____
Contractor name:_____
Location:_____
Date:_____

**Task Description**

_____
_____
_____
_____
_____

**Body Positioning/Exposure**

S AR
- ❑ ❑ Struck by/line of fire
- ❑ ❑ Caught between
- ❑ ❑ Pinch Points
- ❑ ❑ Overextension
- ❑ ❑ Tripping/falling/eyes on pathway
- ❑ ❑ overexertion

Feedback provided:

**Working Conditions**

S AR
- ❑ ❑ Housekeeping
- ❑ ❑ Illumination
- ❑ ❑ Walking/working surfaces
- ❑ ❑ Barriers/barricades

Feedback provided:

**Personal Protective Equipment**

S AR
- ❑ ❑ Hand protection
- ❑ ❑ Head protection
- ❑ ❑ Eye/face protection
- ❑ ❑ Fall protection
- ❑ ❑ Respiratory protection
- ❑ ❑ Chemical protection
- ❑ ❑ Electrical protection

Feedback provided:

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# Forms affiliated with your relevant Safety Specifics that have been provided as additional resources, templates, and/or tools for use with your safety program.

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# IMPACT Strategies

## Confined Space Entry Permit

Permit Date: _____ / _____ / _____ Permit Number: _____

Permit Valid until: Date: _____ / _____ / _____ Time: _____ : _____ am / pm

Entry Supervisor Name: _____

Confined Space Location/Description/ID Number: _____

Purpose of Entry: _____

_____

Communication Procedures (including equipment): _____

_____

Rescue & Emergency Procedures *(See phone numbers on Page 2)*: _____

_____

_____

**Hazards of Confined Space:**

| Hazard | YES | NO | Hazard | YES | NO |
|---|---|---|---|---|---|
| Oxygen deficiency | | | Electrical hazard | | |
| Combustible gas/vapor | | | Mechanical hazard | | |
| Combustible dust | | | Engulfment hazard | | |
| Carbon Monoxide | | | Entrapment hazard | | |
| Hydrogen Sulfide | | | Thermal hazard | | |
| Toxic gas/vapor | | | Slip or fall hazard | | |
| Toxic fumes | | | Other: | | |
| Skin- chemical hazards | | | Other: | | |

**Special Requirements and/or Equipment:**

| Special Requirements | YES | NO | Special Equipment | YES | NO |
|---|---|---|---|---|---|
| Hot Work Permit Required | | | Breathing apparatus- respirator | | |
| Lockout/Tagout | | | Escape harness required | | |
| Lines broken, capped, or blanked | | | Tripod emergency escape unit | | |
| Purge-flush and vent | | | Lifelines | | |
| Secure Area-Post and Flag | | | Lighting (explosive proof/low voltage) | | |
| Ventilation | | | PPE- goggles, gloves, clothing, etc. | | |
| Other: | | | Fire Extinguisher | | |
| Other: | | | Other: | | |
| Other: | | | Other: | | |

**Air Monitoring:** ***DO NOT ENTER IF PERMISSIBLE ENTRY LEVELS ARE EXCEEDED***

| Substance Monitored | Time Monitored | Permissible Entry Level (PEL) | Monitoring Results | | | | | |
|---|---|---|---|---|---|---|---|---|
| % of Oxygen | : am / pm | PEL: 19.5% - 23.5% | | | | | | |
| % of LEL | : am / pm | PEL: Less than 10% | | | | | | |
| Carbon Monoxide | : am / pm | PEL: 35 PPM (8 hr.) | | | | | | |
| Hydrogen Sulfide | : am / pm | PEL: 10 PPM (8 hr.) | | | | | | |
| Other: | : am / pm | PEL: | | | | | | |
| Other: | : am / pm | PEL: | | | | | | |
| Other | : am / pm | PEL: | | | | | | |

| Person Testing | Instrument Name | Model | Serial Number | Date Last Calibrated |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

Remarks: _____

_____

**Authorized Entrants:**

_____

_____

_____

_____

_____

_____

**Authorized Attendants:**

_____

_____

_____

_____

_____

_____

**Supervisor Authorization – All conditions satisfied:**

_____ _____

*Signature* *Telephone Number*

Remarks: _____

_____

**Emergency Contact Phone Numbers:**

| | |
|---|---|
| Ambulance | Rescue Team |
| Fire | Other |
| Safety | Other |

# IMPACT Strategies

## Confined Space Entry & Attendant Log

**Permit Information:**

Permit Date: _____ / _____ / _____ Permit Number: _____

Confined Space Location/Description/ID Number: _____

**Special Instructions for Attendants:** _____

_____

_____

**Attendant(s):**

| On Duty Time | Signature | Off Duty Time | Signature |
|---|---|---|---|
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |

**Entrant(s):**

| Enter Time | Signature | Exit Time | Signature |
|---|---|---|---|
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |
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| : am / pm | | : am / pm | |
| : am / pm | | : am / pm | |

# Confined Space Entry & Attendant Log (continued)

## Duties of Authorized Attendants

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Be aware of possible behavioral effects of hazard exposure in authorized Entrants;
- Continuously maintain an accurate count of authorized Entrants in the permit space and accurately identify who is in the permit space;
- Communicate with authorized Entrants as necessary to monitor Entrant status and to alert Entrants of the need to evacuate space;
- Monitor activities inside and outside the space to determine if it is safe for Entrants to remain in the space and order the authorized Entrant to evaluate the permit space immediately under any of the following conditions;
    - Detection of a prohibited condition;
    - Detection of behavioral effects of hazard exposure in an authorized Entrant;
    - Detection of a situation outside the space that could endanger the authorized Entrants; or
    - If the Attendant cannot effectively and safely perform all of his/her required duties.
- Summon rescue and other emergency services as soon as the Attendant determines the authorized Entrant may need assistance to escape from permit space hazards;
    - Take the following actions when an unauthorized person approach or enter a permit space while entry is underway:
    - Warn the unauthorized person that they must stay away from the permit space.
    - Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and
    - Inform the authorized Entrants and the Entry Supervisor if unauthorized persons have entered the permit space;
- Perform non-entry rescue as specified by the plan.
- Perform no duties that might interfere with the Attendant's primary duty to monitor and protect the authorized Entrants.
- Wear a distinctive color (e.g., orange) vest at all times while performing the duties of an Attendant.

# IMPACT Strategies

## Fall Protection - Fall Arrest Equipment Inspection Form

***Inspection Color Code: Q1 – Red  Q2 – White  Q3 – Blue  Q4 - Green***

| ☐ Full Body Harness<br>SN: _____ | ☐ Lanyard<br>SN: _____ | ☐ Anchor Sling/Carabiner<br>SN: _____ | ☐ SRD/PSRD<br>SN: _____ |
|---|---|---|---|
| ***Note:*** *All Fall Arrest equipment must comply with regulatory standards; refer to the applicable regulations for your jurisdiction for specific details. Please contact National Safety Consulting for additional information.* | | | |

| GENERAL FACTORS | ACCEPTED / REJECTED | DETAILS / COMMENTS |
|---|---|---|
| **Labels:**<br>• Inspect for legibility, date of manufacture, manufacturer's name, serial number, model name/number, lot/batch number<br>• Label must be securely attached<br>• No label = Rejected | ☐ Accepted<br>☐ Rejected<br>☐ N/A | |
| **Hardware:** *(Includes D-rings, buckles, keepers, back pads, snap hooks, adjusters, and carabiners)*<br>• Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion, proper orientation, and deformities<br>• Ensure proper operation of all hardware – smooth, unrestricted operation is essential | ☐ Accepted<br>☐ Rejected<br>☐ N/A | |
| **Webbing/Wire Rope:**<br>• Inspect for cuts, burns, tears, holes, abrasion, excessive frays, excessive soiling, discoloration, impact indicators, knots, separation of strands, kinks, and broken strands<br>• Length of lanyards may need to be measured to ensure energy absorbing device has not been activated | ☐ Accepted<br>☐ Rejected<br>☐ N/A | |
| **Stitching:**<br>• Inspect for pulled, missing, or cut stitches<br>• More than one stitch missing = Rejected<br>• DBI standard is more than 2 ripped or cut stitches within the same stitch pattern | ☐ Accepted<br>☐ Rejected<br>☐ N/A | |
| ☐ Inspection **PASSED** | ☐ Inspection **FAILED** | ***NOTE:*** *All Fall Arrest equipment that does not pass inspection MUST be removed from service AND destroyed or returned to the manufacturer for service.* |

**Inspected by:** _____ (Employee Name)  _____ (Competent Person's Signature)

**Assigned to:** _____ (Employee Name)  _____ (Employee Number)

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# IMPACT Strategies

## Fall Protection - Fall Rescue Plan

Project Name: _____ Date of Plan: _____ / _____ / _____

Project Address: _____

_____

**Superintendent:**

_____

**Foreman:**

_____

**Designated Qualified Person:**

_____

**Designated Competent Person:**

_____

### Fall Protection Used on Site

| Equipment | Manufacturer | Model # |
|---|---|---|
| Full Body Harness | | |
| Shock-Absorbing Lanyard | | |
| Work Positioning Lanyard | | |
| Self-Retracting Lifeline (SRL) | | |
| Restraint Line | | |
| Horizontal Lifeline | | |
| Vertical Lifeline | | |
| Incline Line | | |
| Rope Grab | | |
| Deceleration Device | | |

| Equipment | Manufacturer | Model # |
|---|---|---|
| Locking Snap Hooks | | |
| Locking Carabiners | | |
| Controlled Descent / Self-Rescue | | |
| Relief Straps | | |
| Anchorage | | |
| Safety Nets | | |
| Other: | | |
| Other: | | |
| Other: | | |
| Other: | | |

### Communication

What communication systems will be used between the suspended worker and supervisor / rescue team?

☐ Direct voice ☐ Mobile Phone ☐ Two-way Radio

☐ Whistle ☐ Other: _____

**Emergency Contact**

In the event of a fall from height, the supervisor will immediately alert the Rescue Team and First Aid Attendant(s). If the rescue team cannot affect a rescue within 5 minutes, call 9-1-1 at once.

| **Rescue Team Members:** | **First Aid Attendant(s):** |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

**Rescuer Safety**

| | | |
|---|---|---|
| Rescuers are trained and competent to use of rescue equipment | ☐ Yes | ☐ No |
| Rescue training records are current | ☐ Yes | ☐ No |
| Sufficient number of rescuers is available | ☐ Yes | ☐ No |
| Rescue equipment is appropriate for nature of work | ☐ Yes | ☐ No |

Obstructions in the way of reaching the suspended worker (Detail):

_____

_____

**Reaching the Suspended Worker**

| | | |
|---|---|---|
| ☐ Rescue ladder | ☐ Pull up through floor/roof | ☐ Elevator |
| ☐ Aerial equipment from the ground | ☐ Pull in through window/balcony | ☐ Crane man basket |
| ☐ Climb/Repel down structure | ☐ Keys to building & roof | ☐ Remote rescue kit |
| ☐ Suspended access equipment | | |

**Equipment needed to ensure rescue within 5 minutes to minimize suspension trauma**

| | | |
|---|---|---|
| ☐ Rescue ladder | ☐ Rescue kit – Haul-up | ☐ Descent rescue kit |
| ☐ Aerial truck | ☐ Elevated work platform | ☐ Crane man basket |
| ☐ Rescue kit - Winch | ☐ Low height rescue kit | ☐ Stretcher |
| ☐ Suspended access equipment | ☐ Climbing/Rope rescue system | ☐ First aid kit |

**If Suspended Worker is injured**

| | | |
|---|---|---|
| Injured suspended worker can be rescued within 5 minutes | ☐ Yes | ☐ No |
| Qualified first aid respondent who understands suspension trauma present | ☐ Yes | ☐ No |
| Proximity to emergency care services has been taken into consideration | ☐ Yes | ☐ No |
| Proximity to a hospital services has been taken into consideration | ☐ Yes | ☐ No |

Who will alert emergency services and the hospital? (Detail):

_____

_____

**Protecting others during rescue**

☐ Set up protective cones/barriers ☐ Assign someone to direct traffic ☐ Close the road/site

☐ Other:

_____

_____

**Protection of accident scene**

☐ Prevent further injury or damage ☐ Set up barriers ☐ Preserve wreckage

☐ Take photographs ☐ Notify Safety Department ☐ Notify Employer

Who will conduct the Incident Investigation? (Detail):

_____

_____

Who will quarantine all involved fall-arrest equipment further investigation? (Detail):

_____

_____

**Other Considerations**

Unusual features of building / structure (Detail):

_____

_____

Expected weather conditions (Detail):

_____

_____

Language barriers (agency / contract staff) (Detail):

_____

_____

_____

**Approval of Fall Rescue Plan**

Print Name: _____ Date: _____ / _____ / _____

Signature: _____ Phone: _____

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# IMPACT Strategies

## Hazard & Risk Assessment Form

Certificate of Hazard Assessment Statement for: _____

| Individual Tasks | Risk Level per Matrix | Hazards Associated with Task | Procedures & Engineering and/or Administrative Controls | Appropriate PPE for Task |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |

## Hazard & Risk Assessment Form (cont'd)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | I certify that a worksite Hazard & Risk Assessment was performed for the Jobsite listed above | Date |
| | | | | | | | | | | | | | Printed name of Safety Manager |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Signature of Safety Manager |

# IMPACT Strategies

## Hazard & Risk Assessment - Job Safety Analysis Form

| | | | |
|---|---|---|---|
| Location/Dept: | Date: | ☐ New ☐ Revision JSA NO: | |
| Task: | | Supervisor: | Analysis By: |
| Team Members: | | Reviewed By: | Approved By: |
| Specific rules and procedures to be followed: | | | |

| Sequence of Basic Job Steps | Potential Injury or Hazards | Recommendations to Eliminate or Reduce Potential Hazards |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Check Items Required to do this Job**

☐ Safety Glasses ☐ Leather Gloves ☐ Face Shield ☐ Fire Extinguisher ☐ Atmospheric Testing
☐ Hart Hats ☐ Work Vest ☐ Goggles (Type?) ☐ Lockout/Tagout ☐ Traffic Controls
☐ Safety Shoes ☐ Fall Harness ☐ Flame Resistant Clothing ☐ Warning Signs ☐ Other

## Instructions for Completing the Hazard & Risk Assessment - Job Safety Analysis Form

Select an employee to help you with the JSA: someone who is experienced in the job, willing to help and a good communicator. The employees play an important role in helping you identify job steps and hazards. In summary, to complete this form you shall consider the purpose of the job, the activities it involves, and the hazards it presents. In addition, observing an employee performing the job, or "walking through" the operation step by step may give additional insight into potential hazards. Here's how to do each of the three parts of a Job Safety Analysis:

| SEQUENCE OF BASIC JOB STEPS | POTENTIAL HAZARDS | RECOMMENDED ACTION OR PROCEDURE |
|---|---|---|
| Examining a specific job by breaking it down into a series of steps or tasks, will enable you to discover potential hazards employees may encounter.<br><br>Each job or operation will consist of a set of steps or tasks. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. To determine where a step begins or ends, look for a change of activity, change in direction or movement.<br><br>Picking up the box from the conveyor and placing it on a hand truck is one step. The next step might be to push the loaded hand truck to the storage area (a change in activity). Moving the boxes from the truck and placing them on the shelf is another step. The final step might be returning the hand truck to the receiving area.<br><br>Be sure to list all the steps needed to perform the job. Some steps may not be performed each time; an example could be checking the casters on the hand truck. However, if that step is generally part of the job it shall be listed. | A hazard is a potential danger. The purpose of the Job Safety Analysis is to identify ALL hazards – both those produced by the environment or conditions and those connected with the job procedure. To identify hazards, ask yourself these questions about each step:<br><br>Is there a danger of the employee striking against, being struck by, or otherwise making injurious contact with an object?<br><br>Can the employee be caught in, by or between objects? Is there a potential for slipping, tripping, or falling?<br><br>Could the employee suffer strains from pushing, pulling, lifting, bending, or twisting?<br><br>Is the environment hazardous to safety and/or health (toxic gas, vapour, mist, fumes, dust, heat, or radiation)?<br><br>Close observation and knowledge of the job is important. Examine each step carefully to find and identify hazards – the actions, conditions, and possibilities that could lead to an accident. Compiling an accurate and complete list of potential hazards will allow you to develop the recommended safe job procedures needed to prevent accidents. | Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury or occupational illness.<br><br>Begin by trying to: (1) engineer the hazard out; (2) provide guards, safety devices, etc.; (3) provide personal protective equipment; (4) provide job instruction training; (5) maintain good housekeeping; (6) ensure good ergonomics (positioning the person in relation to the machine or other elements).<br><br>List the required or recommended personal protective equipment necessary to perform each step of the job.<br><br>Give a recommended action or procedure for each hazard.<br><br>Serious hazards shall be corrected immediately. The JSA shall then be changed to reflect the new conditions.<br><br>Finally, review your input on all three columns for accuracy and completeness with affected employees. Determine if the recommended actions or procedures have been put in place. Re-evaluate the job safety analysis as necessary. |

# IMPACT Strategies

## Personal Protective Equipment Assessment

Company: _____

Location: _____ Date: ___ / ___ / ___

Observe the layout of the work area, operations being performed and any hazards present. This form aligns the body part that could potentially be exposed to a hazard and it is addressed by putting a check mark in either the yes or no box.

### Head Hazards — Description of hazards:

Tasks that can cause head hazards include, but are not limited to, working below other workers who use tools and materials which could fall, working on energized electrical equipment, welding, working with chemicals and working under machinery or processes which might cause materials or objects to fall.

| | | | |
|---|---|---|---|
| Dust/Flying Debris | ☐ Yes | ☐ No | _____ |
| Chemical Exposure | ☐ Yes | ☐ No | _____ |
| Electrical Shock | ☐ Yes | ☐ No | _____ |
| Impact | ☐ Yes | ☐ No | _____ |
| UV/IR Radiation | ☐ Yes | ☐ No | _____ |
| Low Clearance | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

### Eye and Face Hazards — Description of hazards:

Tasks that can cause eye or face hazards include, but are not limited to, working with chemicals, chipping, grinding, furnace operations, sanding, welding, UV radiation and woodworking.

| | | | |
|---|---|---|---|
| Dust/Flying Debris | ☐ Yes | ☐ No | _____ |
| Chemical Exposure | ☐ Yes | ☐ No | _____ |
| High Heat / Cold | ☐ Yes | ☐ No | _____ |
| Impact | ☐ Yes | ☐ No | _____ |
| UV/IR Radiation | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

### Hearing Hazards — Description of hazards:

Tasks that can cause hearing hazards include, but are not limited to, working with or around loud machinery or tools in mechanical rooms, machining, grinding, sanding, pneumatic equipment, grounds equipment, generators, chillers, motors, saws, jackhammers or similar equipment.

| | | | |
|---|---|---|---|
| Loud Noise | ☐ Yes | ☐ No | _____ |
| Impact Noise | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

***Personal Protective Equipment Assessment – Page 2 of 3***

**Respiratory Hazards** **Description of hazards:**

Tasks that are associated with respiratory hazards include, but are not limited to, welding, grinding spray painting, working in confined spaces, chemical processing and potential exposure to asbestos, lead, silica or other particulate hazards. Exposures to these and other respiratory hazards can make you sick or can be deadly. These hazards come in the form of gases, vapors, dusts, mists, fumes, smoke, sprays and fog.

| | | | |
|---|---|---|---|
| Chemical Exposure – Gases or Vapors | ☐ Yes | ☐ No | _____ |
| Dust or Particulate | ☐ Yes | ☐ No | _____ |
| Fumes | ☐ Yes | ☐ No | _____ |
| Oxygen Deficiency | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

**Hand and/or Arm Hazards** **Description of hazards:**

Tasks that can cause hand hazards include, but are not limited to, exposure to cut or abrasion hazards, working with chemicals, working with very hot or cold objects or materials and exposure to sharps.

| | | | |
|---|---|---|---|
| Chemical Exposure | ☐ Yes | ☐ No | _____ |
| Cuts/Abrasion | ☐ Yes | ☐ No | _____ |
| Puncture | ☐ Yes | ☐ No | _____ |
| High Heat/Cold | ☐ Yes | ☐ No | _____ |
| UV/IR Radiation | ☐ Yes | ☐ No | _____ |
| Electrical Shock | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

**Foot and/or Leg Hazards** **Description of hazards:**

Tasks that can cause foot hazards include, but are not limited to, carrying or handling materials that could be dropped, performing manual material handling, welding, cutting, electrical work and working with chemicals.

| | | | |
|---|---|---|---|
| Chemical Exposure | ☐ Yes | ☐ No | _____ |
| Compression | ☐ Yes | ☐ No | _____ |
| Impact | ☐ Yes | ☐ No | _____ |
| Puncture | ☐ Yes | ☐ No | _____ |
| Electrical Shock | ☐ Yes | ☐ No | _____ |
| Slippery/Wet Surfaces | ☐ Yes | ☐ No | _____ |
| High Heat/Cold | ☐ Yes | ☐ No | _____ |
| Molten Metal | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

***Personal Protective Equipment Assessment – Page 3 of 3***

**Other Hazards Requiring PPE** **Description of hazards:**

Do hazards exist that require PPE for the Body? Chemical exposure, abrasive blasting, welding, cutting or brazing, chipping, sanding or grinding, electrical arc hazards and bloodborne pathogens are some examples of hazards that can affect the body. These hazards may require PPE to protect clothing and skin from harm or contamination.

| | | | |
|---|---|---|---|
| Chemical Exposure | ☐ Yes | ☐ No | _____ |
| High Heat/Cold | ☐ Yes | ☐ No | _____ |
| Hazardous Particulate ie: Asbestos/Lead/etc. | ☐ Yes | ☐ No | _____ |
| Non-Hazardous Particulate | ☐ Yes | ☐ No | _____ |
| Electrical Arc | ☐ Yes | ☐ No | _____ |
| Cuts/Abrasions | ☐ Yes | ☐ No | _____ |
| Other: _____ | ☐ Yes | ☐ No | _____ |

I certify that on the date noted on page one (1) of this form, a comprehensive assessment of workplace hazards requiring the use of Personal Protective Equipment was conducted at this facility to the best of my knowledge, and based on the current conditions.

Signature: _____ Date: _____ / _____ / _____

Print Name: _____ Title: _____

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# IMPACT Strategies

## Scaffolding Inspection Checklist

Scaffold Location

Inspection Date:

Name of Inspector (Competent Person signature

| Inspection Item | Yes | No | Action/Comment |
|---|---|---|---|
| A completed scaffold status tag is attached near the access point. | | | |
| Ladder, stairway, or special-design framing is installed for access. | | | |
| Scaffold unit is plumb and level, and resting on stable footing and a firm foundation (including base plates/mud sills). | | | |
| Diagonal cross bracing is in place to support legs. | | | |
| Guying, tying, or bracing is installed to maintain scaffold unit stability where height-to-base size exceeds a 4:1 ratio. | | | |
| Visual inspection is completed for the presence of loose, damaged, or missing components (such as locking pins, planking, access, framing, or bracing). | | | |
| Working level platform(s) is fully planked between guardrails and secured to prevent movement. | | | |
| Platform is free of debris and slipping/tripping hazards. | | | |
| Platform guardrails are firmly in place on all open sides/ends, where required. | | | |
| Falling object protection is provided by installed toe boards, screening at the working platform level(s), area barricades, or canopies. | | | |
| Fall protection documentation is reviewed, where required. | | | |
| Other safety hazards are controlled (such as pinch points, hot surfaces, or electrical). | | | |

## Scaffold Inspection Checklist (cont'd)

- Use scaffolds only for their intended purpose.
- Work from tagged scaffolds only. Comply with special conditions or the additional controls noted on the access tag. Do not modify or remove a scaffold system, component, or status tag. Notify supervision immediately if a scaffold is damaged, weakened, or otherwise deficient.
- Ensure the scaffold is inspected:
    - When in use
    - On each work shift
    - Before it is used
- Do not use unstable objects or makeshift devices to increase the working height of the scaffolds. Use portable ladders to increase the working height only after a Competent Person has determined that the stability of the structure has not been compromised and adequate fall protection is in place.
- Do not straddle, stand on, or work outside the guardrail.
- Use mobile scaffolds only on firm, level surfaces. Lock the casters or wheels before using mobile scaffolds.
- Do not "ride" on scaffold while it is being moved.
- Remove or secure any tools or materials before moving or relocating a scaffold.
- Use designated access means to descend or ascend a scaffold (stairs, attached ladder, or specially designed end frames). Do not climb cross-bracing or side rails for access.
- Keep only the tools and materials necessary to perform the task on the platform. Control slipping and tripping hazards by removing or securing tools or materials.
- Use fall protection systems (guardrail systems or personal fall arrest systems) when working six (6) feet or more above a lower level.
- Do not position yourself or use tools or equipment where there is a possibility of contacting an energized overhead line. Contact the Alcoa operations electrical department or responsible electrical utilities owner for additional requirements if any portion of your body, or the tools, or the materials will come within 20 feet of the energized line.

IMPACT STRATEGIES

# IMPACT Strategies

National Safety CONSULTING

## Silica - Individual Equipment / Task Exposure Control Plan

***Fill out this form ENTIRELY for EACH Job / Task that may be affected by and/or create Respirable Silica***
***Plan should be reviewed frequently / regularly by a designated Competent Person***

Project Name: _____ Project Number:_____

☐ New Plan ☐ Review of Existing Plans Date: ____ / ____ / ____ Time: ____ : ____ AM / PM

Source of respirable silica: _____

Equipment / Task Number from OSHA Standard Table 1 _____ ** OR ** Description of job / task:

_____

_____

ALL personnel on the task or working in affected area are trained in Silica Exposure? ☐ Yes ☐ No

Description of control method(s) used to protect worker(s) from exposure:

Engineering / Work Practice Controls ☐ OSHA Standard Table 1 or Other

_____

_____

_____

_____

Respiratory Protection Controls ☐ OSHA Standard Table 1 or Other

_____

_____

Other Personal Protective Equipment (PPE) required:

_____

_____

Housekeeping Method(s) used to control exposure:

_____

_____

Method(s) to restrict access to affected area:

_____

_____

---

Competent Person Completing Plan:

_____ _____ ____ / ____ / ____

PRINT SIGNED DATE

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# IMPACT Strategies

## Silica - Inspection of Exposure Control Plan

***Complete inspection prior to beginning job / task, and then periodically during the job / task***

| Engineering / Work Practice Controls | | Problem noted (DETAIL) | Problem corrected (DETAIL) |
|---|---|---|---|
| Available at site | ☐ Y ☐ N | | |
| Operating correctly / appropriately | ☐ Y ☐ N | | |
| Effective in dust control | ☐ Y ☐ N | | |
| **Respiratory & Other Required PPE** | | | |
| Available at site | ☐ Y ☐ N | | |
| Used appropriately | ☐ Y ☐ N | | |
| In place before work starts | ☐ Y ☐ N | | |
| **Housekeeping** | | | |
| Vacuum used properly | ☐ Y ☐ N | | |
| Large pieces picked up | ☐ Y ☐ N | | |
| Pre-filters in place | ☐ Y ☐ N | | |
| Vacuum attachments used | ☐ Y ☐ N | | |
| Collection bags in place | ☐ Y ☐ N | | |
| Waste properly disposed of | ☐ Y ☐ N | | |
| **Access Restricted** | | | |
| Access to exposure adequately restricted | ☐ Y ☐ N | | |
| **Other** | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Competent Person Completing Inspection:

_____ _____ _____ / _____ / _____

PRINT SIGNED DATE

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IMPACT STRATEGIES

# IMPACT Strategies

National Safety CONSULTING

## Silica - Multiple Equipment / Task Exposure Control Plan

***Fill out this form ENTIRELY for projects containing MULTIPLE Jobs / Tasks that may be affected by and/or create Respirable Silica** (include a copy of OSHA Standard Table 1 for reference)*

***Plan should be reviewed frequently / regularly by a designated Competent Person***

Project Name: _____ Project Number:_____

☐ New Plan ☐ Review of Existing Plans Date: ____ / ____ / ____ Time: ____ : ____ AM / PM

Project Manager: _____ Superintendent:_____

Supervisor:_____ Competent Person: _____

Scope of Work: _____

_____

Project Start Date: _____ / _____ / _____ Estimated End Date: _____ / _____ / _____

ALL personnel on the task or working in affected area are trained in Silica Exposure? ☐ Yes ☐ No

Jobs / Tasks Being Conducted and Controls to be taken:

| **OSHA Standard Table 1 Equipment/Task Number **OR** Task Description** | **Exposure Control Method(s) Description** *(Use Chart A below for Codes to be used, separated by commas)* | | | | |
|---|---|---|---|---|---|
| | **Engineering / Work Practice** | **Respiratory** | **Housekeeping** | **Other PPE** | **Access Restriction** |
| # _____ ** OR ** Description: | ☐ OSHA Table 1 **OR** Description | ☐ OSHA Table 1 **OR** Description | Description | Description) | Description) |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |

## Jobs / Tasks Being Conducted and Controls to be taken (cont'd):

| OSHA Standard Table 1 Equipment/Task Number **OR** Task Description | Exposure Control Methods *(Use Chart A for Codes to be used, separated by commas)* | | | | |
|---|---|---|---|---|---|
| | Engineering / Work Practice | Respiratory | Housekeeping | Other PPE | Access Restriction |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |
| # _____ ** OR ** | ☐ Table 1 **OR** | ☐ Table 1 **OR** | | | |

**Chart A – Exposure Control Method Codes**
***(Add control methods used that are not listed)***

| Engineering controls | | Respiratory Protection | | Housekeeping | | Other PPE | | Access Restriction | |
|---|---|---|---|---|---|---|---|---|---|
| E1 | Exhaust fan | R1 | None | H1 | Wet sweeping | P1 | Gloves | A1 | Signage |
| E2 | LEV | R2 | APF 5 | H2 | Floor sweep compounds | P2 | Coveralls | A2 | Barriers |
| E3 | Dust Shroud(s) | R3 | APF 10 | H3 | Filtered vacuuming | P3 | Eye Protection | A3 | Work Schedules |
| E4 | Water Spray | R4 | APF 25 | H4 | Disposal bags | P4 | Rubber Boots | A4 | |
| E5 | Integrated Water Delivery System | R5 | APF 50 | H5 | | P5 | | A5 | |
| E6 | Disposable PPE | R6 | APF 1,000 | H6 | | P6 | | A6 | |
| E7 | | R7 | | H7 | | P7 | | A7 | |
| E8 | | R8 | | H8 | | P8 | | A8 | |

## Competent Person Completing Plan:

_____ _____ _____ / _____ / _____

PRINT SIGNED DATE

## Voluntary Respirator Program – Appendix D to Sec. 1910.134 (Mandatory)

### Information for Employees Using Respirators When Not Required Under the Standard

***To be given to Employees participating in the Voluntary Respiratory Program***

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.
*[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]*

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# IMPACT Strategies

## Voluntary Respirator Program – Appendix D Acknowledgement

*To be signed by the employee and returned to the Company*

I certify that IMPACT Strategies provided to me a copy of Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard.

I have read the Appendix, understand it, and agree to:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging.
3. Not wear a respirator into atmospheres containing contaminants for which the respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of my respirator so that I do not mistakenly use someone else's respirator.

Print Name: _____ Date: _____ / _____ / _____

Signature: _____

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## Welding, Cutting & Hot Work Inspection Checklists

### WELDING

- ☐ Are only authorized and trained personnel permitted to use welding, cutting or brazing equipment? 29 CFR 1910.252(a)(2)(xiii)(C)
- ☐ Does each operator have a copy of the appropriate operating instructions and are they directed to follow them? 29 CFR 1910.253(a)(4), (d)(6), (f)(7)(A)
- ☐ Are pressure-reducing regulators used only for the gas and pressures for which they are intended? 29 CFR 1910.253(e)(6)(i)
- ☐ Is grounding of the machine frame and safety ground connections of portable machines checked periodically? 29 CFR 1910.254(d)(3); 255(b)(9), (c)(6)
- ☐ Are only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) used? 29 CFR 1910.253(a)(3)
- ☐ Is a check made for adequate ventilation in and where welding or cutting is performed? 29 CFR 1910.252(c)(1)(iii), (2)(i)
- ☐ When working in confined places, are environmental monitoring tests taken and means provided for quick removal of welders in case of an emergency? 29 CFR 1910.252(c)(4)

### WELDING EQUIPMENT

- ☐ Is necessary personal protective equipment available? 29 CFR 1910.252(b)(2)
- ☐ Are only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) used? 29 CFR 1910.253(a)(3)
- ☐ Is open circuit (No Load) voltage of arc welding and cutting machines as low as possible and not in excess of the recommended limits? 29 CFR 1910.254(b)(3)(i)-(iv)
- ☐ Is grounding of the welding machine frame and safety ground connections of portable machines checked periodically? 29 CFR 1910.254(d)(3); .255(b)(9), (c)(6)

### EQUIPMENT MARKINGS

- ☐ Is red used to identify acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose? 29 CFR 1910.253(e)(5)(i)
- ☐ Are empty compressed gas cylinders appropriately marked and their valves closed? 29 CFR 1910.101(b); .253(b)(1)(ii), (2)(iii), (5)(ii)(H)

### COMPRESSED GAS CYLINDER MANAGEMENT

- ☐ Are compressed gas cylinders regularly examined for obvious signs of defects, deep rusting, or leakage? 29 CFR 1910.254(d)(4); 255(e)
- ☐ Is care used in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage? 29 CFR 1910.253 (b)(2)(ii), (5)(iii)(B)
- ☐ Are liquefied gases stored and shipped valve-end up with valve covers in place? 29 CFR 1910.253(b)(5)(iii)(A)
- ☐ Before a regulator is removed, is the valve closed and gas released from the regulator? 29 CFR 1910.253(b)(5)(iii)(D)
- ☐ Are cylinders, cylinder valves, couplings, regulators, hoses, and apparatus kept free of oily or greasy substances? 29 CFR 1910.253(b)(5)(i)

- ☐ Are the cylinders kept away from elevators, stairs, or gangways? 29 CFR 1910.253(b)(2)(ii)
- ☐ Is it prohibited to use cylinders as rollers or supports? 29 CFR 1910.253(b)(5)(ii)(K)
- ☐ Is care taken not to drop or strike cylinders? 29 CFR 1910.253(b)(5)(ii)(B)
- ☐ Unless secured on special trucks, are regulators removed and valve-protection caps put in place before moving cylinders? 29 CFR 1910.253(b)(5)(ii)(D)
- ☐ Do cylinders without fixed hand wheels have keys, handles, or non-adjustable wrenches on stem valves when in service? 29 CFR 1910.253(b)(5)(ii)(E)
- ☐ Are empty compressed gas cylinders appropriately marked and their valves closed? 29 CFR 1910.253(b)(1)(ii), (2)(iii), (5)(ii)(H)
- ☐ Are fuel gas cylinders and oxygen cylinders separated by distance, fire resistant barriers, etc., while in storage? 29 CFR 1910.253(b)(4)(iii)

**PERSONAL PROTECTIVE EQUIPMENT**

- ☐ Are all employees required to use personal protective equipment (PPE) as needed? 29 CFR 1910.132(a)
- ☐ Is PPE functional and in good repair? Does it have ANSI or ASTM specifications marked on it? 29 CFR 1910.132(e)
- ☐ Are employees exposed to the hazards created by welding, cutting, or brazing operations protected with personal protective equipment and clothing? 29 CFR 1910.252(b)(3)
- ☐ Is personal protective equipment provided and are all employees required to use PPE as needed to protect against eye and face injury? 29 CFR 1910.132(a); .133(a)(1)
- ☐ Are protective goggles or face shields provided and worn where there is any danger of flying particles or corrosive materials? 29 CFR 1910.133(a)(1)
- ☐ Are approved safety glasses required to be worn at all times in areas where there is a risk of eye injuries such as punctures, abrasions, contusions, or burns? 29 CFR 1910.133(a)(2)
- ☐ Are appropriate safety glasses, face shields, etc., used while using hand tools or equipment which might produce flying materials or be subject to breakage? 29 CFR 1910.133(a)(1)
- ☐ Are employees who need corrective lenses (glasses or contacts) in working environments having harmful exposures required to wear only approved safety glasses, protective goggles, or use other medically approved precautionary procedures? 29 CFR 1910.133(a)(3)
- ☐ Is appropriate foot protection required where there is the risk of foot injury? 29 CFR 1910.132(a); .136(a)
- ☐ Is appropriate hand protection required where there is the risk of hand injury? 29 CFR 1910.132(a); .138(a)
- ☐ Are hard hats provided and worn where danger of falling objects exists? 29 CFR 1910.135(a)(1)
- ☐ Are hard hats inspected periodically for damage to the shell and suspension system? 29 CFR 1910.135(b)

**AIR EMISSIONS**

- ☐ If welding creates hazardous air emissions, is the welding area appropriately marked to indicate this? 29 CFR 1910.252(c)(iv)(A)-(C)
- ☐ If welding creates hazardous air emissions, have ventilation or local exhaust systems been provided to keep fumes below the maximum allowable concentrations? 29 CFR 1910.252(c)(iii)

**FIRE PREVENTION**

- ☐ Are precautions taken to prevent the mixture of air or oxygen with flammable gases, except at a burner or in a standard torch? 29 CFR 1910.253(a)(1)
- ☐ Are signs reading DANGER NO SMOKING, MATCHES, OR OPEN LIGHTS or the equivalent, posted in welding areas?
- ☐ Are provisions made to never crack a fuel-gas cylinder valve near sources of ignition? 29 CFR 1910.253(b)(5)(iii)(C)
- ☐ When welding is done on metal walls, are precautions taken to protect combustibles on the other side? 29 CFR 1910.252(a)(2)(x)
- ☐ Before hot work is begun, are used drums, barrels, tanks, and other containers so thoroughly cleaned that no substances remain that could explode, ignite, or produce toxic vapors? 29 CFR 1910.252(a)(3)(i)
- ☐ If welding gases are stored, are oxygen and acetylene separated by a 5-foot noncombustible barrier? 29 CFR 1910.253(b)(4)(i)-(iii)
- ☐ Are compressed gas cylinders kept away from sources of heat? 29 CFR 1910.253(b)(2)(i)
- ☐ Is combustible scrap, debris, and waste stored safely and removed from the work site promptly? 29 CFR 1910.252 (a)(2)(i), (vii), (xiv)(C)(2)
- ☐ Are fire watchers assigned when welding or cutting is performed in locations where a serious fire might develop? 29 CFR 1910.252(a)(2)(iii)(A)
- ☐ Are provisions made for personnel to perform fire watch duties under appropriate circumstances? 29 CFR 1910.252(d)(4)(iv)

**FIRE ALARM SYSTEMS**

- ☐ If you have a non-supervised fire alarm system, is it tested bimonthly? 29 CFR 1910.165(d)(2)
- ☐ If you have a supervised employee alarm system (that is, does the alarm have a device that indicates system malfunction), is it tested yearly? 29 CFR 1910.165(d)(4)

**PORTABLE FIRE EXTINGUISHERS**

- ☐ Are appropriate fire extinguishers mounted, located, and identified so that they are readily accessible to employees? 29 CFR 1910.157(c)(1)
- ☐ Are all fire extinguishers inspected and recharged regularly, and noted on the inspection tag? 29 CFR 1910.157(e)
- ☐ Are portable fire extinguishers provided in adequate number and type? 29 CFR 1910.157(d)

**AISLES**

- ☐ Are aisles marked? 29 CFR 1910.22(b)(2)
- ☐ Are aisle widths maintained? 29 CFR 1910.22(b)(1)
- ☐ Are aisles in good condition? 29 CFR 1910.22(b)(1)
- ☐ Are aisles and passageways properly illuminated? 29 CFR 1910.22

Are aisles kept clean and free of obstructions? 29 CFR 1910.22(b)(1)

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# IMPACT Strategies

## Welding, Cutting & Hot Work Permit

This Hot Work permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing and Welding.

**Instructions:**

1. Verify precautions listed below or do not proceed with work.
2. Complete this permit and issue to person(s) performing the work.
3. Retain this copy in the project file.

**Name of Company**

| / / | : AM PM | : AM PM |
|---|---|---|
| **Date** | **Time Issued** | **Permit Expires:** |

**Location/Building & Floor (Be SPECIFIC)**

**Name of Person Authorizing Hot Work:**

I verify that the hot work location has been examined and the precautions checked on the Precautions Checklist to minimize the chance of fire.

Name

Signature

**Name of Person(s) Performing Hot Work:**

**Description of Work Being Performed:**

**Person(s) Performing Fire Watch:**

**Other Information:**

| Y | N/A | |
|---|---|---|
| ☐ | ☐ | Security has been contacted to ensure that sprinklers are not impaired. |

**Requirement within 35 ft. (11 m.) of work**

| | | |
|---|---|---|
| ☐ | ☐ | Flammable liquids, combustible dust, and oily deposits removed. |
| ☐ | ☐ | Explosive atmosphere in area eliminated. |
| ☐ | ☐ | Floors swept clean. |
| ☐ | ☐ | Combustible building construction covered with fire-resistive covering. |
| ☐ | ☐ | Remove other combustible materials where possible. Otherwise protect them with fire-resistive covering. |
| ☐ | ☐ | All wall, floor, and machinery openings covered. |
| ☐ | ☐ | Fire-resistive tarpaulins suspended beneath work. |
| ☐ | ☐ | Electrical cable trays and switch gear protected with fire-resistive tarpaulins or metal shields. |
| ☐ | ☐ | Ducts and conveyors, systems cleaned, protected and/or shut off. |

**Work on walls or ceilings**

| | | |
|---|---|---|
| ☐ | ☐ | Construction is noncombustible and without combustible covering or insulation. |
| ☐ | ☐ | Combustibles on other side of walls moved away or a fire watch provided on the opposite side of the wall from the work. |

**Work on enclosed equipment**

| | | |
|---|---|---|
| ☐ | ☐ | Enclosed equipment cleaned of all combustibles. |
| ☐ | ☐ | Container purged of flammable liquids/vapors. |
| ☐ | ☐ | Pressurized vessels, piping, and equipment removed from service, isolated and verified. |

**Fire Watch / Hot Work area monitoring**

| | | |
|---|---|---|
| ☐ | ☐ | Fire watch will be provided during and for 60 minutes after hot work is completed. |
| ☐ | ☐ | The hot work area will be periodically inspected during the 3 hours after the fire watch leaves the high hazard area. |
| ☐ | ☐ | Proper class of extinguisher must be within 10 feet. |
| ☐ | ☐ | Fire watch is trained in their duties. |
| ☐ | ☐ | Fire watch is required for adjoining area above and below. |

**Other precautions taken:**

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## Supplemental Safety Program Forms

# Forms affiliated with your Supplemental Safety Programs that have been provided as additional resources, templates, and/or tools for use with your safety program.

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# IMPACT Strategies

## Infectious Disease - Exposure Screening Form

Date Completed _____ Name of Screener _____

Person's Name _____ Employer _____

Have you recently traveled outside the STL region to any domestic or international location? Yes No

If yes, where, and by what mode of transportation?

Have you or anyone in your household been in contact with, or had any close contact with a suspected OR confirmed case of COVID-19 infection within the past 14 days? Yes No

Are you currently experiencing any of the following symptoms: Fever, Chills, Muscle Pain, Sore Throat, Loss of taste or smell, Cough or Shortness of Breath? Yes No

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### Infectious Disease - Program Revision History

## Infectious Disease Preparedness and Response Plan

| Date | Revision # | Brief Description of any Changes | Review Completed By |
|---|---|---|---|
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# IMPACT Strategies

## Infectious Disease - Visitor Log

Worksite: _____

| Date | Visitor Name | Time IN | Time OUT | Notes |
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# IMPACT Strategies

## Infectious Disease - Worksite Assignment Tracking Form

Worksite: _____

| Employee Name | Where on site? (office, trailer, etc.) | Start Date | End Date | Notes |
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# IMPACT Strategies

## Safety Manual Acknowledgement Form

***To be signed by the employee and returned to the Company***

The rules, programs, and procedures stated above in the IMPACT Strategies safety manual are not intended to cover all the possible situations you will face on the job. IMPACT Strategies encourages and expects employees to act in a safe and responsible manner at all times, both on and off the job.

I have read the IMPACT Strategies Safety Manual, understand it, and agree to abide by it. I understand that violation of these rules may lead to disciplinary action, including termination of employment.

Signature: _____ Date: _____ / _____ / _____

Print Name: _____

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## Chapter 10 ADDENDUMS & ADDITIONS

Write in each Addendum/Addition as received

_____

_____

_____

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# End Safety Manual

National Safety
CONSULTING