



SAFETY MANUAL

— BUILT ON SAFETY. DRIVEN BY CARE. —

SAFETY

—
INTEGRITY

—
ACCOUNTABILITY

—
TEAMWORK

—
EXCELLENCE



THINK SAFE



WORK TOGETHER



ACT RESPONSIBLY



CARE FOR EACH OTHER



GO HOME SAFE

— SAFE TODAY. STRONG TOMORROW. —



INDEX

GENERAL POLICY STATEMENT	2
GENERAL SAFETY RULES FOR CRAFTWORKERS	5
COMPREHENSIVE DRUG AND ALCOHOL ABUSE POLICY	17
WRITTEN HAZARDOUS MATERIAL COMMUNICATION PROGRAM	26
FALL PROTECTION PROGRAM	31
AERIAL WORK PLATFORM POLICY	36
CRANE AND WIRE ROPE INSPECTION PROGRAM	44
RESPIRATORY PROTECTION PROGRAM	48
Respirable Silica Safety Program	63
RESPIRABLE SILICA SAFETY TRAINING QUIZ	71
LEAD COMPLIANCE PROGRAM	72
Employee Lead Training From	82
CONFINED SPACE ENTRY PROGRAM	86
Confined Space Entry Permit	95
ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM	97
STATIC ELECTRICITY	102
WEEKLY TOOLBOX TALKS	106
SAFETY VIOLATION PROGRAM AND ACCIDENT REPORTING	114
RETURN TO WORK PROGRAM	119
OSHA INSPECTION GUIDELINES	123
SITE SPECIFIC HAZARD MANAGEMENT PLAN	128
Employee Acknowledgement	133



GENERAL POLICY STATEMENT

It is PHEIFER BROS. CONST. CO., INC. policy to provide a healthy environment and safe place of employment for all employees and to abide and enforce all applicable regulations as they pertain to our operation.



Responsibilities:

Management will...

1. See to it that the above stated policy can be accomplished.
2. Fully enforce this policy and discharge any employee willfully disregarding it.
3. Conduct safety inspections, using as a guide the Pheifer Bros. OSHA-Self Inspection Forms and file all required reports.
4. Fully investigate any and all accidents and file full reports on each.
5. Establish and provide safety training for personnel.

Safety Director will...

1. Have complete responsibility for work safety and report directly to the President.
2. See to it that all necessary personal protective equipment, job safety materials, and first aid equipment is made available where required.
3. Instruct supervisory personnel to see that safe practices are followed, and safe work conditions maintained
4. Inform supervisory personnel that they are not to require or permit their personnel to make changes to safety requirements, but rather they instruct their employees in proper and safe procedures.
5. See to it that supervisory personnel are individually instructed regarding their safety responsibilities.
6. Review all accidents with supervisory personnel, file full reports, and see that corrective action is taken immediately.
7. Have available copies of all OSHA and other applicable federal and state regulations.
8. Have a working knowledge of the laws pertaining to safety and their basic requirement.



Pheifer Brothers Job Foreman will...

1. See to it that the entire safety program is carried out at the work level.
2. See that the employees commit no unsafe practices.
3. Make sure no unsafe conditions exist in their work area.
4. Make sure that necessary protective equipment is on hand and used.
5. Instruct all personnel in safe practices, procedures and job safety requirements - following up and insisting on compliance.
6. Discuss safety in personal contacts with employees. Conduct tailgate conferences and encourage safety.
7. See that all injuries are properly cared for and reported promptly.
8. Thoroughly investigate all accidents, file complete reports and correct the causes immediately.

Pheifer Brothers Employees will...

1. Work according to good safety practices as posted, instructed and discussed.
2. Refrain from any unsafe act that might endanger them or their fellow employees.
3. Use all safety devices required for their protection.
4. Report any unsafe situation or act to their supervisor or safety person immediately.
5. Assume their share of responsibility for thoughtless or deliberate acts that cause injury to themselves or their fellow employees.
6. Be a safe worker both on and off the job.



GENERAL SAFETY RULES FOR CRAFTWORKERS



General Safety Rules

Table of Contents

- A. Policy Statement
- B. Introduction
- C. General Rules
- D. Emergency Training
- E. Drugs and Alcohol
- F. General Work Practices
- G. Personal Protection and Related Equipment
- I-I. Excavation and Trenching
- I. Work Area Protection
- J. Fire Prevention
- K. Compressed Gas Cylinders
- L. Heavy Equipment and CMV's
- M. Housekeeping
- N. Rigging
- O. Tools
- P. Welding and Burning
- Q. Work Position
- R. Scaffolds
- S. Confined Space Entry
- T. Hazardous Chemical Procedures
- U. Ladder Safety
- V. Working Over or Near Water



A. **Policy Statement:** To All Employees

It is the policy of our company to provide a safe and healthy employment site. To accomplish this goal, we have established various safety rules and regulations. These rules and regulations as set forth are intended to fully comply with the United States Occupational Safety and Health Act (OSHA). Your familiarity and observance of these rules and all others as may be established in the conduct of your work is your obligation as a condition of employment as well as to your fellow employees and to a successful and harmonious job. Please note that you will be required to acknowledge with your signature that you have read these rules and that you agree to comply with its provisions.

The company is required by Law to enforce these rules and any employee failing or refusing to comply will be subject to disciplinary actions. Please read these rules and ask for further information if there is anything you do not understand.

Safety meetings will be held at the work site and you are encouraged to make suggestions and to ask questions regarding safety during these meetings. If you see any unsafe conditions that would affect your work, report it at once to your foreman.

B. **Introduction**

These rules, we hope will serve as your guide to safe practices and are designed to fill some of the needs for your personal protection and the well-being of your fellow employees. It is not intended to cover every situation which may arise in the performance of your work. It will still be the individual employee's responsibility to exercise good judgment and common sense as duties are performed.

Your cooperation in pointing out hazards to your foreman will also help us to reach our ultimate goal; **AN ACCIDENT FREE JOB.**



C. General Rules

The following information is intended as a guide and to inform employees so that safe work procedures may be followed. The accident prevention requirements, particular to each work assignment, should be thoroughly reviewed between foreman and crew prior to starting any task. All hazards or potential hazards must be recognized, and the necessary safeguards required to deal with them put into effect.

1. Review the safety requirements of each assigned job with your foreman. You will not be expected to do a job which might result in injury to yourself or others.
2. Part of your job is to adhere to the safety procedures and regulations which have been adopted for the protection of personnel.
3. Anyone that fails to obey safety instruction or does not take the necessary steps to protect the life, health, safety, and welfare of himself and others on the job will be subject to disciplinary actions.
4. Your activity may endanger fellow workers or nearby equipment and materials. Take necessary steps to safeguard them.
5. All safety signs and safety devices are installed for a purpose. No one will remove, displace, damage, nor destroy a safety device furnished for use on the job, nor interfere with its use.
6. Report unsafe equipment, hazardous conditions, and unsafe acts to your foreman.
7. Hazardous areas must be barricaded, and appropriate warning signs posted.
8. To insure prompt and adequate medical treatment in the event of any emergency because of temporary or permanent physical impairment, should be reported at the time of hiring or as the condition arises.
9. All injuries, however minor, must be reported the day of the injury to the employee's foreman so that proper treatment can be given and required accident details can be recorded.



D. Emergency Training

1. Only trained personnel should move an injured person unless it is necessary, whereas, further injury may result. Make the victim comfortable until trained help arrives.
2. Be sure you understand emergency instruction. Anticipate what you will do in case of any emergency. Above all....BE CALM!

E. Drugs and Alcohol

1. Employees reporting to work under the influence of intoxicants, non- prescribed tranquilizers, narcotics, dangerous drugs or pep pills or the possession or use of such while on site will be subject to termination.
2. Medications which may disturb your sense of balance or slow reactions are not compatible with construction activities.
3. Drugs, tranquilizers, and insulin must not be taken on the job unless authorized in writing by your personal physician. A copy of this authorization must be on file at the office.

F. General Work Practices

1. Do not run except in extreme emergencies. Watch where you walk and keep alert to movement of vehicles and others around you.
2. Horse-play will not be tolerated on the job.
3. Do not distract the attention of yourself or others from the job at hand.
4. If you are subject to dizzy spells, do not work aloft. Please inform your foreman of this type of condition.
5. All loose or tattered clothing, long hair, and long beards must be tied back to alleviate accident or injury that may occur as a result of catching on fire, or getting caught in machinery.
6. Toilet facilities are provided at each work site. No other areas are to be used.
7. Know and drive within the safe limits of all posted traffic regulations.



G. Personal Protection and Related Equipment

1. Personal protective equipment shall be worn as prescribed for each job.
2. Safety glasses, face shields, burning goggles, welding helmets, and sand blast hoods are required to fit the eye protection needs of specific jobs.
3. At all times, hard hats shall be worn correctly with the bill to the front, except when welding.
4. Proper footwear suitable for construction work must be worn. "Tennis" shoes are prohibited.
5. Eye protection is required whenever any task has the potential to produce glare, flying particles, radiation, or liquid chemical splash.
6. Hearing protection must be used whenever noise levels exceed permissible noise exposures and it is not feasible to reduce the level or duration of exposure.
7. Respiratory equipment may be required for atmospheres containing dust, fumes, and mists. Make sure your equipment fits the need for breathing safely.
8. A safety harness must be worn when you are exposed to a fall of six (6) feet or more and no handrail protection is provided. Safety harness must also be used when;
 - a. Within six (6) feet of roof or platform edges
 - b. On scaffolds without handrails
 - c. On steep slopes
 - d. In manlifts and truck crane baskets

Safety harnesses and lanyards shall be inspected before each use by the user. Safety harnesses are to be used only for safeguarding workers and not as material slings or hoists.

9. During hot weather, take salt tablets or Vitamin C tablets and drink plenty of water. During cold weather, suitable clothing should be worn to prevent frostbite.



H. Excavation and Trenching

1. Before opening any excavation, efforts shall be made, including contact of the appropriate utility company (usually Diggers Hotline) to determine if there are underground utility installations in the work area, which shall then be located and supported during the excavation operations.
2. The walls and faces of trenches four (4) feet or deeper and all excavations, in which employees are exposed to danger from moving ground or cave-in, shall be guarded by a shoring system, sloping of the ground, or some other equivalent means.
3. In excavations four (4) feet deep or more, which employees may be required to enter, excavated or other material shall be effectively stored and retained at least two (2) feet or more from the edge of the excavation.
4. Daily inspection of excavation over four (4) feet deep shall be made by a competent person. If evidence of possible cave-ins or slides is apparent, all work in the affected area shall cease until necessary precautions have been taken to safeguard the employees
5. Trenches four (4) feet deep or more, where employees must enter shall have any adequate means of exit, such as ladders or steps, located to require no more than 25 feet of lateral travel.

I. Work Area Protection

1. The public shall be screened or barricaded from locations where work activity presents hazards.
2. Only approved signs, standards, barricades, flags and cones shall be used for work area protection.
3. All governmental traffic codes and Company practices shall be followed when providing work area protection.



J. Fire Prevention

1. Make sure that the area in which you are setting up heat producing work is clear of all fire hazards and all sources of potential fires are eliminated.
2. Burn trash only in designed burning area.
3. Smoke only where permitted.
4. Do not use a salamander in confined or enclosed structures. Vent heaters properly.
5. Have fire extinguisher available and know their locations.

K. Compressed Gas Cylinders

1. Be sure all gas cylinders have their contents marked on the cylinders.
2. Place all cylinders in an upright position and secure with 1/2" rope, hardware chain, No. 9 wire or equivalent around the body of the cylinder.
3. Protect cylinder valves with caps or guards when not in use.
4. Inspect equipment prior to each use.
5. Leaking or defective cylinders are to be taken out of service immediately and inform your foreman.
6. Keep oxygen and fuel gases twenty (20) feet apart in storage or have a fire barrier between them.

L. Heavy Equipment and CMV's

1. Operators of a Commercial Motor Vehicle (CMV) shall carry a legal Commercial Driver's License (CDL) while operating these vehicles on public roads.
2. A Commercial Motor Vehicle (CMV) means a motor vehicle or combination of vehicles used in commerce to transport passengers or property if the motor vehicle meets any of the following:



- a. Has a gross combination weight rating of 26,000 or more pounds inclusive of a towed unit with a gross vehicle weight rating of more than 10,000 pounds.
 - b. Has a gross vehicle weight rating of 26,000 or more pounds.
 - c. Is designed to transport 16 or more passengers, including the driver.
 - d. Is of any size and is used in the transportation of materials found to be hazardous for the purposes of the Hazardous Materials Transportation Act and which require the motor vehicle to be placarded.
3. Only trained personnel shall operate equipment.
4. Use chocks when necessary, leave blades, forks, and buckets down when parked and block up dump truck beds, forks and blades when working on equipment.
5. Level and stabilize hoisting equipment before a lift is made.
6. Shut down equipment to refuel, oil or lubricate it.
7. Report all defects to your foreman promptly and check your equipment daily.

M. Housekeeping

1. Good housekeeping is an important part of our safety program. It is the responsibility of all employees, foreman and crew alike to practice good housekeeping.
2. Scrap materials and rubbish are fire and accident hazards. If an excess of these materials exists in your work area. Ask your foreman to arrange for their removal.
3. All material must be properly stacked and secured to prevent sliding, falling or collapse. Aisles, stairs, and passage ways must be kept clear to provide for the safe movement of employees and equipment and to provide access in emergencies.
4. Protruding nails must be bent or pulled when stripping forms or uncrating materials.



N. Rigging

1. Do not swing loads over the heads of people in the area, clear them out.
2. Flag and signalmen should be trained individuals. Only those trained to do so should do the signaling.
3. Tag lines are to be used to control loads and keep workers away.
4. Check loads just off the ground for stability before hoisting.
5. Do not leave a suspended load unattended.
6. If the crane must come within 10' of overhead electric lines, your supervisor will have to decide whether it is safe to continue or whether other steps must be taken.

O. Tools

1. Use the right tool for the job and use it in the correct way.
2. Powder actuated equipment will be used only by qualified persons.
3. Do not use tools until you have been properly instructed and authorized to do so.
4. Do not remove machinery or equipment guards without authorization.
5. Do not make repairs or jury rigs unless you have been instructed to do so in the correct way. Hose leaks are not to be taped.
6. Damaged or defective electrical tools must be returned immediately for repair.

P. Welding and Burning

1. Use leak proof welding helmets and burning goggles to prevent flash burns. Always wear eye protection to guard against slag popping off while chipping, grinding, and dressing the weld.
2. Protect electric arc welding machines from inclement weather.
3. Place cables, leads and connections so that there are no fire hazards or tripping hazards.
4. Have fire extinguisher available and know their locations.



Q. Work Position

1. Lift with your back as upright as you can comfortably do so. Do not incur back strains or sprains through impulsiveness.
2. Do not overreach to an imbalanced position.
3. Do not overreach to a spread legged position.
4. Get in your strongest position to push, pull, raise or lower and ease into the task.
5. Get a firm grip but watch out for sharp edges.

R. Scaffolds

1. There is no such thing as a temporary scaffold. All scaffolding must be erected and maintained to conform with established standards.
2. Guardrails, mid rails and toe boards must be installed on all open sides of scaffolds more than 10 feet in height.
3. Scaffolds must be tied on to the building or structure at intervals which do not exceed 30 feet horizontally and 26 feet vertically.
4. Guardrails shall be 2" x 4" or the equivalent, approximately 42" high. Mid rails shall be approximately 24" high. Toe boards shall be a minimum of 4" in height.

S. Confined Space Entry

1. Prior to entry, a written permit must be obtained.
2. Testing for the presence of oxygen deficiency or enrichment, explosive atmospheres and the presence of toxic vapors prior to confined space entry.
3. Proper equipment and personal protective equipment shall be worn when entering a confined space.

T. Hazardous Chemical Procedures

1. If you must work with hazardous chemicals, contact the job foreman for proper training.



2. Do not assume anything on your own when working with hazardous chemicals.
3. A copy of Material Safety Data Sheets (MSDS) will be available on all job sites.

U. Ladder Safety

1. The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is strictly prohibited. When ladders with such defects are discovered, they shall immediately be withdrawn from service.
2. Portable Ladders shall be placed on a substantial base, have clear access at top and bottom and extend a minimum of 36" above the landing if you will be exiting the ladder.
3. Extension ladders shall always be tied off.
4. Step ladders shall always be used in the complete open position.
5. The top two steps of any ladder should not be used.
6. Portable metal ladders shall not be used for electrical work or where they may contact electrical conductors.

V. Working Over or Near Water

1. When working over or near water, where the danger of drowning exists you must wear a U.S. Coast Guard approved life jacket or buoyant work vest.
2. Prior to each use, the buoyant work vest or life preservers shall be inspected for defects. Defective units shall not be used.
3. Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.
4. At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.



COMPREHENSIVE DRUG AND ALCOHOL ABUSE POLICY



Comprehensive Drug and Alcohol Abuse Policy

Table of Contents

- A. Policy
- B. Alcohol
- C. Drugs
- D. Medication
- E. Reporting Violations
- F. Searches
- G. Testing
- H. Drug Type & Cut Off Limits
- I. Applicant Screening
- J. Employee Testing
- K. Leaving the Work Site
- L. Treatment
- M. Re-Employment
- N. Progressive Discipline
- O. Conditions of Employment
- P. Implementation



A. Policy

It is the policy of PHEIFER BROS. CONSTR. CO., INC. to provide a healthy and safe working environment for its employees and for those with whom we work by assuring that all employees are fit for duty while on the job. Employee involvement with alcohol or drugs can adversely affect the work environment, job performance, safety, security, and customer confidence. Therefore, the use, possession, distribution, manufacture or dispensing of unlawful drugs while on duty or during working hours or reporting for work or working under the influence of, or impaired by alcohol, controlled substances or any other drug, or the possession of drug paraphernalia, are strictly prohibited.

B. Alcohol

Employees found drinking or possessing alcohol on the job or reporting to work under the influence of (including, but not limited to any measurable alcohol concentration or any detected presence of alcohol), or impaired by intoxicants will be subject to immediate discharge. Employees who operate machinery or vehicles while performing their job duties shall not have consumed any alcoholic or intoxicating beverage within the necessary timeframe to rid your body of alcohol - 1 hour for every 12oz. drink.

C. Drugs

Employees who manufacture, use, distribute, dispense, or possess unlawful drugs, controlled substances, or drug paraphernalia while on or off premises, while on duty or during working hours will be subject to immediate discharge. (Prescription drugs are accepted provided the employee has complied with the medication reporting requirement of this policy and is using the drug in compliance with a physician's direction and prescription.)

D. Medication

Employees who report to work while being treated for a medically verifiable condition requiring medication or controlled substances, which may alter the employee's physical or mental abilities, must report the use of such drug, substance or medication;

- In the case of a jobsite, to the highest-ranking site supervisor.
- In the case of other locations, to the highest-ranking supervisor in charge of that location.



The supervisor will report such use to the Safety Director who will require the employee to submit medical documentation to the Medical Review Officer regarding the use and effects of such drug, substance or medication. All information reported to a supervisor shall be kept confidential. Employees have a responsibility to the Company and to those with whom they work to read all informational labels on medication and to ask their physician what effect the drug, substance or medication may have on them physically or mentally. An employee who fails to comply with the above, may be subject to immediate discharge.

E. Reporting of Policy Violations and Criminal Convictions

Employees shall abide by the terms of this drug and alcohol policy and shall immediately report any unsafe working condition or hazardous activity that may jeopardize the employee's safety or the safety of fellow employees. This responsibility includes immediately reporting violations of this drug and alcohol policy. It is also the employee's responsibility to report any criminal conviction under a Federal, state or local law arising out of the use, possession, manufacture, distribution, or dispensing of drugs, controlled substances, or alcohol while on company premises or in the conduct of company business within five (5) days of such conviction. Failure to comply with this requirement will subject the employee to immediate discharge.

F. Searches

Pheifer Bros. Constr. Co., Inc. reserves the right to carry out reasonable searches of employees and their property, including, but not limited to, lockers, lunch boxes, and private vehicles, if parked on Company property, when there is reasonable cause to suspect that illegal drugs or alcohol may be present. Any employee who refuses to submit immediately to such a search shall be subject to discharge.

G. Testing

Employees and applicants are subject to testing for the presence of alcohol, drugs, or controlled substances. Testing will be at the discretion of the company or otherwise in compliance with applicable laws concerning drug and alcohol testing. Testing procedures are intended to protect individual privacy, ensure accountability and integrity of the specimens, and to provide confidentiality of test results. All testing procedures shall be in accordance with Department of



Health and Human Services Scientific and Technical Guidelines, and all tests shall be performed by a NIDA (National Institute of Drug Abuse) certified laboratory.

When a drug test results in a positive test, a gas chromatography/mass spectrometry confirmation test will be used for verification. Employees who test positive will be notified of the result by the Company's Medical Review Officer and offered an opportunity to discuss the result and any circumstances that may reasonably explain it. Applicants who test positive will generally not be notified of results; provided however, a driver-applicant, subject to the testing provisions of the Federal Motor Carriers Regulations shall be notified of such test results if a request is made within sixty (60) days of the date the applicant is informed he or she will not be hired.

H. **Drugs Type and Cut-Off Limits**

Employees may be tested for the following drugs and/or their metabolites at the following cut-off limits:

Drug Type/Class	Screening Cut-Off Limit	Confirmation Cut-off Limit
	(ng/ml)	(nkg/ml)
Amphetamines	1000 *	500 *
Barbiturates	300	200
Benzoyllecgonine	300 *	150 * (Cocaine Metabolite)
Cannabinoids	100 *	15 *
Methaqualone	300	100
Opiates	300 *	300 *
Phencyclidine (PCP)	25 *	25 *
Benzodiazepines	300	300
Methadone	300	300

* Cut-off limits are as established by the Department of Health and Human Services in their mandatory Guidelines for Federal Workplace Drug Testing Programs. These cutoff limits are subject to change by the Department of Health and Human Services as advances in technology or other considerations warrant identification of these substances at other concentrations. Such changes shall be deemed to have been incorporated into this policy upon announcement by the Department of Health and Human Services of such changes.

A qualified health professional will be available for consultation with employees/applicants prior to testing. This will allow any employee/applicant with



medical problems, or on prescribed or over-the-counter medications, the opportunity to inform the health professional prior to testing. That information will be furnished to the Certified Laboratory when the specimen is transmitted to them and to the Company's Medical Review Officer.

I. Applicant Screening

Applicants being considered for employment shall be subject to pre-employment screening for drugs and alcohol as set forth above. A positive result from such screening tests shall be grounds for denying or revoking employment to the applicant.

J. Employee Testing

- a. *Reasonable Suspicion* - Employees may be tested if there exists a "reasonable suspicion" that the employee is under the influence of, or impaired by, alcohol, a controlled substance, or other drug. The determination of reasonable suspicion, if reasonably possible, shall be made by two supervisors or other management authorized persons (when a second member of management is not reasonably available, one person shall be allowed to require testing). Tests shall be performed in accordance with this policy using blood or urine samples, or both collected from the employee.

A positive test result shall be grounds for immediate discharge. Refusal to submit to a management request for testing for the presence of alcohol or drugs shall give rise to a presumption of intoxication or usage and such refusal shall also constitute insubordination and be grounds for immediate discharge.

Supervisory personnel have the responsibility to decide whether there is reasonable suspicion that an employee is under the influence of, or impaired by, alcohol, controlled substances, or other drugs. Use of alcohol or drugs prior to reporting to work (versus while at work) does not mitigate this determination and such use may be grounds for discharge. Supervisory personnel shall document any observations concerning the appearance, behavior, speech, or body odors of the employee. There may be a variety of observations, or unique observations, that may lead to a determination of reasonable suspicion including information gathered from other persons or sources. Observations leading to a determination of reasonable suspicion include, but are not limited to:

1. Drinking alcohol or using unlawful drugs or other controlled substances.
2. Slurred Speech



3. Unsteady gait or posture
 4. Erratic behavior
 5. Disorientation and confusion
 6. Inability to perform routine tasks
 7. Disorderly appearance in dress or grooming
 8. Odor of alcohol or other ingested substance
 9. Proximity to discovered substances or containers reasonably believed to be or hold alcohol, other drugs.
 10. Glassy or red eyes or other eye characteristic associated with the use of alcohol or other drugs.
 11. Any accident or incident on Company premises, or off company premises while conducting company business or while on-duty, which results in personal injury or property damage where it is reasonable to suspect that human error could be at least in part an issue; for driver's subject to DOT- FHWA regulations, in addition to the above, testing will be required after any reportable accident for which the employee receives a citation for moving traffic violation. Reportable accidents include those which involve:
 - a. A fatality
 - b. Bodily injury to a person who, because of the injury, immediately receives medical treatment away from the scene of the accident; or
 - c. Property damage estimated to equal or exceed \$4,400.
- b. *Random Testing* - Drivers or any other employees who operate motor vehicles shall be subject to random drug and alcohol testing in accordance with regulations issued by the Federal Department of Transportation or other regulatory agency.
- However, as determined by the company, all other employees may also be subject to systematic random testing procedures. Failure of an employee to submit to random testing shall be grounds for discipline up to and including discharge.
- c. *Drivers and Motor Vehicle Operators* - Drivers and motor vehicle operators subject to regulations by the Federal Department of Transportation or other



agency shall be subject to testing requirements as determined by the governmental agency and shall be subject to all company policies.

(Drivers are specifically referred to the Federal Motor Carrier Safety Regulations Part 383, Subpart D, §§383.51, 383.72; Part 391, Subpart B, §391.15, Part 391, Subpart H, §§391.81 through 391.121 and Part 392, Subpart A, §392.4 through 392.5. which parts are incorporated by reference into this policy, subject to the following sentence.)

To the extent the company policy is more strict or specific than a government regulation, the Company policy shall control, unless expressly pre-empted by law.

K. Leaving the Work Site

During an investigation involving the use or possession of drugs or alcohol, or once a determination of reasonable suspicion has been made, an employee shall not leave the work site without approval and shall leave in the manner determined by management. Failure to remain on site, or to assist another employee in leaving the site under these circumstances, shall be considered insubordination, improper conduct and shall subject the involved employee(s) to discipline up to and including discharge.

L. Treatment/Employee Assistance Program

The company recognizes that drug and alcohol dependency is a treatable health problem. Employees needing assistance in dealing with such a problem or dependency are encouraged to consult with management or the personnel office to obtain information on the availability of assistance resources, treatment clinics and programs. Costs of treatment shall be the responsibility of the employee.

The Company encourages treatment for any drug or alcohol dependency and this policy is implemented to encourage employees with health problems to seek treatment before their jobs are in jeopardy or the safety, health and security of the work environment is put at risk. However, once an employee is in job jeopardy status, subsequent treatment may not be considered a mitigating factor.

The Employee Assistance Program ("EAP") will be available to all active employees. Details of the EAP are available through the personnel office and information provided to employees. All inquiries will be considered confidential. The EAP allows for employees to seek treatment or counseling and provides:



- Education and training, concerning substance abuse, for employees and supervisors.
- Reference sources for the employee, often coordinated with any benefits available to the employee, including any insurance benefits and use of sick leave.
- A confidential support system through the workplace for employees who avail themselves to treatment prior to creating a job jeopardy status.

M. Re-Employment/Re-Retry into the Workplace

Any employee who leaves the Company either through layoff, resignation, termination, or disability for a period exceeding 60 days will be subject to the same testing as a new applicant prior to re-entry into the workforce. Pheifer Bros. Constr. Co., Inc. will not re-hire any individual who fails to pass the alcohol and drug test.

N. Progressive Discipline Not Applicable

Progressive discipline (i.e., verbal warning, written reprimand, termination) does not apply to violations of the Drug and Alcohol Policy. The discipline to be imposed for violations of the Drug and Alcohol Policy shall be governed solely by the provisions set forth herein.

O. Conditions of Employment

Compliance with Pheifer Bros. Constr. Co., Inc. Drug and Alcohol Abuse Policy is a condition of employment. Failure or refusal of an employee to cooperate fully, sign any required document, submit to any search or test, or follow any prescribed course of substance abuse treatment will be ground for termination.

P. Implementation

The implementation of this policy becomes a part of the personnel policies for the Company and does not alter the employment-at-will status of its employees nor does it create an express or implied contract in the employment relationship. Your employment may be terminated by you or the Company at any time with or without cause or reason.



WRITTEN HAZARDOUS MATERIAL COMMUNICATION PROGRAM



Written Hazardous Material Communication Program

Table of Contents

- A. General Information
- B. Employee Training & Information
- C. Hazardous Material Records
- D. Identification of Hazardous Chemicals
- E. Hazardous Non-Routine Tasks



A. General Information

To comply with current standards for Hazard Communication, the following written Hazard Communication Program has been established for Pheifer Bros. Constr. Co., Inc.

B. Employee Training & Information

All employee training as related to this Hazardous Communication Program will be taught by a qualified external trainer.

Employees of Pheifer Bros. Constr. Co., Inc. receive information and training on the following:

- ✓ An overview of the requirements contained in the Hazard Communication Standard.
- ✓ Chemicals present in their workplace operations.
- ✓ Location and availability of our written Hazardous Communication Program.
- ✓ Physical and Health effects of the hazardous chemicals.
- ✓ Methods and observation techniques used to determine the presence or release of chemicals in the work area.
- ✓ How to lessen or prevent exposure to these hazardous chemicals through usage of work practices and personal protective equipment.
- ✓ Steps the company has taken to lessen or prevent exposure to these chemicals.
- ✓ Emergency procedures to follow if they are exposed to these chemicals.
- ✓ How to read labels and review M.S.D.S. to obtain appropriate hazard information.
- ✓ Location of M.S.D.S. file and location of hazardous chemical list.

Prior to a new chemical hazard being introduced into any section of this company, each employee of that section will be given information as outlined above.



C. Hazardous Materials Records

Pheifer Bros. Constr. Co., Inc.'s Compliance Specialist will check all materials purchased to verify:

1. Container Labeling
 - A. Clearly labeled as to contents
 - B. Note appropriate hazard warning
 - C. List name and address of manufacturer
 - D. Label secondary containers for job use

This company labeling system will be reviewed every year and updated as required.

2. Material Safety Data Sheet

- A. Verify M.S.D.S. received with shipments
 - B. Review new sheets and upgrade record
 - C. Keep current records at office and shop
 - D. Inform employees of record locations through user chain

D. Identification of Hazardous Chemicals

The following is a description of material containing Hazardous Chemicals routinely used by the employees of Pheifer Bros. Constr. Co., Inc.

Asphalt	Joint Sealants
Bonding Agents	PVC Waterstop
Cement	Acetylene
Bridge Pier Coating	Grinding Wheels
Ready Mix Concrete	Oxygen
Cork	Iron
Creosote	Steel
Curling Compound	Diesel Fuel
Form Oil	Gasoline
Epoxy Paints (bar coating)	Grease
L.P Gas	Starting Fluids
Muratic Acid	Welding Rods

Further information on each noted material can be obtained by reviewing Material Safety Data Sheets available from the job foreman. Duplicate copies are kept at the shop and office.



E. Hazardous Non-Routine Tasks

Periodically, employees are required to perform non-routine tasks. Prior to starting work on such projects, each employee will be given information by their supervisor about hazardous chemicals to which they may be exposed during such activity.

This information will include:

- Specific chemical hazards
- Protective safety measures the employee can take
- Measures the company has taken to lessen the hazards including ventilation, respirators, presence of another employee, and emergency procedures



FALL PROTECTION PROGRAM



Fall Protection Program

Table of Contents

- A. Scope
- B. Exemptions
- C. Guardrail System
- D. Personal Fall Arrest Systems
- E. Positioning Device Systems
- F. Safety Net Systems



A. Scope

Employees walking or working on a horizontal or vertical surface more than six (6) feet above a lower level shall be protected using guardrails, safety nets or personal fall arrest system.

Examples

- Unprotected sides or edges
- Leading edges
- Hoist areas
- Holes
- Ramps
- Runways
- Walkways
- Excavations
- Dangerous equipment

B. Exemptions

Employees inspecting, investigation or assessment of work prior to start of actual construction or after all work is completed.

Scaffold, stairways, ladders and manlifts

C. Guardrail System

- ✓ System shall be surfaced to prevent employee injury and prevent snagging of clothing.
- ✓ Ends of all top rails and mid rails shall not overhang the terminal posts.
- ✓ At hoisting/loading areas a chain, gate or removable guardrail section shall be placed across the opening between guardrail sections when operations are not taking place.
- ✓ If wire rope is used for top rails, it shall be flagged at not more than six (6) foot intervals with high visibility material.
 1. *Top Rails* - Shall be 42" +/- 3" above the walking/working level. (39"-45")

Capable of withstanding, without failure, a force of at least 200 pounds applied in any direction at any point along the top edge.



2. *Mid rails* - Shall be installed at a height midway between the top edge of the guardrail system and the walking/working level when there is no wall or parapet wall at least 21" high.

Mid rails shall be capable of withstanding, without failure, a force of 150 pounds applied in any direction.

3. *Toe boards* - When used as falling object protection they shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees or traffic below.

Toe boards shall be capable of withstanding, without failure, a force of 50 pounds applied in any direction.

Toe boards shall be a minimum of 3 ½" in height and shall not have more than ¼" clearance above the walking/working surface.

D. Personal Fall Arrest Systems

Effective January 1, 1998, body belts are not acceptable as part of a personal fall arrest system. Only locking type snap hooks shall be used. Unless a snap hook is a locking type and designed for the following connections, snap hooks shall not be engaged -

- a. directly to webbing, rope, or wire rope
- b. to each other
- c. to a "D" ring to which another snap hook or other connector is attached
- d. to a horizontal lifeline
- e. to any object which is incompatibly shaped or dimensioned in relation to the snap hook such that unintentional disengagement could occur

Lifelines shall be protected against being cut or abraded. Self-retracting lifelines and lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds.

Personal fall arrest system must be rigged so that an employee can neither fall more than six (6) feet nor contact any lower level. The attachment point of the body belt shall be in the center of the wearer's back. The attachment point of the body harness shall be in the center of the wearer's back near shoulder level. Body belts shall be at least 1 5/8" wide.



Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and returned to the yard for inspection by a competent person.

Prompt rescue shall be provided in the event of a fall or "self-rescue" must be assured.

Personal fall arrest systems shall be inspected prior to each use for wear, damage or deterioration. Defective components shall be removed from service.

E. Positioning Device Systems

Positioning device systems shall be rigged such that an employee cannot free fall more than 2 feet. Positioning devices shall be secured to an anchorage capable of supporting at least 3,000 pounds.

F. Safety Net Systems

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 below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net shall be unobstructed.

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 of 4000 pounds from not less than 42".

Defective nets shall not be used. Safety nets must be inspected at least once per week for wear, damage, and other deterioration. Materials, scrap pieces, equipment and tools which have fallen into the safety net must be removed as soon as possible from the net and at least before the next work shift.



AERIAL WORK PLATFORM POLICY



Aerial Work Platform Policy

Table of Contents

- A. Purpose
- B. Scope
- C. Definitions
- D. Inspection
- E. Pre-Operation Procedures
- F. Operating Procedures



A. **Purpose**

To protect the health and welfare of all Pheifer Bros. employees from safety hazards associated with the operation of aerial work platforms.

B. **Scope**

This procedure applies to all employees working for Pheifer Bros. that operate aerial work platforms.

C. **Definitions**

Aerial Device or Aerial Work Platform:

An entire device that is designed and manufactured to raise personnel to an elevated work position on a platform supported by scissors, masts, or booms.

Articulating Boom:

An aerial device that has two or more hinged boom sections.

Authorized Person:

A person who is approved and assigned to perform specific types of duties by the employer and who is qualified to perform those duties due to his/her training or experience.

Commercial Chassis:

A vehicle that is built for over the road travel.

Extensible Boom:

An aerial device, except for the aerial ladder type, that has a telescoping boom.

Insulated Aerial Device:

An aerial work platform that is designed with dielectric components to meet specific electrical insulating ratings.

Mechanical Positioned:

That the elevating assembly, whether a mechanical (cable or chain), hydraulic, pneumatic, electric or powered mechanism is used to raise or lower the platform.



Platform:

The portion of an aerial work platform, such as a bucket, basket, stand, cage, or the equivalent, that is designed to be occupied by personnel.

Vertical Tower:

An aerial device that is designed to operate vertically on a level.

D. Inspection - Maintenance and Testing

Pheifer Bros. shall comply with all the following requirements.

Each aerial work platform shall be inspected, maintained, repaired and kept in proper working condition in accordance with the manufacturer's or owner's operating or maintenance and repair manual(s).

Any aerial work platform found not to be in a safe operating condition shall be removed from service until repaired. An authorized person in accordance with the manufacturer or owner's operating or maintenance and repair manual(s) shall make all repairs.

If the aerial work platform is rated and used as an insulated aerial device, the electrical insulating components shall be tested for compliance with the rating of the aerial work platform in accordance with ANSI A92.2 - 1992.

E. Pre-Operation Procedures

Before use on each work shift, an aerial work platform shall be given a visual inspection by the operator for defects that would affect its safe operation and use.

Visual inspection for all the following:

- ✓ Cracked welds
- ✓ Bent or broken structural members
- ✓ Hydraulic fuel leaks
- ✓ Damaged controls and cables
- ✓ Loose wires
- ✓ Tire condition
- ✓ Fuel and hydraulic fluid levels
- ✓ Slippery conditions on the platform
- ✓ Operate all platform and ground controls to ensure that they perform their intended functions



Before the aerial work platform is used, and during use on the job site, the operator shall inspect for all the following:

- ✓ Ditches, drop-offs and holes
- ✓ Bumps and floor obstructions
- ✓ Debris
- ✓ Overhead obstruction and power lines

All unsafe items found because of the inspection of the aerial work platform or work area shall be corrected before further use of the aerial work platform.

When proper clearances cannot be maintained, the owner of the electrical lines or his authorized representative shall be notified and provided with all pertinent information before the commencement of operations near electrical lines.

Any overhead wire shall be an energized line until the owner of the line or his authorized representative states that it is de-energized, and grounds are installed.

F. Operating Procedures

The aerial work platform shall be used only in accordance with the manufacturers or owner's operating instructions and safety rules.

When operating aerial work platforms or other equipment under, over, by, or near energized electric power lines, the following clearances shall be maintained:

Voltage	Minimum Clearance
0-50 KV	10 Feet
Over 50 KV	10 Feet + .4 Inch per KV

The manufacture's rated load capacity shall not be exceeded. The employee shall ensure the load and its distribution on the platform are in accordance with the manufacturer's specifications. The aerial work platform rated load capacity shall not be exceeded when loads are transferred to the platform at elevated heights.

Only personnel, their tools and necessary material shall be on or in the platform.



The guardrail system of the platform shall not be used to support any of the following:

- ✓ Materials
- ✓ Other work platforms
- ✓ Employees

Personnel shall maintain firm footing on the platform while working there on. The use of railings, planks, ladders, or any other devices on the platform for achieving additional height is prohibited.

Fuel gas cylinders shall not be carried on platforms that would allow the accumulation of gases.

A safety belt or a harness with a lanyard which is fixed to the attachment point provided and approved by the manufacturer shall be provided by Pheifer Bros. and used by and occupant of the following aerial work platforms:

- ✓ Vehicle Mounted Platforms - (Bucket trucks - Crane trucks)
- ✓ Boom Supported Platforms - (JLG type lifts)
- ✓

Belting off to an adjacent pole structure or equipment while working from an aerial work platform is prohibited.

Pheifer Bros. shall not allow employees to exit an elevated aerial work platform, except where elevated work areas are inaccessible or hazardous to reach. Employees may exit the platform with the knowledge and consent of Pheifer Bros. supervision. When exiting to unguarded work areas, fall protection shall be provided and used as required.

Only aerial work platforms that are equipped with a manufacturer's installed platform controls for horizontal movement shall be moved while in the elevated position.

Before and during driving while elevated, an operator of a platform shall do both of the following:

- ✓ Look in the direction of and keep a clear view of the path of travel and make sure that the path is firm and level.
- ✓ Maintain a safe distance from all the following:
 - Obstacles



- Ramps
- Debris
- Overhead obstructions
- Drop-offs
- Overhead electrical lines
- Holes
- Other hazards to safe elevated travel

Outriggers or stabilizers when provided are to be used in accordance with the manufacturer's instructions. Outriggers and stabilizers shall be positioned on pads or a solid surface.

Aerial work platforms shall be elevated only when a firm and level surface or within the slope limits allowed by the manufacturer's instructions.

- ✓ Platform gates shall be closed while the platform is in an elevated position.
- ✓ Stunt driving, and horseplay are prohibited.
- ✓ Altering, modifying, or disabling safety devices or interlocks are prohibited.
- ✓ Care shall be taken to prevent ropes, cords, and hoses from becoming entangled in
 - the aerial work platform.
- ✓ A platform operator shall ensure that the area surrounding the aerial work platform is clear of personnel and equipment before lowering the platform.
- ✓ Before and during travel, except as provided for horizontal movement, and
- ✓ operator shall do all the following:
 - Inspect to see that booms, platforms, aerial ladders or towers are properly cradled or secured.
 - Ensure that outriggers are in a stored position.
- ✓ Limit travel speed according to the following factors:
 - Condition of the surface
 - Congestion
 - Slope
 - Location of personnel
 - Other hazards

The aerial work platform shall not be positioned against another object to steady the platform. The aerial work platform shall not be operated from a position on a truck, trailer, and railway car, floating vessel, scaffold or similar equipment. The boom and



platform of the aerial work platform shall not be used to move or jack the wheels off the ground unless the machine is designed for that purpose by the manufacturer.

If the platform or elevating assembly becomes caught, snagged, or otherwise prevented from normal motion by adjacent structures or other obstacles such that control reversal does not free the platform, all personnel shall be removed from the platform before attempts are made to free the platform.



CRANE AND WIRE ROPE INSPECTION PROGRAM



Crane and Wire Rope Inspection Program

Table of Contents

- A. Purpose
- B. Responsibility
- C. Inspections
- D. Unsafe Equipment
- E. Wire Rope Inspection

Attachment-I

Attachment-II



A. Purpose

Ensure safety and reliability of Pheifer Bros. Const. Co., Inc. cranes and wire rope through regular inspection, tests and maintenance.

B. Responsibility:

1. The Safety Director shall have overall responsibility for the administration of this policy.
2. The Operator is responsible to perform the required inspection of hoisting equipment and for the final disposition of equipment and/or parts identified as deficient.
3. The Job Foreman shall ensure that each crane on his job has a current monthly and daily inspection report in the cab and is responsible to turn in the completed reports at the end of each month.

C. Inspections:

1. Daily Inspection Report (See Attachment I)
 - a. Documented daily inspections shall be done prior to using the crane.
 - b. Defective items are to be immediately reported to the Job Foreman who shall make arrangements for repair of parts and/or equipment.
 - c. The "Daily Crane Inspection" form is to be completed daily by the Operator. On the last day of the month the YELLOW copy is to be sent to the Safety Director. The original WHITE copy is to be kept in the crane binder.
2. Monthly Inspection Report (See Attachment II)
 - a. Monthly inspections shall be completed by the first Friday of each month.
 - b. Distribution of the "Monthly Inspection" form is as follows;

WHITE	Crane Binder
YELLOW	Safety Director
PINK	Maintenance Shop
3. Annual Inspection I Magnetic Particle Inspections
 - a. Annual Inspections and Magnetic Particle Inspections shall be completed by an outside provider



- b. Copies of all inspection forms are to be distributed as follows:
 - ORIGINAL to Crane Binder
 - COPY to Director of Safety
 - COPY to Maintenance
- 4. Miscellaneous Inspections
 - a. Whenever the following conditions arise, all erection equipment shall be inspected and tested to insure that it is capable of safe and reliable operation:
 - ✓ Prior to first use of all new and used equipment
 - ✓ Following a major repair, overhaul or alteration
 - ✓ Following major modification to original design
 - ✓ Upon completion of assembly operation
 - ✓ Prior to using any crane that has been in storage
 - ✓ Prior to using any crane that has been involved in an accident or mishap

D. Unsafe Equipment:

If equipment is found to be unsafe, employees shall be prohibited from using the equipment until the danger or unsafe condition is corrected.

Wire Rope Inspection:

- 1. All wire rope shall be inspected during the Monthly and Annual Crane Inspection.
- 2. Wire rope shall be removed from service when the following conditions exist:
 - a. In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.
 - b. Wear of one-third the original diameter of outside individual wires. Kinking, crushing, bird caging or any other damage resulting in distortion of the rope structure.
 - c. Evidence of heat damage from any cause.
 - d. Any reduction on the nominal diameter as listed below:

Nominal Diameter Wire Rope	Maximum Allowable Reduction
0 - 5/16" Inclusive	1/64"
3/8" - 1/2" Inclusive	1/32"
9/16" - 3/4" Inclusive	3/64"
7/8" - 1 1/2" Inclusive	1/16"
1 1/4" - 1 1/2" Inclusive	3/32"

- e. In standing ropes, more than two broken wires in one lay in sections beyond end connections and more than one broken wire at an end connection.



RESPIRATORY PROTECTION PROGRAM



Respiratory Protection Program

Table of Contents

- A. Purpose
- B. Responsibilities
- C. Definitions
- D. Respiratory Protection
- E. Program Evaluation
- F. Respiratory Hazard
- G. Training
- H. Fit Testing
- I. Selection
- J. Inspection, Cleaning, and Storage
- K. Medical Examinations
- L. Work Area Surveillance
- M. Air Quality Standards
- N. Approved Respirators



A. Purpose

This program has the following objectives:

- ✓ To achieve compliance with the requirements of applicable regulations, 29 CFR 1910.134, 1910.1025, 1926.103, and other applicable safety and health codes.
- ✓ To provide specific guidelines for operations performed by Pheifer Bros. Constr. Co., Inc. personnel.
- ✓ To establish workable standard operating procedures which can adapt to changing circumstances and feedback from affected personnel.

B. Responsibilities

Employer Responsibilities

When engineering and/or work practice controls do not effectively control exposure and/or are not feasible, respiratory protection shall be used in accordance with this program. Controls shall be used where possible with respiratory protection to reduce employee exposure to the lowest possible level.

- ✓ Furnish approved and suitable respiratory protection to employees who may be exposed to toxic substances or other harmful agents at no cost to the employee. Only approved respiratory protection devices shall be worn.
- ✓ Provide training and information about respiratory hazards, equipment, maintenance, proper care and use. Only employees completing respiratory protection training shall be assigned tasks requiring respiratory protection.
- ✓ The employer shall be responsible for the implementation and evaluation of the respiratory protection program as described.

Employee Responsibilities

- ✓ Employees shall use the respiratory equipment provided in accordance with manufactures instructions, Pheifer Bros. Constr. Co., Inc.'s Respiratory Protection Program and the training provided. No modifications shall be made to the respiratory protection equipment.
- ✓ Each respiratory protection wearer shall promptly report any defect or malfunction to the site supervisor for prompt corrective action.
- ✓ No employee shall don any respiratory protective equipment unless he has first received the training required by this program.
- ✓ No employee shall be required to wear a negative-pressure respirator unless they have received a qualitative fit test within the last twelve months in accordance with this program.



- ✓ Any employee who is required to wear respiratory protective equipment will not have a beard or any other facial hair that may impair a proper face-to-face piece seal.
- ✓ Contact lenses in contaminated atmospheres are not permitted.
- ✓

C. **Definitions**

- AEROSOL:** Microscopic particles, solid or liquid, that are suspended in air.
- APPROVED:** Tested and listed as satisfactory by the Bureau of Mines of the US Department of the Interior, or jointly by the Mining Enforcement and Safety Administration (MESA) of the U.S. Department of the Interior and the National Institute of Occupational Health and Safety (NIOSH) of the U.S. Department of Health and Human Services, or jointly by the Mine Safety and Health Administration (MSH).
- CANISTER:** A container with a filter, sorbent, or catalyst, or combination thereof, which removes specific contaminants from the air drawn through it.
- CARTRIDGE:** A small canister.
- CEILING CONCENTRATION:** The concentration of an airborne substance that shall not be exceeded.
- CONFINED SPACE:** An enclosure having limited means of egress and poor natural ventilation and which may contain hazardous contaminants or be oxygen deficient.
- CONTAMINANT:** A harmful, irritating, or nuisance material that is foreign to the normal atmosphere.
- FUME:** Smoke-like particles or metal suspended in air.
- GAS:** A fluid with a vapor pressure exceeding 40 psi at 100° F.
- HAZARDOUS ATMOSPHERE:** Any atmosphere which oxygen is deficient or which contains a toxic or disease-producing contaminant exceeding the permissible exposure limit (PEL) or the threshold limit value (TLV).
- HIGH-EFFICIENCY FILTER:** A filter which removes from air 99.97% or more of particles having a mean particle diameter of 0.3 micrometers.
- IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH):**
Any atmosphere that poses an immediate hazard to life or produces immediate irreversible effects on health.
- NEGATIVE PRESSURE RESPIRATOR:** A respirator in which air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air-pressure of the outside atmosphere and negative during inhalation in relation to air pressure of the outside atmosphere.
- PERMISSIBLE EXPOSURE LIMIT (PEL):** Exposure limit for an eight-hour time weighted average concentration.



POSITIVE PRESSURE RESPIRATOR: A respirator in which the air pressure inside the respiratory-inlet covering is positive in relation to the air pressure of the outside atmosphere during exhalation and inhalation.

PROTECTION FACTOR: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator.

THRESHOLD LIMIT VALUE (TLV): The allowable TWA concentration for a normal eight-hour workday.

TIME WEIGHTED AVERAGE (TWA): The airborne concentration of a material to which a person is exposed, averaged over the total exposure time.

VAPOR: Gaseous form of liquids and solids.

D. Respiratory Protection

Hazards to the lungs are not always easy to detect. Some of the most common hazards are lack of oxygen, and the presence of harmful dust, fogs, smokes, mists, fumes, gases, vapors or sprays which may include substances that may cause cancer, lung impairment, other diseases, or death. Respirators prevent the entry of harmful substances into the lungs during breathing. Some respirators also provide a separate supply of breathable air, so work can be performed where there is inadequate oxygen, or where greater protection is required.

The prevention of atmospheric contamination at the work site should be accomplished as far as possible by engineering control measures, such as enclosing or confining the contaminant-producing operation, exhausting the contaminate, or using a less toxic/hazardous material. When effective engineering controls are not feasible, such as clean-up operations, appropriate respirators must be used. Employers and employees must be aware that respirators have their limitations and are not a substitute for effective engineering controls.

Respiratory protective equipment does not eliminate the hazards. If the equipment fails, over-exposure will occur. To reduce this possibility of failure, equipment must fit properly and be maintained in a clean and serviceable condition. Employers and employees must also understand the equipment's purpose and limitations. The equipment must not be altered in any fashion, nor may it be removed from the wearer while in a hazardous atmosphere, even for a short period of time despite the fact the wearer finds it uncomfortable.



E. Program Evaluation

In work areas where respiratory protective equipment is required during normal operations or during emergency situations, a written program for the safe and proper use of such equipment is required. Employers and employees must be familiar with these procedures as well as the equipment limitations. The effectiveness of Pheifer Bros.

Constr. Co., Inc. Respiratory Protection Program should be evaluated regularly, at least annually, and the written procedures modified or changed as necessary.

F. Respiratory Hazards

In selecting the proper respiratory protective equipment, the type and extent of the hazard must be assessed. Respiratory hazards are classified as either:

1. Oxygen deficiency
2. Air contamination by particulates, vapors or gases.
3. Air contamination by a combination of particulates, vapors and/or gases.

A hazardous atmosphere is one that is oxygen-deficient or contains a toxic or disease producing particulate, vapor or gas in a concentration immediately or ultimately dangerous to life or health. An atmosphere not immediately hazardous to life or health may cause immediate physical discomfort or irritations, produce harm after prolonged exposure or cause chronic poisoning after repeated short exposures, but it does not cause irreversible damage during a single exposure.

An oxygen deficient atmosphere is one that does not contain sufficient oxygen to support metabolism for an unlimited period. If an atmosphere is oxygen-deficient, only air supplying, not air purifying respirators may be used. OSHA and DILHR define oxygen deficient atmospheres where the oxygen content is 19.5% or less.

When the oxygen content falls below 19.5% to about 16% some adverse physiological effects occur, but they can be unnoticeable. At 10% or less oxygen, loss of consciousness occurs followed by death in minutes.

G. Training

Any employee that is required to wear respiratory protective equipment must be taught the proper selection, use, and maintenance of respirators. They must also be instructed in the limitations of such equipment. Employees who are required to work in atmospheres that are IDLH should be trained in rescue procedures, first aid, and CPR.

The training, conducted by a competent person, must include instructions on fitting and how to check the face-to face piece seal. The employee must be given the opportunity



to handle the respirator, wear it in normal air for a period to become familiar with it, to practice adjusting it, and then wear in a test atmosphere.

Training, which is to be given annually to all employees who are required to wear respiratory protective equipment, should include an explanation of the following:

- ✓ Nature of the respiratory hazard and what could happen if the respirator is not used correctly.
- ✓ Reason for selection of a respiratory protective equipment.
- ✓ Limitations of a selected respirator.
- ✓ Methods of donning the respirator and checking its fit and operation.
- ✓ Proper wear of the respirator.
- ✓ Respirator cleaning, maintenance, and storage.
- ✓ Recognizing and handling emergency situations.

Annually, all employees who are required to use respiratory protective equipment shall receive refresher training and qualitative testing.

Users must know that improper respirator use, or maintenance may cause overexposure. They should also know that continued use of poorly fitted and maintained respirators can also cause chronic disease or death from overexposure to air contaminants.

H. **Fit Testing**

Air supplied respiratory equipment, or respirators, which purify air, rely not only upon the filtration canister, but the fit between the respirator face piece and the user. The degree of fit will vary according to the physical dimensions and attributes of the individual face.

Without assessing the degree of this fit, employees cannot be certain the respirator is affording any degree of protection. The user must receive fitting instructions including demonstrations and practice in how to wear the respirator, how to adjust it, and how to determine if it fits properly.

Although respirators are designed for maximum efficiency, they cannot provide protection without a tight seal between the face piece and the user. For that reason, beards and other facial hair that may prevent a tight face piece to face seal are **strictly forbidden**. Denture wearers should be fitted according to their preference, with or without dentures, and advised to use the respirator only when they are in the same mode as initially tested. Corrective glasses worn by employees also present a problem.



Special mountings are available to hold corrective lenses inside full-face pieces. Contact lenses are not permitted in a contaminated atmosphere.

To assure proper respiratory protection, a face-to-face piece seal must be checked each time a respirator is worn. This can be accomplished by performing a positive and negative pressure check. The following protocol gives step-by-step instructions:

POSITIVE PRESSURE TEST

1. Install canisters if the respirator is an air-purifying device.
2. Don the respirator in the proper fashion.
3. Adjust the respirator to fit comfortably on the face and set the strap tension.
4. Seal the face piece on the face by moving the head from side to side and up and down slowly while taking a few short breaths.
5. Close off the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if pressure is built up inside the face piece without any evidence of outward leakage of air at the seal.

If the face-to-face piece seal fails, re-adjust the tension of the straps. Once the positive pressure test passes, proceed to the negative pressure test.

NEGATIVE PRESSURE TEST

1. Repeat steps 1 thru 5 of the positive pressure test to assure a positive face to face piece seal.
2. Gently close off the inlet opening of the canisters by covering with the palm of the hands, inhale gently so that the face piece collapses slightly, and hold breath for 10-15 seconds. If the face piece remains slightly collapsed and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

* If a positive-negative pressure test is not satisfactory, **DO NOT** use the respirator.

Every employee who is required to wear respiratory protective equipment shall receive annual qualitative fit testing. Such testing should be scheduled with annual or refresher training. Employees who have lost or gained 20 or more pounds or had dentures fitted since their last qualitative fit test shall be retested as soon as possible.

1. The test conductor shall review this protocol with the test subject before testing.
2. The test subject shall be allowed to smell a weak concentration of the irritant smoke to familiarize them with the characteristic odor.



3. Respirators shall be equipped with high efficiency cartridges.
4. The test subject shall properly don the respirator and perform the positive and negative pressure check. Failure of the positive and negative pressure check shall result in the use of a different respirator.
5. Advise the test subject that the smoke can be irritating to the eyes and instruct them to keep their eyes closed while the test is performed.
6. The test administrator shall direct the stream of irritant smoke towards the face seal area starting 12 inches from the face piece and gradually move to within one inch, moving around the whole perimeter of the mask.
7. While the face seal is being challenged by smoke, the following exercises must be performed for one minute each.
 - a. Normal breathing
 - b. Deep breathing
 - c. Turn head from side to side, make certain that movement is complete, and care is taken not to bump the respirator on the shoulder area.
 - d. Nod head up and down, make certain movement is complete, and use care not to bump the respirator on the chest area.
 - e. Recite text per OSHA 29 C.F.R. 1910.1048.14.E
8. If the irritant smoke produces an involuntary cough by the test subject, the fit test is rejected, and another respirator shall be used.

A summary of all test results shall be maintained in each employee's personnel record for 3 years. The summary shall include the name of the test subject, date of the test, testing agent, and the name of the test administrator.

I. Selection

Choosing the right equipment involves several steps: determining what the hazard is and its extent, choosing equipment that is certified for the function, and assuring that the device is performing the intended function. Chemical and physical properties of the contaminant, as well as the toxicity and concentration of the hazardous material and the amount of oxygen present must be considered in selecting the proper respirators. The nature and extent of the hazard, work rate, area to be covered, mobility, work requirements and conditions, as well as limitations and characteristics of the available respirators also are selection factors.

There are two basic types of respirators: air purifying and atmosphere supplying. Air-purifying use filters or sorbents to remove harmful substances from the air. They range from simple disposable masks to sophisticated powered air-purifying respirators. Air-



purifying respirators do not supply oxygen and may not be used in oxygen-deficient atmospheres or in ones that are immediately dangerous to life or health (IDLH). Atmosphere-supplying respirators are designed to provide breathable air from a clean source other than the surrounding contaminated work atmosphere. They range from supplied-air respirators and self-contained breathing apparatus (SCBA) to complete air-supplied suits.

The time needed to perform a given task, including the time necessary to enter and leave a contaminated area is one factor that determines the type of respiratory protection needed. For example, a SCBA, gas mask, or air-purifying chemical cartridge respirator provides respiratory protection for short periods, whereas a type of atmosphere-supplying respirator that supplies breathable air from an air compressor through an airline can provide protection for extended periods of time. Particulate filter air-purifying respirators can provide protection for long periods without the need of filter replacement only if the concentrations of particulates is low, but the wearer needs to overcome filter resistance when inhaling. When high concentrations of contaminants are known, a positive pressure supplied-air respirator (SAR) offers the advantage of better protection.

Air purifying respirators present minimal interference with the wearer's movement, whereas atmosphere-supplying respirators may restrict movement and present potential hazards. For example, SAR's with their trailing hoses, can limit the area the wearer can cover and may present a potential hazard where the trailing hose can come into contact with machinery. Similarly, an SCBA presents a size penalty that may restrict movement in tight places and a weight penalty from carrying the added weight of the air cylinder. Another factor to consider when using air-supplied respirators is the amount of air supplied to the wearer that will determine the operating life of the air cylinders.

The peak airflow rate is also important in the use of a constant flow SAR. The air-supply rate should always be greater than the maximum amount of air being inhaled to maintain the respiratory enclosure under positive pressure.



Respirators must be selected based upon the following criteria:

Criteria	Reference
Concentrations of contaminate	Refer to OSHA/ILHR permissible exposure limit
Characteristics of the respiratory hazard present in the operation	See tables 9-1, 9-2, and 9-3
Respirator characteristics, capabilities, & limitations	See tables 9-1, 9-2, and 9-3

J. Inspection, Cleaning, And Storage

Respirator maintenance is an integral part of this program. Wearing a poorly maintained or malfunctioning respirator may be more dangerous than wearing none. Probably the most important part of a respirator maintenance program is continual inspection. If conscientiously performed, inspections will identify damaged or malfunctioning respirators before they can be used.

All respirators should be inspected before and after each use and those not used routinely shall be inspected after each use and at least once a month. In one case, the respirator is to be inspected both before and after each use, in the other case only after each use. It is highly unlikely that anyone needing a respirator in a hurry, as during an emergency, is going to inspect it.

Air-purifying and air-supplying respirators should be checked as follows before and after each use:

1. Examine the face piece for:
 - ✓ Excessive dirt
 - ✓ Crack, tears, holes, or distortion
 - ✓ Inflexibility
 - ✓ Cracked or badly scratched lenses in full-face piece
 - ✓ Incorrectly mounted lenses in full-face piece
 - ✓ Cracked or broken element holders, badly worn threads, or missing gaskets



2. Examine the head straps or head harness for:
 - ✓ Breaks
 - ✓ Loss of elasticity
 - ✓ Broken or malfunctioning buckles and attachments
 - ✓ Excessively worn serrations on the head harness which might permit slippage
3. Examine the inhalation, exhalation valves for the following:
 - ✓ Missing or badly damaged valves
 - ✓ Foreign material under valve seats
 - ✓ Cracks, breaks, or chips in the valve body, particularly in the sealing surface
 - ✓ Improper installation of the valve in the valve body
 - ✓ Missing or defective valve cover
4. Examine the corrugated breathing tube, if equipped for:
 - ✓ Broken or missing end connectors
 - ✓ Missing or loose hose clamps
 - ✓ Missing gaskets
 - ✓ Deterioration determined by stretching the tube end and looking for cracks
5. Examine air-purifying elements for:
 - ✓ Expired shelf-life elate
 - ✓ Cracks or dents in outside case of filter
6. Examine the air-supply system for:
 - ✓ Integrity and good condition of air supply lines and hoses, including attachments and end fittings
 - ✓ Correct operation and condition of regulators, valves and other air-flow regulators
 - ✓ Any possible corrosion in the regulator assembly. Remove cover and inspect the diaphragm for tears or cracks
 - ✓ Cracks, fraying or wear on the high-pressure hose
 - ✓ Any physical damage to the high-pressure air cylinder, including the pressure gauge
 - ✓ Proper amount of air in cylinder tank
 - ✓ Any missing buckles, straps or pads to the carrier assembly
 - ✓ Any cracks, tears or distortion to the nylon webbing



7. Examine the air-supplying compressor for:
 - ✓ Any physical damage
 - ✓ Missing or plugged filter pads
 - ✓ Missing or plugged felt pads
 - ✓ Condensation or physical damage to the filter bowl
 - ✓ Any obstructions at both ends of the compressor
 - ✓ Any loose or inoperative fittings or connections

When an air-purifying or atmosphere-supplying device is used non-routinely, all the above procedures should be followed each use. Inspections should be once a month and a record should be kept of inspection dates and findings. If defects are found during field inspections or monthly inspections two remedies are possible. If the defect is minor, repair and/or adjustment may be made on the spot. If it is major, the device should be removed from service until it can be repaired. *UNDER NO CIRCUMSTANCES SHOULD A DEVICE THAT IS KNOWN TO BE DEFECTIVE BE USED.*

Only experienced persons using parts specifically designed for the respirator must make repairs. The manufacturer's instructions should be consulted for any repair, and no attempt should be made to repair or replace components or adjust or repairs beyond the manufacturers recommendations.

Because respirator cleaning usually involves some disassembly it presents a good opportunity to examine each respirator thoroughly. The procedures outlined above for a field inspection should be used, but a pre-cleaning check would not normally include an operational check, which should be done just before the respirator is returned to service. It is suggested that the inspection be made after the respirator is cleaned. Although a worker may not be required to maintain his own respirator, briefings on the cleaning procedure should be given.

Respirators may be washed in a detergent solution and then sanitized by immersion in a sanitizing solution. If respirators are washed by hand, a separate disinfecting rinse must be provided. Where individual issue is not practiced, disinfections is strongly recommended.

Any good detergent may be used and a disinfections solution of 2 tablespoons Clorox bleach to 1 gallon of water with a 2-minute immersion is recommended. The cleaned and disinfected respirator should be rinsed thoroughly in clean water to remove all traces of detergent, cleaner, and disinfectant. This is very important to prevent



dermatitis. The respirators may be allowed to dry by horizontal wire like drying clothes, but care must be taken to not damage the face seal or face piece.

All the care that has gone into cleaning and maintenance of a respirator can be negated by improper storage. Respirators that are stored must be protected against:

- ✓ Dust
- ✓ Sunlight
- ✓ Heat
- ✓ Extreme cold
- ✓ Excessive moisture
- ✓ Damaging chemicals

It is strongly recommended that freshly cleaned respirators be placed in heat-sealed or reusable plastic bags until re-use. Respirators should be stored in a clean, dry location away from direct sunlight with the face piece and exhalation valve in a normal position to prevent the rubber or plastic from taking a permanent distorted "set".

K. Medical Examinations

Persons assigned to tasks that require the use of respiratory protection must be physically able to perform the work while using the protective equipment. The user's medical status must then be reviewed periodically. A physician must determine what health and physical conditions are pertinent.

When respiratory protective equipment is worn in toxic atmospheres, the individual should be provided with appropriate laboratory tests. These may include urine, blood, or fecal analysis and other techniques to determine the intake and excretion of toxic substances. The findings of these tests, when correlated with other exposure data can serve as an indication of the effectiveness of this program. Positive evidence of exposure conditions to determine if there is any relationship to inadequate respiratory protection or a need for additional engineering controls.

L. Work Area Surveillance

Surveillance must be maintained of the conditions in the work area and of the degree of worker exposure or stress (combination of work rate, environmental conditions, and physiological burdens of wearing a respiratory protection device).



Changes in operating procedures, temperature, air movement, humidity, and work practices may influence the concentration of substances in the work area atmosphere. These factors necessitate periodic monitoring of the air contaminate concentration. Testing should continue to assure that the contaminant exposure has not risen above the maximum protective capability of the respirators being used.

Employees using SCBA's or SAR's in confined spaces, where the environment is or may be IDLH, must wear safety harnesses and lifelines. A second person equipped with complete protective gear must be standing by ready to help if the first worker gets into trouble. Precautions must be taken so that in the event of an accident one person will be unaffected and have the proper reuse equipment to be able to assist the others in an emergency.

M. Air Quality Standards

Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration must be of high purity. Oxygen must meet the requirements of the United States Pharmacopoeia for medical or breathable oxygen. Breathable air must meet at least the requirement for Grade D breathable air described in Compressed Gas Association Commodity Specification G-7 .1-1996. Compressed oxygen must not be used in open circuit SCBA's or SAR's that have previously used compressed air. Oxygen must never be used with airline respirators.

The compressor for supplying air must be equipped with the necessary safety devices and alarms. Compressors must be constructed and situated to avoid any entry of contaminated air into the system and must be equipped with suitable in-line, air purifying sorbent beds and filters installed to assure air quality. The system must also have a receiver of sufficient capacity to enable the user to escape from a contaminated atmosphere in the event of compressor failure. Airline couplings must be incompatible with outlets for other gas systems to prevent accidental servicing of airline respirators with non-respirable oxygen or gases.

N. Approved Respirators

The Mine Safety and Health Administration of the Department of Labor, and National Institute must approve respiratory protective devices jointly for Occupational Safety and Health of the Department of Health and Human Services, for the contaminant or situation to which the employee is exposed.



Respirable Silica Safety Program



Respirable Silica Safety Program

Table of Contents

- A. Program Objectives
- B. Introduction/Overview
- C. General Hazards
- D. OSHA Regulations
- E. Common Exposure Levels
- F. Identifying Hazards
- G. Construction Activities
- H. Engineering Controls
- I. Work Practice Controls
- J. Person Protective Equipment
- K. Medical Monitoring
- L. Personal Hygiene
- M. Wrap-Up



A. Program Objectives

To identify health hazards associated with employees inhaling respirable crystalline silica dust, and Pheifer Bros. 's Safe Work Procedures for preventing exposure. The result being an increased awareness of the health hazards associated with silica.

Suggested Training Materials

- ✓ Tools used that can create respirable silica dust: Partner saws, Hilti drills, diamond concrete grinders, etc.
- ✓ Respirators approved for work with crystalline silica.
- ✓ Respiratory Protection Program

B. Introduction/Overview

Crystalline silica is the second most common mineral found in the earth's crust. This natural compound is a major component of rock, mineral ores, and sand, etc. The construction industry has many uses for crystalline silica. Unfortunately, these uses can also pose a serious hazard to employees if not properly controlled. Inhaling respirable silica dust can lead to an incurable, but preventable, disease called silicosis. Hundreds of thousands of workers are exposed to respirable silica each year, and over 250 workers die from silicosis every year, and many more are disabled.

Due to the potential exposure to numerous workers, OSHA has updated the respirable silica standard and created a Special Emphasis Program (SEP) for the construction industry. Under the SEP, OSHA's Compliance Safety and Health Officers are targeting construction sites with possible overexposures to silica dust. If an OSHA compliance officer sees that a contractor has implemented engineering controls, and/or a respiratory protection program the officer will probably not do an inspection. Nevertheless, if a jobsite is exceeding the permissible exposure limit (PEL) for silica exposure OSHA can fine the contractor.

For these reasons, Pheifer Bros. has developed this program to assist employees in identifying potential silica health hazards and implementing safe work procedures for eliminating and/or controlling the level of employee exposure to respirable silica.

C. General Hazards

Silica is a non-combustible, colorless or white, tasteless crystal. It occurs naturally in the earth's crust. Silica is a general term for the compound silicon dioxide (SiO₂). When employees inhale crystalline silica dust, the tiny particles can cause scar tissue to form in the lungs, thus reducing the lungs' ability to get oxygen from the air. This health



problem is known as silicosis, and sometimes it can develop rather quickly after major exposure. Usually, however, symptoms don't appear for 10 or more years, and/or after repeated exposures to lower levels of respirable silica. Symptoms of silicosis include shortness of breath after physical exertion, severe cough, fatigue, loss of appetite, chest pains, and/or fever. The National Institute for Occupational Safety and Health (NIOSH) identifies three types of silicosis:

- I. *Chronic Silicosis*: occurs after 10 or more years of exposure to crystalline silica at low concentrations.
- II. *Accelerated Silicosis*: occurs after 5 to 10 years of the initial exposure at high concentrations of silica.
- III. *Acute Silicosis*: symptoms develop within a few weeks to 4 or 5 years after the initial exposure at extremely high concentrations of silica.

Contributing Factors to the development of silicosis will depend upon the following factors:

- ✓ Particle Size: When the silica crystals are broken down into dust-sized or respirable particles they can be inhaled into your lungs and become deadly.
- ✓ Percentage of Free Silica: The higher the percentage of free silica that is respirable, the more damage will occur.
- ✓ Length of Exposure: The longer a person is exposed to high concentrations of respirable silica, the more likely it will be that they will develop silicosis.
- ✓ Individual Susceptibility: Certain individuals will be more prone to develop silicosis and its associated complications due to the person's individual health.

D. **OSHA Regulations**

OSHA's air contaminants regulation (29 CFR 1910.1000, Table Z-3) sets the permissible exposure limit (PEL), which is the maximum amount of airborne crystalline silica that an employee may be exposed to during a work shift.

- ✓ OSHA: Permissible Exposure Limit (PEL): $\text{PEL} = \frac{10 \text{ mg/m}^3}{\% \text{ Silica} + 2}$

- ✓ $\text{PEL}_{(\text{mixture})} = \frac{10 \text{ mg/m}^3}{\% \text{ Quartz} + 2(\% \text{ cristobalite}) + 2(\% \text{ tridymite}) + 2}$



The American Conference of Governmental Industrial hygienists (ACGIH) has developed Threshold Limit Values (TLVs) for silica dust which are considered permissible for exposures 8 hr./day, 5 days/week for the working lifetime of employees.

- **ACGIH: Threshold Limit Values (TLV)**

Quartz: 0.1 mg/m³ (1 00 ug/m³)

Cristobalite: 0.05 mg/m³ (50 ug/m³)

Tridymite: 0.05mg/m³

E. **Common Exposure Levels Identified by NIOSH:**

Reported exposure level estimates for construction activities involving crystalline silica dust include:

- Dry Cutting: 0.05 mg/m³ to 23.77 mg/m³
- Dry Drilling: 0.32 mg/m³ to 0.80 mg/m³
- Dry Concrete Coring: 0.42 mg/m³ to 0.42 mg/m³
- Sandblasting: 0.52 mg/m³ to 1.80 mg/m³

Studies of wet operations have shown that these exposure levels can virtually eliminate all respirable silica, and/or reduce it to levels below 2.50 mg/m³, thus making the need for supplied air respiratory protection unnecessary. Therefore, Pheifer Bros. will use wet systems whenever feasible, and conduct air monitoring to determine the exact amount of respirable silica employees are exposed to.

F. **Identify Hazards**

Pheifer Bros. wants to be sure that employees are aware of the operations that could expose them to respirable silica on the job, the potential hazards of their exposure, and the safe work procedures for preventing overexposure.

G. **Construction Activities with the Potential for Employee Exposure**

- Abrasive sandblasting creates the most severe exposures. However, silica may be replaced with Black Diamond Grit Blasting an alternative abrasive blasting compound that is more effective and does not pose a health hazard to employees.
- Chipping, jack hammering, grinding, drilling and cutting or sawing of concrete and certain kinds of rock that contain silica (i.e., granite, sandstone, etc.)
- Abrasive blasting of concrete (regardless of the abrasive used)
- Rock excavation and tunneling (i.e., granite, sandstone, etc.)
- Dry Crushing, loading, hauling, dumping, sweeping of concrete materials
- Sawing, hammering, drilling, grinding, chipping, or mixing of concrete



- Dry-sweeping or pressurized air blowing of concrete, rock, or certain types of sand dust.
- Mining, cutting, drilling, crushing of sandstone and/or granite.
- Excavating in sandstone, granite, or other soils containing silica.

H. **Engineering Controls**

Pheifer Bros. requires that the first level of exposure control should be the use of engineering controls. If exposure levels are not completely safe, administrative controls must then be implemented. Personal Protective Equipment will be utilized as a precautionary measure whenever applicable.

Below you will find different engineering controls that can be used to control the amount of silica employees are exposed to. Remember that silica exposure can be prevented by not allowing it to become airborne in the first place. If silica is not airborne, it is virtually impossible for it to enter the lungs of employees and cause silicosis.

- Housekeeping: Remove dust before it becomes airborne by traffic, vibration, and random air currents.
- Isolation: Hazardous operations should be isolated to reduce exposure to employees such as physical barrier.
- Wet Work: Airborne silica dust hazards can be minimized or greatly reduced by applying water. When possible apply water to all respirable silica dust generating operations (i.e., sawing, drilling, etc.)
- Ventilation: Local exhaust ventilation captures contaminants at their source before they escape into the jobsite.
- Dust Control: Use a vacuum with a high-efficiency particulate air filter (HEPA) rather than blowing it with compressed air.

Always recognize when silica dust may be generated and plan to eliminate or reduce exposure of dust at the source. Awareness and planning are keys to prevention of silicosis.

I. **Work Practice Controls**

If engineering controls are infeasible or do not reduce silica levels below the PEL, work practice controls should be used. The following are recommended work practice controls.

- Restricted Areas: Post Warning signs in areas where there is silica exposure to keep other workers out of those work areas.



- **Personal Hygiene:** To minimize worker contact with silica dust hand-washing facilities must be conveniently located.
- **Training:** The training is about exposure to hazards in the workplace and is now required by state and federal hazard communications standards (right to know laws). Furthermore, OSHA under 29CFR 1926.21 requires safety training for all exposed employees
- **Medical Surveillance:** Medical examinations should only supplement exposure monitoring and controls. The examinations should take place before job placement or upon entering a trade and at least every three years thereafter.

J. **Personal Protective Equipment**

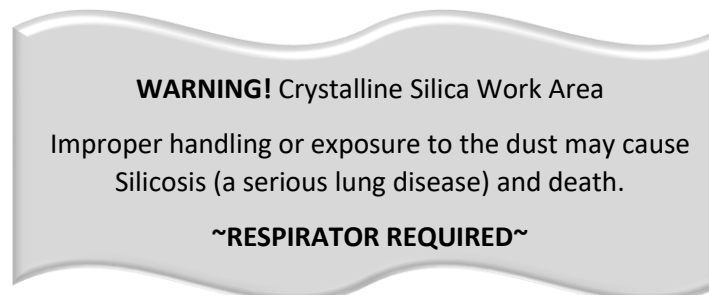
PPE including the use of a respirator may be necessary to protect the worker from the environment when it is not feasible to render a completely safe work environment.

Protective Clothing: Change into disposable work clothes (i.e. Tyvek suits) at the jobsite, and always leave protective clothing at work!

Respiratory Protection: If these controls can't bring airborne silica below the PEL, Pheifer Bros. will provide employees with and require them to use an approved respirator. Pheifer Bros. has approved the following respirators for use in respirable silica applications:

Exposure Level	Respirator
$\leq 0.05\text{mg}/\text{m}^3$	3M 6000 series $\frac{1}{2}$ face respirator with HEPA Filters
$\leq 2.25\text{mg}/\text{m}^3$	3M L 901 Hood or 3M 7800 series full face respirator with HEPA filters.
Abrasive Blasting on Concrete	Type CE positive pressure blasting hood

- * NOTE: N100 or P100 respirators can reduce exposure up to 10x the PEL when properly fitted.
- * OSHA states that any time respirators are used the follow warning signs will be posted:





K. Medical Monitoring

Another protection against silicosis is medical monitoring. Medical monitoring starts with a medical exam, X-rays, and lung-related tests before potentially high exposure employees (i.e., Concrete Finishers) start working around crystalline silica. OSHA recommends follow-ups every five years for less than 20 years of exposure, every two years for over 20 years or if respiratory problems develop. Supervisors and/or Foreman are responsible for contacting Matt Gehl to coordinate medical exams for all high exposure new hires, and/or for employees working around respirable silica noting any of the following symptoms of silicosis:

- Shortness of breath after physical exertion
- Severe cough
- Fatigue
- Loss of appetite
- Chest pain
- Fever

L. Personal Hygiene

Silicosis is a risk to employees who perform jobs with direct exposure and for anyone working in an area with silica dust. Therefore, it is important to reduce dust quantities with good housekeeping and the use other engineered controls. Other basic hygiene practices can also be used.

- Don't eat, drink, use tobacco products, or apply cosmetics in areas with crystalline silica dust.
- Wash your hands and face before eating, drinking, smoking, or applying cosmetics outside the exposure area.
- Speaking of smoking, it can increase your risk of lung disease when you work around crystalline silica. That's one more good reason not to smoke.

K. Wrap-up

Crystalline silica is a natural substance that is encountered in many different jobs and processes. However, respirable silica can and does cause damage to your lungs and can possibly lead to disability or even death. Therefore, Pheifer Bros. has implemented this program to reduce and control the level of respirable silica encountered by employees on our jobsites and requires all employees to participate in it.



RESPIRABLE SILICA SAFETY TRAINING QUIZ

Employee Name (please print) _____

SS# _____

Date _____

1. Operations including chipping, jack hammering, grinding, drilling and cutting or sawing of concrete/ and certain types of rock containing silica (i.e., granite, sandstone, etc.), and/or abrasive blasting of concrete (regardless of the abrasive used) can expose employee to respirable silica? **True False**
2. Dry-sweeping or pressurized air blowing of concrete, rock, or certain types of sand dust types of jobs could expose you to crystalline silica? **True False**
3. What are the health hazards of crystalline silica exposure? _____
4. Engineering controls used to reduce employee exposures to respirable silica include Housekeeping, Isolation, Wet Work, Ventilation, and Dust Control? **True False**
5. What types of PPE does Pheifer Bros. provide to reduce employee exposure to respirable silica? _____
6. Symptoms of silicosis include shortness of breath after physical exertion, severe cough, fatigue, loss of appetite, chest pains, and dry cracking skin? **True False**
7. What personal hygiene practices are important when you work around crystalline silica?

Employee Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____



LEAD COMPLIANCE PROGRAM



Lead Compliance Program

Table of Contents

Scope

Purpose

- A. Description of Operation in which Lead is Emitted
- B. Description of Compliance Methods
- C. Air Monitoring Data
- D. Schedule for implementation
- E. Work Practice Program

Employee Lead Training Form

Lead Exposure- Torch Cutting Checklist



Scope

This Program pertains directly with OSHA's lead in construction standard which applies to all construction work where an employee may be occupationally exposed to lead.

Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead;
- Installation of products containing lead;
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed.

Purpose

This written Lead Compliance Program was prepared for use by Pheifer Bros. Const. Co., Inc. to explain our commitment to provide a safe and healthy workplace in accordance with the OSHA Lead Standard, 29 CFR 1910.1025. This program spells out how engineering, work practice controls and training will be used to reduce the hazards associated with lead in the workplace.

This program is to be updated at least every 6 months. The next update will be completed by August 1, 2003.

Upon request, copies of this program will be made available to employees, their designated representatives, and government officials. In addition, other information required as part of lead exposure reduction efforts will be available to workers upon request. No one will be penalized in any way for asking to review it.

This Lead Compliance Program Includes:

- Description of operation in which lead is emitted
- Description of means employed to achieve compliance
- Description of technology considered to achieve compliance
- Air monitoring data
- Schedule for implementation
- Work practice program
- Administrative control schedule
- Other relevant information



A. Description of Operation in Which Lead Is Emitted

The source of inorganic lead vapors in the field is from the burning and cutting with torches of structural steel coated with lead-based paints during the removal of structural steel from old bridges. Lead vapors and/or dust particles are released similarly when the bulk of the scrap becomes recycled material. Welding and fabricating in the shop with the use of this structural steel produces fumes and dust particles.

Every field employee on a removal job where lead has been identified, and the shop welder will be monitored prior to the start of the job. The only employees at this site that could be exposed to lead at levels above OSHA's Action Level (30ug) are the Laborers doing the burning.

B. Description of Compliance Methods

The principle means to achieve compliance is a combination of work practices and engineering controls:

1. All burning is conducted outside.
2. Employees are effectively using extra-long (36 inch) oxy-acetyl torch wands to further separate themselves from direct fumes.
3. All employees are using the proper personal protective equipment that is critical to that job.

Employee positioning and the climatic factors (wind direction and velocity) are critical to this method of lead exposure reduction.

The methods employed at this site are consistent with basic standard practice for this type and scale of operation. We are continually looking for new methods and technology to reduce employee exposure. At this point we are not aware of any significant gains or improvements used in this industry to reduce lead exposure while burning or cutting.

Recognizing the nature of the material, process, and equipment, Pheifer Bros cannot be certain that employee exposure will be reduced to levels below OSHA's Permissible Exposure Limit (50 ug). All employees doing burning will be provided with and required to use NIOSH/MSHA approved respirators to help control exposure.



To further reduce lead exposure employees are required to use good work practices which include protective clothing, housekeeping, and good personal hygiene. The organization also has an effective medical surveillance program and trains the employees.

C. Air Monitoring Data

Pheifer Brothers Const. Co., Inc. has hired a testing company to do the air monitoring. If in the case that monitoring reveals that employee exposure at this site is above OSHA's Permissible Limit (50 ug), Pheifer Bros will have monitoring repeated quarterly. This quarterly monitoring will continue until at least two consecutive measurements, taken at least 7 days apart, are below OSHA's permissible limit (50 ug).

When monitoring reveals employee exposure at this site is at or above OSHA's Action Level (30 ug) but below OSHA's Permissible Limit (50 ug) the company will repeat monitoring at least every 6 months.

When monitoring reveals employee exposure to be below OSHA's Action Limit (30 ug) the company will not repeat monitoring unless additional monitoring is required by the following paragraph.

Additional monitoring will be conducted whenever there has been a change in task, equipment, production, control or personnel which may result in new or additional exposure to lead, or whenever the company has any other reason to suspect a change which may result in new or additional exposures to lead.

Employee Notification. Within 5 days after receiving the lead exposure monitoring results, Pheifer Bros will notify each employee in writing of the results which represent that employee's exposure.

Whenever the results indicate that any employee's exposure, without regard to respirators, exceeds OSHA's Permissible Limit (50 ug), Pheifer Bros shall include in the written notice:

1. A statement that OSHA's Permissible Limit (50 ug) has been exceeded and
2. A description of the corrective actions the company has taken or will take to reduce exposure below OSHA's Permissible Limit (50 ug).

In addition, all field employees will be fitted for half-mask, air-purifying respirator equipped with high efficiency filters and will follow the company's respiratory protection program.



D. Schedule for Implementation

The program has been in effect since February 2002. When new technology becomes available Pheifer Bros will incorporate it into its airborne lead exposure reduction program.

E. Work Practice Program

The designated lead exposure area is the area within 25 feet of all cutting or burning.

Employees assigned to work positions in these areas are required to use protective clothing and respirators. Other employees may request and will be provided a respirator if they have been determined to be medically fit and are included in the respiratory protection program.

Employees will position themselves up wind whenever they are capable.

1. *Respiratory Protection Program:* The respiratory protection program is a program which explains in detail the proper use of respiratory protection.

If the employee's lead exposure changes, the respirators will also be changed when the respirators in use are not proper for the new level of lead exposure.

2. *Protective clothing:* Flame retardant protective clothing will be provided for the individuals exposed to lead while cutting or burning. These employees will use at least one clean set of protective clothing daily.
3. *Housekeeping.* To the extent practical, surfaces where dust may accumulate will be vacuumed to remove lead accumulations. Vacuums will be equipped with high-efficiency particulate air (HEPA) filters and used and emptied in a manner that minimizes the reentry of lead into the workplace. Compressed air shall not be used to clean lead from any surface.
4. *Hygiene facilities and practices:*
 - a. All employees are prohibited from consuming or keeping food, beverage, tobacco products, medicines, and cosmetics in the field during lead abatement procedures.
 - b. Employees are provided with a clean change locker room facility, which includes two (2) lockers for each employee. These are to be used to separate work



clothing from street clothing. No employee is permitted to wear home or take home work clothing provided by the company. Employees are not allowed to wear their work clothing to their automobile.

- c. Showers will be provided where feasible and will be used by employees who work in areas where their airborne exposure to lead is above OSHA's Permissible Limit (50 ug). These employees are required to shower at the end of the work shift. Employees who are required to shower will be provided with soap and a clean towel.
- d. A clean lead-free lunchroom is provided away from the source.

All employees are required to wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

Employees who work in areas where their airborne exposure to lead is above OSHA'S Permissible Limit (50 ug) are required to remove surface dust from clothing by vacuuming prior to entry into the lunch room. A vacuum is provided for this purpose. Employees may remove coveralls if otherwise dressed appropriately.

5. *Medical Surveillance:*

Medical surveillance consists of two parts: (a) Biological monitoring and (b) medical examinations and consultation.

Pheifer Bros utilizes the services of an approved local industrial clinic, Affinity Occupational Health, for biological monitoring, medical examinations, and consultations at no cost to the employees.

- a. *Biological monitoring:* Biological monitoring program includes blood lead and blood zinc protoporphyrin determinations at least every 6 months for all employees who may be exposed to lead above OSHA's Action Limit (30 ug) for more than 30 days per year.

If an employee's blood lead level is above 40 ug/100g, that employee's blood will be tested at least every two months.



If an employee's blood lead level is above 50 ug/100g, that employee's blood will be tested within 2 weeks after Pheifer Bros receives the results of the first blood sampling test.

If the average of the last 3 blood lead sampling tests, or the average of all blood lead sampling tests conducted over the previous 6 months indicates that the employee's blood lead is at or above 50 ug/dl, that employee will be temporarily removed from all work where the exposure is at or above OSHA's Action Level (30 ug).

During temporary removal the employee's blood will be tested at least monthly.

b. Employee notification:

Within five working days after receipt of biological monitoring results, Pheifer Bros will notify in writing each employee whose blood level exceeds 40 ug/dl:

- that the employee's blood lead level exceeds 40 ug/dl
- that the OSHA standard requires temporary medical removal with medical removal protection benefits when an employee's blood lead exceeds 50 ug/dl.

During temporary removal due to high blood lead the employee will continue to receive his/her earnings, seniority and all other employment rights and benefits as though he/she had not been removed from his/her normal job.

c. Medical examination and consultations:

Pheifer Bros will provide free medical examinations and consultation for all employees who may be exposed to lead above OSHA's Action Limit (30 ug) for more than 30 days per year:

- before employees are assigned to areas or jobs in which airborne concentrations of lead are at or above the action level.
- at least annually for all employees whose blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 ug/dl.
- as soon as possible, upon notification by an employee that:
 - a. the employee has signs or symptoms commonly associated with lead intoxication
 - b. the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or



- c. the employee demonstrated difficulty in breathing during a respirator fitting test or while using a respirator
- as medically appropriate for each employee removed from lead exposure.

The medical examination will include:

- A work history and medical history
- A thorough physical examination
- A blood pressure measurement
- A blood sample to determine (a) blood lead level; (b) hemoglobin and hematocrit determinations, (c) red cell indices and examination of peripheral smear morphology, (d) zinc protoporphyrin, (e) blood urea nitrogen; (f) serum creatinine
- A routine urinalysis with microscopic examination
- Any laboratory or other test which the examining physician deems necessary by sound medical practice.

Notes:

- * Pheifer Bros will provide the employee with a copy of every written medical opinion from every examining or consulting physician.
- * If any employees blood lead increases by 10 ng between blood tests, that employee is required to attend a special lead training. This training will include hygiene and respirator training.

6. Employee Training

- a. Information - copies of the OSHA Lead standard with Appendices A, B, C and D will be given to all employee's subject to lead exposure.
- b. Classroom training sessions provide the following information:
 - The OSHA standard and appendices
 - Nature of operations and exposure to lead
 - Use, care and fitting of respirators
 - Contents of the respiratory protection program
 - Medical Surveillance and medical removal protection programs
 - Engineering controls and work practices
 - Contents of this compliance plan
 - Instructions regarding prophylactic chelation as stated in OSHA's standard
 - Instructions regarding the importance of keeping the interior of the employee's car lead free



- c. Training will be provided annually for all employees having job positions where employees' exposure to air borne lead is at or above OSHA's Action Level (30 ug).
 - d. Training will be provided to all employees prior to initial job assignment to positions where employees' exposure to air borne lead is at or above OSHA's Action Level (30 ug).
7. *Signs:*
Appropriate signs are installed in the field near the burning area. These signs state "Warning - Lead Work Area - Poison - No Smoking or Eating."
8. *Recordkeeping:*
Files, forms and permanent records exist to record:
- Exposure monitoring
 - Training
 - Medical Surveillance
 - Medical Removals



Safety Policy

Date of Training: _____

Name of Trainer: _____

Signature of Trainer: _____

Employee Lead Training From

Topics Covered in Session:

Employee(s) Name	Signature



Lead Exposure - Torch Cutting Checklist

Table A

Number of areas where burning is done:	
Total number of employees burning:	
Employees are prohibited from burning on drums, tanks and barrels.	
All scrap burning is conducted outside.	
Employees use torches longer than 24 inches.	

1. Unless the torch cut strap is lead free (lead free means zero (0.000) ppm lead), and there is no (this means zero (0.000) ppm lead exposure) the employee is required to have written air sampling results that indicate the employees' lead exposure. NOTE: Normal day to day scrap will NOT be lead free. Therefore, employees' exposure will be somewhat higher than zero.

	Check One
Employee torch cut or burn less than 30 times per year.	
Employee torch cut or burns more than 30 times per year.	

2. **Important Note:** Allowable exposure is based on length of the workday. When employees work a 10hr. shift, the 50ug Permissible Exposure Limit (PEL) is reduced to 40ug. When employees work a 12hr shift the 50ug (PEL) is reduced to 33ug.

	Check One
Written proof that all material being torch cut has been checked and found to be lead free.	
Written proof that no employee doing burning has lead exposure higher than 30ug. (Complete Table B)	
Written proof that no employee doing burning has lead exposure higher than 50ug ³ while some may have exposure higher than 30ug. Complete Table D)	
Written proof that at least one employee has lead exposure higher than 50ug ³ (Complete Table D)	
No written proof of the level of employee lead exposure. (Complete Table D)	



Action Plan for Lead Exposure (Torch Cutting) of less than 30 ug

Table B

Actions	✓
Employees are trained in the hazards of working with lead:	
Employees are provided with hand washing facility	
Employees are instructed to wash hands before eating or smoking.	

Action Plan for Lead Exposure (Torch Cutting) between 30ug and 50ug¹ (PEL)

Table C

Actions	✓
Air monitoring is conducted every 6 months.	
Employees are trained in hazards of working with lead.	
Blood lead is determined at least every 6 months for all employees exposed for more than 30 days/year.	
Blood zinc protoporphyrin level is determined at least every 6 months for all employees exposed.	

***Important Note:** This upper value (50 ug) depends on the length of the workday. Allowable exposure (PEL) is reduced when employees work more than 8 hours per day. When employees work a 10-hr. work shift the 50 ug Permissible Exposure Limit shown above is reduced to 40 ug. When employees work a 12-hr. work shift the 50 ug Permissible Exposure Limit shown above is reduced to 33 ug.



Action Plan for Lead Exposure (Torch Cutting) above 50ug¹ (PEL)

Table D

Actions	✓
Has conducted air monitoring every 3 months.	
Has a written lead compliance program in place.	
Employees are trained in the hazards of working with lead.	
Blood lead is determined at least every 6 months for all employees exposed for more than 30 days/year.	
All employees doing torch burning and having exposures above the Permissible Exposure Limit are wearing the correct NIOSH approved respirators. ²	
All employees doing torch burning and having exposures above the Permissible Exposure Limit are protected by and included in an effective written respiratory protection program.	
All exposed employees are provided clean work clothing.	
Employees are required to wash hands before eating, smoking or applying cosmetics.	
Employees are provided a clean lunch room.	
Employees are prohibited from wearing work clothing home.	

***Important Note:** This upper value (50 ug) depends on the length of the workday. Allowable exposure (PEL) is reduced when employees work more than 8 hours per day. When employees work a 10-hr. work shift the 50 ug Permissible Exposure Limit shown above is reduced to 40 ug. When employees work a 12-hr. work shift the 50 ug Permissible Exposure Limit shown above is reduced to 33 ug.

If there are any questions about what is an approved respirator call the local OSHA office for free information. It is not necessary to give your name.



CONFINED SPACE ENTRY PROGRAM



Confined Space Entry Program

Table of Contents

- A. Purpose
- B. Responsibilities
- C. Definitions
- D. Sampling – Pre-sampling Checklist
- E. Air Quality
- F. General Safety Requirements
- G. Determination of Level I or Level 2 Status
- H. Entry Procedures for Level I
- I. Entry Procedures for Level 2
- J. Rescue
- K. Confine Space Entry Form



A. Purpose

This program has the following objectives:

- To achieve compliance with the requirements of the applicable regulations, ILHR31, Wisconsin Administrative Code, and other applicable safety and health codes.
- To provide specific guidelines for operations performed by Pheifer Bros. personnel and their subcontractors.
- To establish workable standard operating procedures which can adapt to changing circumstances and feedback from affected personnel.

B. Responsibilities

Employer Responsibilities

- All employee entry into confined spaces shall be in accordance with this program.
- It is the policy of Pheifer Bros. Constr. that engineering, or work practice controls should be used to minimize worker exposure and entry should be used only where absolutely necessary.
- No employee shall be required to enter a confined space unless such entry is accomplished in accordance with the program.
- No employee shall be required to enter a confined space without the necessary instruction and equipment according to this program.

Employee Responsibilities

- Employees shall observe the procedures of this program and all applicable regulations.
- Employees shall report any hazardous conditions in connection with confined space entry or any safety equipment defects to their supervisor immediately.
- No employee shall enter a confined space without required training and equipment as described in this program.

C. Definitions

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

APR: Air purifying respirator

ASPHYXIAN: A gas that can be non-toxic but can cause unconsciousness or death by lowering the concentration of oxygen in the air or by totally replacing the oxygen in breathing air.



AUTO IGNITION TEMPERATURE: Minimum temperature required to initiate or cause self-sustained combustion in any substance.

CGI: Combustible gas indicator

COMBUSTIBLE: A liquid with a flash point at 100° For higher.

CONFINED SPACE: An environment that meets the following criteria:

- by design or construction has limited openings for entry or egress
- has unfavorable natural ventilation
- could reasonably be believed by the employer to have dangerous air contaminants or contain material which may produce dangerous air contaminants
- is not intended for human occupancy
- In addition to the above criteria, any space that has a depth of 4.5 feet or more from the plane of entry to the plane upon which the worker performs his work, shall be considered a confined space.

FIRE POINT: Temperature at which a liquid gives off enough vapor to continue to burn when ignited.

FLAMMABLE: Flash point less than 100° F.

FLAMMABLE RANGE: The amount of gas or vapor in air between the upper and lower flammable limits.

FLASH POINT: Temperature at which material gives off enough vapor to ignite in the presence of an ignition source.

GAS: A fluid with a vapor pressure exceeding 40 psi at 100° F.

IDLH: Immediately dangerous to life and health

IGNITION TEMPERATURE: The minimum temperature to which a substance must be raised before it will ignite.

LEL: Lower explosive limit, the lowest concentration, or percentage in air that will produce a flash when an ignition source is present.

LEVEL 1 CONFINED SPACE: A designated area which meets the confined space criteria in which the oxygen level is greater than 19.5%, the hydrogen sulfide level is less than 10 ppm, the combustibility reading is less than 20% of the LEL; and the concentration of any toxic substance falls below the short-term exposure TLV established by the ACGIH.

LEVEL 2 CONFINED SPACE: A designated area that meets the confined space criteria in which either the oxygen level is less than 19.5%, the hydrogen sulfide level is greater than 10 ppm. The combustibility reading is 20% or greater than the LEL, or the concentration of any toxic substance is greater than the short term TLV established by the ACGIH.

PEL: Permissible exposure limit; exposure limit for an eight-hour time weighted average concentration.



PPM: Part per million

REL: Recommended exposure limits

SCBA: Self-contained breathing apparatus

STEL: Short term exposure limit; maximum concentration for a continuous 150-minute exposure period not to exceed the daily TLV-TWA

TLV: Threshold limit value; the allowable TWA concentration for a normal eight-hour work day.

TOXIC: Anything harmful, destructive, deadly, or poisonous to the body.

TOXIC SUBSTANCE: Any substance listed by the ACGIH in the standard threshold limit values for chemical substances in the work environment.

TWA: Time weighted average; the airborne concentration of a substance to which a person is exposed, averaged over the total exposure time.

UEL: *Upper* exposure limit; the highest concentration or percentage in air that will produce a flash when an ignition source is present.

VAPOR:

Gaseous form of liquids and solids.

D. Sampling

No person may enter a confined space until the atmosphere of the confined space is sampled and the air quality is determined for all levels and all areas within the space. The atmosphere of a confined space shall be sampled for: 1) Oxygen 2) Hydrogen 3) Sulfide 4) Combustible Gas and 5) any toxic substance which an employee is expected to work with or likely to be exposed to and which the employer has reason to believe may be present.

A sampling device that can simultaneously test for oxygen, hydrogen sulfide and combustible gas without manual switching shall be used to sample the atmosphere. The sampling devices shall also be equipped with audible or visible warning devices that indicate when the atmosphere of a confined space has:

- An oxygen content less than 19.5%
- A hydrogen sulfide content of 10 ppm or more; or
- A combustible gas content of 20% or more of the LEL

The sampling device shall be calibrated relative to the oxygen content of the ambient air at the time of sampling. Calibration of the sampling device relative to the oxygen content shall be performed where the 20.9% natural content of oxygen in air is most likely to occur.



Calibration of a sampling device for combustible gases and hydrogen sulfide shall be conducted as often as necessary to assure accuracy, but at least once every six (6) months by a trained technician in accordance with manufacturer's instructions.

The sampling of the atmosphere of a confined space for toxic substances shall be using a multi-gas detector or other testing device capable of detecting and measuring the concentrations of toxic substances.

A non-sparking probe attached to the sampling device or the sampling device shall be used to sample the atmosphere of a confined space. When entry to a confined space is by means of a manhole, the probe shall be inserted through the pick hole of the manhole cover, or the cover shall be pried open on the downwind side allowing just enough room for insertion of the probe or the device. The sampling device is slowly lowered into the space, care should be used not to bump the device during lowering and raising. Samples should be taken near the bottom, middle, and top with the device being re-calibrated after each sample is taken.

➤ **PRE-SAMPLING CHECKLIST**

- The sampling equipment is in proper working condition.
- The sampling equipment has been calibrated.
- The sampling equipment is appropriate for the task.
- The person doing the sampling has received training required to ensure safe and knowledgeable operation.

E. Air Quality

A confined space may not be entered, unless the atmosphere of the confined space has:

- an oxygen content of 19.5% or more
- a hydrogen sulfide content of less than 10ppm
- a combustible gas content less than 10ppm
- an exposure level, for any toxic substance determined to be present is at or below the TWA-STEL

A confined space with an atmosphere, which is not within any or all the above limits, may be ventilated and may be entered only when samples indicate the atmosphere is within the limits. When confined spaces cannot be brought within limits for oxygen, hydrogen sulfide or a toxic substance, it may be entered if a self-contained positive pressure breathing apparatus or an air line respirator and proper protective clothing is used.



***** A confined space with an atmosphere which is not within the limit for combustible gas may not be entered at ANY time, even if an SCBA or respirator is used. *****

F. General Safety Requirements

- Confined spaces may not be entered unless employees are trained and equipped to recognize, understand, and control air quality hazards that may be encountered.
- Pheifer Bros. Constr. shall provide all employees who are required to enter confined spaces a written and approved confined space entry program, and a written and approved entry permit.
- Pheifer Bros. Constr. shall provide a written procedure on the selection, use and care of breathing apparatus, with proper employee training and fitting according to OSHA regulations.
- Any employee who enters or is the designated "top man" shall be trained in basic first aid and cardiopulmonary resuscitation.
- Employees entering a confined space shall wear safety equipment such as, but not limited to, gloves, hard hats, and protective clothing.
- No smoking shall be allowed within a 20-foot radius of the confined space. No smoking signs must be placed within a 25-foot radius of the entrance to the confined space.
- Openings to the confined space shall be kept clear of hand tools and debris.
- Sampling devices, radios, and hand tools used in or near the confined space shall be non-sparking or intrinsically safe.
- SCBA's shall have at least a 30-minute air supply.
- Escape air tank for an air-line respirator shall have at least a 5-minute air supply capacity.
- In areas of high traffic volume, warning signs, warning devices, and barricades shall be used around the entrance.
- No heavy equipment shall be operated within 25 feet of the confined space.
- Prior to entering a confined space, procedures shall be established for acquiring additional help in the event of any emergency.
- Prior to entering a confined space, lock-out procedures must be followed, and the tank entry permit must be signed.
- All sources of ignition shall be removed, and all electrical sources in the confined space shall be locked out prior to entry wherever possible.
- The designated "top man" shall have within arm's reach an air-line respirator or SCBA for emergency use.



G. Determination of Level 1 Or Level 2 Status

With air monitoring, the following flow charts can be utilized to help determine whether the space is level 1 or level 2. This determination will occur immediately upon obtaining the air monitoring results.

If the atmospheric content is below 19.5% oxygen, greater than or equal the 20%, or the toxic contaminant is greater than or equal to ACGIH short term exposure limit, the space must be designated as a level 2 space. If none of these conditions are met, it is classified as a level 1 space.

The person entering a confined space should keep the tri-gas monitor on themselves and operating continuously during their stay in the confined space. If any of the following conditions occur during a level 1 entry, the person is to leave the area immediately:

1. Oxygen level registers 19.5% or less
2. Hydrogen sulfide level registers greater than or equal to 10ppm
3. Combustibility level equals to or exceeds 20% of the LEL or,
4. STEL of any toxic substance is found

ENTRY PROCEDURES FOR LEVEL 1

- Once level 1 determination has been made, the foreman/supervisor must complete the entry form prior to entry.
- The person entering the confined space must have the tri-gas meter on throughout the entire entry.
- No employee may engage in level 1 entry until he has completed a required training program and has had current certification in basic first-aid and CPR.
- Each employee shall follow the general safety requirements.

ENTRY PROCEDURES FOR LEVEL 2

- The atmosphere within the employee's immediate area shall be continuously monitored for oxygen, hydrogen sulfide, and combustible gas while in the confined space.
- While in the confined space and the alarm sounds from the monitoring device, the employee shall exit the confined space, unless equipped with an air-line respirator or SCBA.

**** NOTE:** The employee must exit the confined space at all times when the LEL is exceeded even if equipped with an air-line respirator or SCBA**



- Forced ventilation may not be used in lieu of monitoring devices.
- Except in a rescue attempt, no employee may enter a confined space without at least one person stationed at the entrance of the confined space.
 - ** DO NOT become a victim yourself
- When entry to a level 2 confined space is by means of a manhole or a top opening, a winch shall be set up for rescue attempts prior to entry.
- An employee entering vertically into a confined space shall wear a full body harness secured to a life line. The full body harness shall have a waist belt, shoulder straps, leg straps, and "D" ring or shoulder ring attached to lower than the shoulder blades. The life line shall be attached to the winch drum or secured by some other method.
- An employee having to make horizontal movement into a confined space, or having to descend in a manner that renders a winch useless shall:
 1. Be equipped with an air-line respirator or an SCBA; and
 2. Wear a full body harness as described above.
- A stand-by person shall be posted at the entrance of the confined space. This person must have received training on confined space procedures and have training in use of air-line respirators and SCBA's. The stand-by person must be equipped with an air-line respirator or an SCBA. He shall not leave the opening of the confined space at any time while employees are in the space, except to request emergency assistance. The stand-by person must have a current certification in first aid and CPR.
- While in a level 2 confined space, the person in the confined space shall have voice or other means of communication with the stand-by employee stationed at the entrance of the confined space.
- Where an air-line respirator is used, the unit shall be equipped with an escape air tank. Prior to entering a confined space, emergency procedures must be established in the event of an emergency.
- Each employee shall follow the general safety requirements.

H. Rescue

Rescue procedures must be established before entry to a confined space.

The stand-by person may not enter the confined space until assistance has been summoned. When the stand-by person enters the confined space, they shall be wearing a full body harness, lifeline, and an airline respirator or SCBA.



Confined Space Entry Permit

This report is to be filled out by the job supervisor **before** vessel entry.

Date of Entry: _____ Vessel Entered: _____

Time of Entry: _____ Vessel Entrants: _____

Project Supervisor: _____ Safety Attendant: _____

Reason for Entry: _____

Yes No

Was vessel atmosphere tested prior to entry?	
Carbon Monoxide (CO) <35PPM	
Hydrogen Sulfide (H ² S) <10PPM	
Oxygen (O ²) >19.5% and <23.5%	
Lower Explosive Limit (LEL) <10%	
Organics	
Are all required lockouts completed before entering?	
DO all entrants have a safety harness and life line?	
Is there a self-contained breathing apparatus?	
Are all entrants wearing appropriate protective equipment?	

Name of person conducting air monitoring: _____



Safety Precautions Required. Place ✓ if Implemented:

Standby Observer		Rescue Equipment	
Confined Space Cleaned of Hazardous Material		Lifeline/Harness	
Electrical Power		Confined Space Ventilated	
Disconnected		Continuous Monitoring	
Special Lighting		Spark Proof Equipment/Tools	
Equipment Lockout		Hot Work Permit	
Other:		Other:	

Protective Equipment:

Level A:		Additional Equipment:	
Level B:		Additional Equipment:	
Level C:		Additional Equipment:	

I certify that the entry and emergency procedures have been thoroughly reviewed and understood.

Entry Personnel Signature Date

Confined Space Observer Signature Date

Designated Helper(s) Signature Date



ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM



Assured Equipment Grounding Conductor Program

Table of Contents

- A. Scope
- B. Purpose
- C. Installation
- D. Visual Inspection
- E. Testing
- F. Testing Intervals
- G. Test Equipment
- H. Test Verification



A. Scope

This program defines the minimum requirements to assure the installation and maintenance of equipment grounding conductors in accordance with the applicable requirement of Sections 210-7, 250-45, 250-59 and 305-2 of the National Electric Code and CFR 1926.404 (b) (iii).

B. Purpose

The purpose of this program is to ensure the proper installation, maintenance, inspection and testing of equipment grounding conductors on construction sites to minimize injuries due to electrical ground faults.

C. Installation

- All 120-volt, single phase, 15 and 20 ampere receptacles shall be of grounding type and their grounding contacts shall be grounded by connection to the equipment grounding conductor of the circuit supplying the receptacles.
- All 120-volt flexible cord sets (extension cords) shall have an equipment grounding conductor which shall be connected to the grounding contacts of the connector(s) on each end of the cord.
- The exposed concurrent-carrying metal parts of 120-volt cord and plug-connected tools and equipment that arc likely to become energized shall be grounded in accordance with the National Electric Code.

D. Visual Inspection

The employees shall be instructed that each cord set, 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 by the user before each day's use for external defects, such as deformation or missing pins or insulation damage and for indication of possible internal damage. Equipment found damaged or defective may not be used until repaired.

E. Testing

All 120-volt, single phase, 15 and 20 ampere receptacles, 120-volt flexible cord sets, and 120-volt equipment connected by cord and plug which are not a part of the permanent wiring of the building or structures shall be tested to assure that electrical continuity is maintained through all required equipment grounding conductors and their connectors. These tests shall be conducted as follows:



- All equipment grounding conductors shall be tested for continuity and shall be electrical continuous.
- Each receptacle, attachment cap and plug and receptacle for cord sets shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

F. Testing Intervals

All required tests shall be performed:

- a. Before the first use.
- b. Before equipment is returned to service following any repairs.
- c. 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.)
- d. At intervals not to exceed three (3) month, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding six (6) months.

Do not make available or permit the use by employees any equipment which has not passed the required tests.

G. Test Equipment

All receptacles, attachment caps and plug and receptacle or cord sets shall be tested as in the following manner:

- While in service with receptacle circuit tester.
- When not in service with a continuity tester.

This will meet the test requirements of Section 5a and 5b.

All equipment connected by cord and plug shall be tested for ground wire continuity with a volt-OHM meter or a continuity tester.

H. Test Verification

Tests shall be documented by means of color coding. The following color coding system is to verify that testing is current and that all receptacles, portable cords and tools have been inspected and tested as required.

All receptacles, cords and tools shall be marked with the tape used to designate the period for which the inspections and tests were conducted.

January – March	White
April – June	Green
July – September	Red
October – December	Orange



****Note:** As testing of all receptacles, cord sets and cord and plug connected equipment cannot be accomplished overnight, such tests may commence two (2) weeks prior to the end of the Quarter and continue for two (2) weeks into the following Quarter. During this interval either color shall be deemed acceptable.



STATIC ELECTRICITY



Static Electricity

Table of Contents

- A. Scope
- B. Purpose
- C. Static Electricity
- D. Static Control
- E. Practical Applications
- F. Emergency Procedures



A. Scope

This program defines the minimum requirements to prevent potential ignition sources when working with flammable and combustible liquids.

B. Purpose

The purpose of this program is to protect all employees and equipment from possible injury and damage from fire or explosion caused by static electricity when handling flammable or combustible materials.

C. Static Electricity

- Static Electricity is defined as the electrification of materials through physical contact and separation, and the various effects that result from the positive and negative charges that are thus formed.
- Static is not necessarily a hazard. It can be of concern because it represents a potential ignition sources. When coupled with a fuel source and a supply of air, static discharges can produce a fire. common sources include nonconductive power belts or conveyors, moving vehicles, the flow of nonconductive hydrocarbons through piping.

D. Static Control

- The control of static electricity hazards may be accomplished by controlling either the generation or accumulation of static charges, the discharge of static charges, or controlling the vapor-air mixture at points where static charges may be discharged as sparks.
- Sparking between two conducting bodies can be prevented by an electrically conducting bond attached to both bodies. Any potential difference will flow through the bond wire and not through the air. Therefore, no spark will occur. The earth may also become part of the bonding path. If the spark gap is between a grounded object and an object insulated from the ground, grounding the second object will effectively bond the objects preventing spark discharge.



E. Practical Applications

To reduce the possibility of ignitions from static discharges, the guidelines listed below should be followed:

- Reduce flow rates as much as possible.
- When transferring flammable liquids from one container to another, the receiving container must be bonded to the nozzle of the fill pipe. When pouring flammable liquids, the containers should touch.
- Portable fuel tanks must be grounded to the earth.

Every job site may pose different hazards. Specific work practices will be established to deal with hazards as they arise on each job site.

F. Emergency Procedures

All on-site personnel will use the following emergency procedures. The site safety officer shall be notified on any on-site emergencies and be responsible for ensuring that appropriated procedures are followed.

Upon notification of any emergency, a continuous beep from a horn shall be sounded for twenty seconds. On-site personnel will evacuate the work area immediately and assemble at the tool trailer or the main gate for a head count. The site safety officer should evaluate the emergency and take appropriate action. Activities on site will stop until the emergency is removed or minimized.



WEEKLY TOOLBOX TALKS



Weekly Toolbox Talks

Each jobsite and the shop will be required to hold a brief (5-10 minutes) safety meeting each week.

At the beginning of each month the Safety Director will send you a packet for the entire month. This packet will contain a sign-in sheet and a different safety topic for each week. Topics will be of a wide variety. If you feel that the topic is not appropriate for what you are working on, then discuss safety items that you encounter on your jobsite.

Guidelines for conducting a fast, efficient, meaningful safety meeting.

1. PRE-PLANNING

You can do this very easily and quickly. First read and understand our weekly safety topic and important safety reminders. Since each job has its own individual safety requirements and problems, take the time to write your comments in the space provided on our safety meeting form. It's a good idea to have your meeting at the same time each week. We recommend Monday morning. Start the workweek with safety in mind. Be sure that everyone knows about the meeting in advance and demand punctuality.

2. DELIVERY

Start the meeting promptly. Remember YOU are running the meeting, so get their attention and keep it. Don't allow horseplay or interference. Keep in mind that time is of the essence. This is costing us time and money. If you are prepared, most of our meetings can be conducted in approximately 5 minutes. Once you have completed the meeting, ask for questions on the topics discussed and for safety recommendations. Be very careful - don't encourage gab sessions on other topics. As soon as you are finished have the form signed. Get everyone back to work.

3. COMPLETION

Be sure you follow-up in correcting any hazards that have been called to your attention. As a supervisor, you must set a good safety example for your employees. If they see you violating rules, they will too. Remember, safety education promotes safety awareness, which in turn reduces deaths and accidents that in turn will increase our profits.

We hope you will keep this guideline and refer to it often. It is your delivery that is the key to our maximum impact, minimum time safety program.



WEEKLY SAFETY MEETING

JOB NUMBER: _____ JOB FOREMAN: _____

JOB LOCATION: _____ DATE: _____

PROJECT MANAGER OR MEETING LEAD: _____

EMPLOYEES PRESENT: (EACH EMPL MUST WRITE THEIR OWN NAME)

_____	_____
_____	_____
_____	_____
_____	_____

ITEMS DISCUSSED:

_____	_____
_____	_____
_____	_____

ITEMS ON THE JOB THAT NEED SPECIAL ATTENTION:

_____	_____
_____	_____
_____	_____

» SEND COMPLETED REPORT TO SAFETY DIRECTOR »



Back Injuries

Most of you have two things in common, handling a wide variety of heavy construction materials, and suffering from back injuries because of it.

It's been estimated that 75 million Americans are currently victims of back ailments. During their lifetime some 85% of the population will suffer from some form of back pain, and 33% will be serious enough to result in a disability. The average cost of a disabling back injury today exceeds six thousand dollars, and sooner or later we all pay the bill.

There are many forms of disease that can lead to back pain however, 9 out of 10 cases are due to injuries caused by over stressing the back, which can usually be blamed on the body (poor physical condition), or the brain (poor training or judgment).

If you picture a human skeleton, it's easy to visualize just how weak the spinal column is. The secret to a healthy back is to maintain strong, flexible muscles.

As modern technology continues to reduce the physical effort required for many jobs, the side effects often include excess weight gain and flabby muscles, both of which contribute to back ailments. Good health and a strong back require a healthy diet and appropriate exercise. Ask your doctor for advice on both.

Use your brain to save your back -- THINK FIRST, LIFT SECOND. If the load is too heavy or awkward, GET HELP, NOT HURT. If the load is liftable, take the time to do it right -- bend at the knees into a squat position, get a firm grip on the object, then with your back straight and vertical, lift with your legs.

SAFETY REMINDER

***BY BENDING OVER AND IMPROPERLY LIFTING
A 70 POUND LOAD, YOU CAN TRANSMIT A FORCE OF
OVER 1000 POUNDS TO YOUR LOWER BACK!***

Hardhats

Stand tall and be proud as you wear your hard hat. It has become a visible symbol of the American construction industry and identifies you as a construction employee who works hard, smart and safe, and is darn proud of it!



But the purpose of this hard hat isn't just looks -- think of it as your silent bodyguard, in charge of protecting your most valuable possession -- your head and brain.

If you're lucky, you will wear your hard hat throughout your entire working life without ever needing it, but on the other hand, if your hard hat saves your life only once, doesn't that make up for all those days it just sat on top of your head?

Most parts of the human body can withstand a substantial blow and survive, but not the head. A minor blow to an unprotected head from even a small falling object can cause damage to your brain and change your life forever. Impact to the head can cause damage as the brain collides with the inside of the skull, or to the delicate brain stem and spinal cord connection, or worse yet, serious brain damage as a result of penetration by a bone fragment or by the impacting object.

In addition to protection from falling objects, your hat can also protect your head from electrical shock, burns, and chemical spills.

There are no worthwhile excuses and not wearing a hard hat; after all, OSHA, employers, insurance companies, unions, and even customers all insist that you wear one, not just to improve your good looks, but because hard hats work!

SAFETY REMINDERS

EACH YEAR HARD HATS PREVENT OVER
ONE HUNDRED THOUSAND HEAD INJURIES. WILL THIS
BE YOUR YEAR TO BE INJURED, OR WILL YOU BE PROTECTED?

Flammable & Combustible Liquids

Flammable and combustible liquid accidents happen fast -- spills or explosions can cause instant, serious burn injuries -- and their fires spread rapidly, burn hot, and are often difficult to extinguish.

To eliminate these tragic, painful and expensive accidents, you must first understand the cause. Most flammable and combustible liquid accidents occur because people, maybe even you, don't thoroughly understand how to store, handle, or use them properly.



INDOOR STORAGE - OSHA limits the combined indoor storage quantity of flammable and/or combustible liquids to 25 gallons per room unless stored in an approved storage cabinet, in which case you can store up to 60 gallons of flammable liquids and 120 gallons of combustible liquids, with a maximum of three such storage cabinets in any one area. At least one fire extinguisher rated 20B must be located outside the storage room within 10 feet of the door.

- *NEVER* store any amounts of flammable or combustible liquids in stairways, passageways or exits.

OUTDOOR STORAGE - Outside container storage shall not exceed 1100 gallons in any one area, and storage areas shall be no closer than 20 feet from any building. The ground must slope away from the building to divert spills, or a curb or dike built to retain spills. All tanks must be grounded and 'DANGER - NO SMOKING' signs posted. A fire extinguisher rated 20B must be located no closer than 25 feet nor further than 75 feet away.

Gasoline is a fuel. *NEVER* use it as a cleaning fluid or thinner. *ALWAYS* store gasoline in approved containers -- *NEVER* in unapproved plastic or glass containers. *ALWAYS* shut engines off and allow nearby parts to cool before refueling.

SAFETY REMINDERS

REGULATIONS GOVERNING TRANSPORTATION, STORAGE DISPENSING & USE OF FLAMMABLE & COMBUSTIBLE LIQUIDS VARY. REVIEW & COMPLY WITH ALL LOCAL, STATE & FEDERAL REGULATIONS FOR YOUR AREA.

Highway Construction

Our nation's railroads are slowly vanishing. Cities are expanding, making commuting a way of life. Our highway system has become so important that our nation's economy, growth, national defense, and survival itself depend on the existence and condition of our highways.

In addition to our currently crowded traffic conditions, experts predict that the volume of traffic on our highways will increase by 65% in 20 years and double within 30 years. These projections translate into a tremendous number of future construction jobs, and unfortunately, into a staggering number of construction worker injuries and deaths as well.

Please be careful -- the accident frequency for bridge and highway work is high. Here are a few reasons why:

- To minimize inconvenience to the public, construction schedules are tight
- Traffic movement is often dangerously close to worker and equipment



- Heavy equipment is big and fast moving.
- Excavation areas are often limited or restricted.
- Falls continue to occur from bridges and high elevations.

The old saying 'haste makes waste' might also mean 'rushing promotes accidents'. Fast moving jobs require solid safety scheduling and total alertness from all employees. Never rely on the judgment of motorists. Establish a safe traffic plan before the job starts, and use all required signs, markings, barricades, lights, etc. All flag persons should be well trained and understand their responsibilities and authority.

Bridge and highway materials are often heavy -- if it's too heavy to lift safely yourself, GET HELP. When using power equipment, make sure that the equipment and components are safe. LOOK UP to spot overhead electrical wires. NEVER ride on a load or headache ball or get under any suspended load. ALWAYS flag off crane counterweight swing areas.

Operator blind spot areas are common with most heavy equipment and large vehicles so ALWAYS stay within the operator's field of vision.

SAFETY REMINDER

START YOUR DAY THE SAFE WAY.

EACH MORNING PROMISE YOURSELF TO RETURN HOME FROM WORK IN THE SAME
CONDITION YOU'RE IN AS YOU LEAVE.

Heat Illness

Very few construction related activities are performed under ideal humidity and temperature conditions, in fact 'HOT WORKING ENVIRONMENTS' are routinely expected and accepted by most construction employees. If you fit into this category, pay close attention, because despite how healthy, strong, or 'MACHO' you think you are, YOU can still become a victim of heat illness. When the humidity is low, and temperatures are high your risk increases. This is when you must recognize, understand and respond promptly to body signals indicating the following:

HEAT CRAMPS - SYMPTOMS: Severe muscle spasms in the back, stomach, arms and legs, attributed to the loss of body salt and water during periods of heavy perspiration. *FIRST- AID:* Move the victim to a cooler area, allow the victim to drink approximately 6 ounces of water every 15 minutes, and follow up with medical examination.



HEAT EXHAUSTION - SYMPTOMS: Heavy sweating, cool pale skin, nausea, headache, weakness, fast pulse, vomiting, and abnormal temperature, which often occurs when perspiration evaporates too slowly to properly cool the body. **FIRST-AID:** Move the victim to a cooler area, keep the victim lying down with legs slightly elevated, cool the body by fanning and applying cool wet towels, allow a conscious victim to drink approximately 6 ounces of water every 15 minutes, and follow up with a medical examination.

HEAT STROKE- SYMPTOMS: High body temperature, red and often dry skin, rapid breathing and pulse, headache, nausea, vomiting, diarrhea, seizures, disorganization, confusion, or unconsciousness. **FIRST-AID:** Heat stroke is life threatening! Move fast! If present, instruct a bystander to call an ambulance, move the victim to a cooler area, remove outer clothing and immerse the victim in cool water or apply cool wet towels to the body, give no liquids, and treat for shock until professional help arrives.

Prevention tips: Alter work schedules to avoid the hottest hours and reserve shady areas for peak temperature periods. Wear lightweight, light colored clothing. Drink ample amounts of water often. Maintain a healthy diet and get sufficient rest.

SAFETY REMINDERS

YOUR ODDS FOR SKIN CANCER INCREASED BY 90% DUE TO OZONE DEPLETION.
USE PROTECTIVE CLOTHING & MINIMUM #15 SUNSCREEN ON EXPOSED SKIN.



SAFETY VIOLATION PROGRAM AND ACCIDENT REPORTING



Safety Violation Program

PHEIFER BROS. CONST. CO., INC. is instituting a procedure for citations for violations of our Safety Programs.

This program was created under the guidelines of the U.S. Department of Labor (OSHA), to record all safety violations and the disciplinary action taken by the employer.

When any Pheifer Bros. Supervisor, which includes Superintendent or Foreman, sees a safety violation, a ticket with your recommendations must be filled out and sent to the Safety Director who will distribute copies to other staff personnel. Any disciplinary action needed will take place after thorough review.

A complete file of all violations will be kept for future reference.

All Pheifer Bros. lead persons are urged to cooperate in making our projects safer for all workers and to enforce this program. Any Foreman who knows of a safety violation and does not cooperate in this program, will be liable for a safety violation ticket himself.

A sample of this ticket is attached for your reference.



PHEIFER BROS. CONST. CO., INC.

SAFETY VIOLATION

Name: _____ Craft: _____

Location: _____

Violation: _____

☐

SERIOUS

☐

NON-SERIOUS

☐

REPEATED

Penalty Recommendations

☐

Warning

☐

_____ Days Suspension

☐

Termination

I certify that I have received a copy of the safety violation and have had the opportunity to ask questions.

Employee Signature

Date

Violation issued by (signature)

Date

Please return the completed ticket to the Safety Director



Safety Policy

**COMPLETE BOTH
SIDES OF FORM!**

ACCIDENT INVESTIGATION REPORT

Employee Name _____ Soc. Sec. No. _____

Address _____ City, State, Zip _____

Home Tel. No. (____) _____ Age _____ Birthdate _____

Date Hired _____ Sex ☐ M ☐ F Occupation _____

Job No. _____ Job Location _____ Date of injury _____

Time _____ AM _____ PM Date employee reported the injury _____

Nature of injury _____

Did employee receive first-aid treatment at the job site? ☐ Yes ☐ No

If Yes, by whom _____

Did employee go to a clinic/hospital? ☐ Yes ☐ No

If Yes, name of clinic or hospital _____

Phone number/address _____

Did employee see a physician? ☐ Yes ☐ No

If Yes, name of physician or other health care professional _____

Phone number/address of physician _____

Was employee treated in an emergency room? ☐ Yes ☐ No

Was employee hospitalized overnight as an in-patient? ☐ Yes ☐ No

Did employee return to work on his/her injury date? ☐ Yes ☐ No

If No, when is employee expected back? _____

Is restricted activity expected? ☐ Yes ☐ No

Did employee die as a result of injury? ☐ Yes ☐ No If Yes, Date of death _____



Safety Policy

What was the employee doing just before the incident occurred? Please describe the activity, as well as the tools, equipment, or materials the employee was using. BE SPECIFIC! Examples: "climbing a ladder while carrying roofing materials"

What happened? Please describe how the injury occurred. Example: "When ladder slipped on wet floor, worker fell 20 feet" BE SPECIFIC!

What was the injury or illness? Tell us the part of the body that was affected and how it was affected. BE SPECIFIC! Example: "strained back"; "chemical burn on right hand"

What object or substance directly harmed the employee? Examples: "concrete floor"; "chlorine"

Was there any property damage? ☐ Yes ☐ No If Yes, please explain _____

Name of witnesses _____

What can be done to ensure that this does not happen again? _____

EMPLOYEE SIGNATURE

DATE

SUPERVISOR SIGNATURE

DATE



RETURN TO WORK PROGRAM



Return to Work Program

Table of Contents

- A. Purpose
- B. Requirements
- C. Employee Salary
- D. Employee Responsibility
- E. Employer Responsibility
- F. Sample Letter



A. Purpose

Through the use of a return to work program it is the intention of Pheifer Bros. to control the cost of on-the-job injuries by helping employees return to work and reduce the economic and personal impact of their workplace injuries.

B. Return to Work Requirements

1. Treating physician must agree to allow an employee to return to work during the healing process.
2. Work is available within limitations set by the treating physician.
3. Restricted activity status can be maintained for three (3) months.

C. Employee Salary

1. Employees will be placed in a job category that will accommodate any restrictions indicated by the treating physician. Employee wages will be contingent upon prevailing wage rate applicable to job category.
2. Fringe benefits shall be paid based on the actual hours worked.

D. Employee Responsibility

1. Continue and abide by all physician ordered treatment plans.
2. Work within all limitations set by the physician.
3. Immediately report any change in physical condition to his/her supervisor.

E. Employer Responsibility

1. Notify treating physician of the Return to Work Program with an explanation of the program and an offer to discuss options available in the program.
2. Never ask or knowingly allow an employee to exceed restrictions set by the physician.
3. Notify workers compensation carrier weekly to inform them of the hours employee worked and to provide and/or receive an updated status report.



F. Sample Letter

Date

Address 1

Address 2

City State Zip

RE: Employee Name
Injury & Date of Injury

To Whom It May Concern:

You have been treating the above-referenced employee for a work-related accident.

Pheifer Bros. Const. Co., Inc. has established an early return to work program to aid employees in the healing process and to limit the financial impact of the injury on the employee and us.

Construction has the reputation of being physically demanding. While this is often the case, there are ample opportunities for light duty or restricted activity work.

There is a diversity of tasks within each craft that we can often find meaningful employment well within the limitations placed on an injured employee by his/her physician.

I am willing to work with you to assure that the above employee can return to work quickly and safely. If you have any questions concerning activities, we have available and the associated physical requirements please do not hesitate to contact me.

I appreciate your assistance in helping to make our light duty work program effective.

Very truly yours,

Matt R. Gehl Compliance Specialist

cc: Employee Medical File
Workman's Compensation File
Workman's Compensation Carrier



OSHA INSPECTION GUIDELINES



OSHA Inspection Guidelines

1. Immediately notify Pheifer Bros.'s Safety Director upon learning that an OSHA Compliance Officer is on site.
2. Obtain the Compliance Officer's name from his credentials and obtain his/her business card. If you have questions concerning the Compliance Officer's authenticity, contact the area OSHA office to verify his/her credentials.
3. Remain with the Compliance Officer until he/she leaves the jobsite.
4. Take notes and write down every request or statement made by the officers and record your response. Note any equipment used by the Compliance Officer. If you have equipment designed to perform the same tests, use it at the same time and point out any differences and attempt to reconcile them.
5. DO NOT volunteer information.
6. DO NOT expand the area of inspection beyond the Compliance Officer's request.
7. Know your responsibility under the contract.
8. Show good faith effort. Any violation pointed out by a Compliance Officer should be corrected within a reasonable timeframe.
9. Complete and forward to the Safety Director the OSHA Inspection Report. A detailed account of the inspection can save time and money if we are able to defend ourselves against unwarranted charges.
10. Above all, remember that you are a representative of Pheifer Bros. Please be courteous and cooperative.

OSHA Inspection Report

Job Information

Job Name _____ Supervisor _____

Location _____
 Address _____ City _____ State/Zip _____

Inspection Date_____Officers Name _____

I. Person assigned to go with the OSHA Compliance Officer (CO)?

Name	Title
------	-------

2. Who did the CO first approach on site?

Name	Title
------	-------

3. Did the CO show his/her credentials? **D** Yes ☐ No

4. Did the CO talk with personnel before showing his/her credentials?
☐ Yes ☐ No

5. Did the CO take any pictures before introducing him/herself? **D** Yes ☐ No

6. Were other companies' personnel on the jobsite, and did the CO ask for them to be present at the opening conference? **D** Yes **D** No
If yes, please list the other companies and whether they are subcontractors, vendors or other of Pheifer Bros.



~Opening Conference~

Please list the people present: _____

I. What was the purpose of the visit as explained by the CO?

2. Was there a complaint? If yes, please explain: ☐ Yes ☐ No

3. Were you given a copy of the complaint? ☐ Yes ☐ No

4. Did the CO review record keeping as stated under OSHA regulations?

☐ Yes ☐ No

~The Inspection~

Please list the people present during the walk-around: _____

I. Were they paid for the time they spent? ☐ Yes ☐ No

2. Briefly list the comments made by the CO:



Safety Policy

2. Were pictures taken? If yes, please explain (include location) ☐ Yes ☒ No

3. Was any portion of the project shut down as a result of this inspection?

☒ Yes ☐ No

If yes, please explain (comments made by CO, how long, nature OR reasoning)

~Closing Conference~

Please list the people present during the walk-around: _____

- I. Did the CO allege that violations took place? ☒ Yes ☐ No

Please explain: _____

~Time Schedule~

Time OSHA Compliance Officer arrived	_____ ⁰ a.m. ☐ p.m.
Time Opening Conference began	_____ ⁰ a.m. ☐ p.m.
Time Opening Conference closed	_____ ⁰ a.m. ☐ p.m.
Time Inspection began	_____ ⁰ a.m. ☐ p.m.
Time Inspection closed	_____ ⁰ a.m. ☐ p.m.
Time Closing Conference began	_____ ⁰ a.m. ☐ p.m.
Time Closing Conference closed	_____ ⁰ a.m. ☐ p.m.

Pheifer Bros. Representative Signature

Date



SITE SPECIFIC HAZARD MANAGEMENT PLAN



SITE SPECIFIC HAZARD MANAGEMENT PLAN

FACILITY OPERATORS:

This plan is intended for all workers on the Pheifer Brothers Construction Job:

This information must be utilized in the case any hazardous levels of materials are detected, although none are expected at this time.

1.1 Project Stations and access

--

1.2 Brief Description

--

1.3 Street Address

--

1.4 Contingency plan

--

1.5 Emergency Directions

--

1.6 Work Shifts

--

1.7 Possible Hazardous Sites

--



1.7 Prevention of Hazard Migration

--

1.8 Located in city limits

--

1.9 Water Levels

--

2.0 Emergency Contact

--

2.1 Secondary Contact

--

2.2 Onsite Employees

--

2.3 Additional contacts

--

2.4 Fire Department

--

2.5 Onsite Accountability

--

2.6 Evacuation

--



2.7 Material Handling

--

2.8 Material Shipping

--

2.9 Material Storage

--

3.0 O.S.H.A. Training

Ryan Pheifer completed his OSHA training thru the Associated Builders and Contractors in March of 2001 by a U.S Department of Labor trainer in the Occupational Safety and Health Administration. This class was conducted over several days at the Club West location, ending on the twenty eighth of March 2001.

3.1 Decontamination

--

3.2 Heat or Flame Hazards

--

3.3 Medical and First Aid Equipment

--

3.4 Site Map: Please copy/paste plan map from Specs.



Safety Policy

3.5 Site Runoff Control

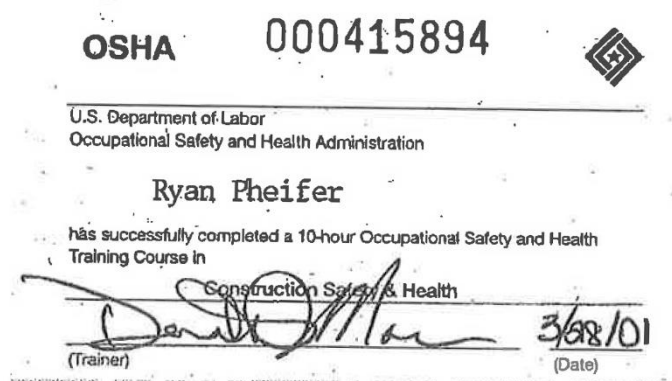
3.6 Fall Protection Plan

3.7 Water Works – Water Safety

3.8 Silica Dust Control

Please contact with any questions.

Ryan Pheifer





Employee Acknowledgement

It is the policy of PHEIFER BROS. to provide a healthy environment and safe place of employment for all employees and to abide and enforce all applicable regulations as they pertain to our operation.

I certify that I have received a copy of the Pheifer Brothers Construction Company, Inc. Safety Policy and Safety Programs Binder. I have had the opportunity to ask questions regarding the materials included and I fully understand its contents and my responsibilities as an employee of Pheifer Bros. I understand that the Safety Policy and Safety Programs Binder is not a contract or guarantee of employment, that my employment is considered at-will, that I or Pheifer Bros. may term in ate my employment with or without notice or cause at any time, and that I may not reasonably rely on any other expectation oral or written representation about my employment.

Employee Name (Print)

Employee Signature

Pheifer Bro. Representative Signature

Date