

Clearheart Construction Co., Inc.

Project Site Safety Meeting Log Volume I

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Project Site Safety Meetings

Volume I

Clearheart Construction Co., Inc.

ELECTRICAL

Clearheart Construction Co., Inc.

SAFETY MEETING

Note: Our company conducts scheduled safety meetings to focus attention on one major safety topic per meeting. Should an employee have a question on any subject related to safety or job procedure, it will be addressed by the person conducting the meeting.

EXTENSION CORDS

Extension cords are not a substitute for permanent wiring and, if not needed, it is better not to use them. However, on job sites extension cords are often required and the following safety precautions must be adhered to:

- a. Inspect the cord for cracks and cuts. Worn or frayed cords will not be used.
- b. Make sure the extension cord has a ground (three prong plug). Proper grounding helps to protect against shock, fire, and lightning. Use of a ground fault circuit interrupter will insure the integrity of the ground. If you must use a two prong outlet, connect the male end of the extension cord to a "3-wire to 2-wire" adapter. Make sure the ground wire on the adapter is attached to a ground. Never break off the grounding prong to fit a two (2) hole outlet.
- c. Use the shortest continuous length of cord possible. For example, one (1) 50' cord will be used in lieu of two (2) 25' cords. Cords will not be spliced together.
- d. Make certain the cord does not lay in water.
- e. Make sure the cord is properly rated for the job. Buy only extension cords which bear the UL (Underwriters' Laboratories, Inc.) label. Without a UL approval, there is no assurance of safety. If you make your own extension cords, again, use only UL approved components.
- f. Cords will be secured and out of the traffic flow to prevent tripping and/or damage to the cord. Extension cords will not be fastened with staples, hung from nails, or suspended by wire.
- g. Extension cords shall be at least the gauge of the device to which they are connected. Should a 14-gauge cord (rated for 9-14 amps and 1,080-1,680 watts) be connected to a device requiring a 10-gauge cord (20-amps and 2400 watts), the cord may overheat and even catch fire yet not trip the fuse or circuit breaker. Fuses and circuit breakers are designed to protect the permanent wiring.
- h. Extension cords are to never be used for purposes other than that for which they were designed. They are not tow ropes.
- i. Extension cords should be disconnected by pulling on the male and female ends, not by yanking out of the socket by pulling on the cord itself.

Extension cords are used all the time on job sites -- use them with care!

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GROUND FAULT PROTECTION

If you are working on a job site with a properly insulated electrically powered hand tool that has a three 3 prong plug attached to the power source, what is the point of a Ground Fault Circuit Interrupter GFCI? After all, proper insulation and grounding are recognized methods of preventing injury during electrical equipment operation. Furthermore, doesn't the circuit breaker trip or fuse blow before any injury can occur? The answer is no! GFCI's are required by all 120-volt, 15-, 20-, and 30-ampere receptacle outlets that are not a part of the permanent wiring of a building. GFCI's provide employee safety by detecting lost current resulting from a short, overheating, and/or ground fault and "tripping" or cutting off the current. Because extension cords into which electrical devices are plugged are not part of the permanent wiring, they require GFCI's.

A GFCI will "trip" when the amount of current amperes going to an electrical device in the hot conductor and the amount of current returning from an electrical device differs by approximately 5 milliamps. The current that is missing is being lost through a ground fault, whether it is in the actual grounding or a short in the equipment or electricity going through the worker to the ground. The GFCI can interrupt the current within as little as 1/40th of a second.

A milliampere is one thousandth of an ampere and the effects of electric current on the human body are as follows:

1 milliamp	A faint tingle.
5 milliamps	Slight shock felt; disturbing, not painful. Average individual can let go. Involuntary reactions can lead to injury.
6-30 milliamps	Painful shock; muscular control lost. The point where it is difficult, or impossible, to let go.
50-150 milliamps	Extreme pain; respiratory arrest; severe muscular contractions; cannot let go; possible death.

A GFCI **will not** protect an employee who comes in contact with two hot wires or a hot wire and a neutral wire. A GFCI **will** provide protection against fires, overheating, damage to insulation, and, the most common form of electrical shock hazard -- the ground fault. Always **test** a GFCI before use.

A safety note: Ohm's law states that Amperes = Volts ÷ Ohms. If resistance is increased and the voltage remains the same, the amperes current will decrease. This relationship between "resistance" (such as rubber gloves, rubber boots, insulators, insulation on electrical cords) and the flow of current (Amperes) indicates that properly grounded electrical devices will accept the flow of current as opposed to your body. Should a fellow employee be in contact with a live electrical source, disconnect the power source, trip the fuse, or unplug the electrical cord before touching him/her.

EQUIPMENT

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CRANES

Cranes, as all pieces of heavy equipment, if not properly operated, inspected and maintained, have a potential of causing major bodily injury or property damage. Care must be taken in all facets of crane operation.

Not only do cranes require a thorough annual inspection (a record of the dates and results of these inspections must be maintained), they require inspection prior to each use and even during use by a competent person.

All rated load capacities, recommended operating speeds, special hazard warnings or instructions must be readily visible to the operator of the crane.

While cranes easily have the lifting ability to hoist employees on a personnel platform, this is absolutely prohibited except in very special cases, i.e., when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous or is not possible because of structural design or worksite conditions.

Dangers associated with cranes include numerous moving parts. These dangers can be minimized or eliminated through ensuring that all guards are in place and not tampered with.

Care must be taken to ensure that areas within the swing radius of the rear of the rotating superstructure of the crane be barricaded to prevent a person from being struck or crushed.

It almost goes without saying that all employees must keep clear of loads that are about to be lifted as well as suspended loads.

Hand signals used to guide the crane operator will be consistent with the ANSI standard for the type of crane in use and an illustration of the signals must be posted at the job site.

Care must be taken while actually operating the crane in hoisting applications as well as when relocating the crane superstructure.

If you are not directly involved with crane operations, keep clear!

Keep in mind that a mistake around an active crane could be your last -- stay alert!

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HAND & PORTABLE POWERED TOOLS

Hand tools make your work easier. In fact, without hand tools, most jobs could not be accomplished at all. They are an extension of your body and they are absolutely vital on the job site.

However, even the most simple of hand tools, when not properly maintained or when used improperly can cause injury.

When using hand tools, select the right tool for the job and when you are finished using the tool, store it in its proper place having assured yourself it is "fit" for continued use.

Hand tools shall be used only for the purpose for which they are designed. For example, do not use a wrench as a hammer or a screwdriver as a chisel.

Hand tools should be inspected before use and damaged tools repaired, tagged out of service, or discarded. Tools should be kept clean and, where appropriate, oiled. Cutting tools will be kept sharp and will be sheathed when not in use. Proper personal protective equipment will be used when appropriate -- for example when using a striking tool such as a chisel, safety glasses or goggles will be used.

Portable electric 110V power tools should be grounded and, if appropriate, guarded. If not using permanent wiring or if using an extension cord on the job site, a ground fault circuit interrupters (GFCI) must be used.

On a job site, there is the possibility of seeing or using many types of portable power tools such as circular, saber, scroll, and jig saws, hand held drills, grinders, belt and vibrating sanders, fasteners and a variety of compressed air tools. Each tool item has its own special safety features and proper procedures for use. Each tool has the potential for causing serious injury if not properly used. It is good idea to keep the owner's manual with the power tool for ready reference.

Portable powered hand tools require specific personal protective equipment such as safety glasses or goggles, gloves, or ear protection.

Safety around portable powered hand tools extends beyond the operator and the specific tool. Care must be taken to avoid injury to others. By the same token, you should keep clear of persons operating these tools. Remember, a piece of debris may strike your eye, for example, even if you are not operating the tool. Stay clear.

If you are unfamiliar with the proper procedure for using, maintaining, or inspecting any tool, ask your supervisor for instruction.

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LADDERS

How easy it is to overlook ladder safety. After all, who hasn't used a ladder? All persons using ladders are required to receive training and understand proper procedures for ladder use before using a ladder on the job site.

All ladders will meet the applicable national consensus standards. ANSI and NIOSH approval labels should never be covered with paint or tape. Having ladders that are constructed to standard will prevent collapse and resultant falls.

Some important operational procedures for ladders are listed below:

- a. Ladders will never be overloaded.
- b. Ladders will not be tied or fastened together unless they are so designed.
- c. Portable ladders used for gaining access to an upper level will extend at least 3 feet above the upper landing surface; or the ladder will be secured at its top.
- d. Ladders must be free of oil, grease, or other slipping hazards.
- e. Ladders shall only be used for the purpose for which they are designed.
- f. Non-self supporting ladders will be used at an angle that the horizontal distance from the top support to the foot of the ladder is approximately $\frac{1}{4}$ of the working length of the ladder.
- g. Ladders will only be used on stable and level surfaces unless secured to prevent displacement.
- h. Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement.
- i. Ladders placed in any location where they can be displaced by workplace activities or traffic will be secured to prevent accidental displacement; or a barricade will be used to keep the activities or traffic away from the ladder.
- j. The area around the top and bottom of the ladder shall be kept clear.
- k. Portable ladders with structural defects will be immediately marked in a manner that readily identifies them as defective and removed from service until repaired.
- l. When going up or down a ladder, face the ladder and use at least one hand.
- m. Do not to carry any object that could cause loss of balance and a resultant fall.

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PILE DRIVING

The most common use of piles is to transfer the weight of a load to a depth where it can be supported (point resistance). This is generally accomplished by either driving a bearing pile through poor material into a stratum of good bearing capacity or driving a friction pile deep into a stratum of limited supporting ability and the friction on the side of the pile provides the carrying capacity (skin resistance). Often the load capacity of piles is the result of both point resistance and skin resistance.

Pile driving is a very complex, technical procedure that requires the expertise of engineers, pile and pile driving equipment manufacturers, and operators. Personnel involved with pile driving know their specific job duties and it would be impossible to even scratch the surface of the complexities of pile driving in a short safety meeting. However, there are some basic safety rules that are found in 29 CFR 1926.603, *Pile Driving Equipment*.

- a. Overhead protection must be provided that is the equivalent of 2-inch planking and this protection must not obscure the vision of the operator.
- b. Stop blocks must be provided for the leads to prevent the hammer from being raised against the head block.
- c. A blocking device, capable of safely supporting the weight of the hammer, must be provided for placement in the leads under the hammer at all times while employees are working under the hammer.
- d. Guards must be provided across the top of the head block to prevent the cable from jumping out of the sheaves.
- e. When the leads must be inclined in the driving of batter piles, provisions must be made to stabilize the leads.
- f. Fixed leads must be provided with ladder, and adequate rings, or similar attachment points, so that the loft worker may engage his safety belt lanyard to the leads. If the leads are provided with loft platforms, the platforms must be protected by guardrails.
- g. Guys, outriggers, thrustouts, or counterbalances must be provided as necessary to maintain the stability of pile driver rigs.
- h. Engineers and winchmen shall accept signals only from the designated signalmen.
- l. All employees must be kept clear when piling is being hoisted into the leads.
- j. Steam line controls shall consist of two shutoff valves, one of which must be a quick-acting lever type within easy reach of the hammer operator.
- k. Safety chains, or equivalent means, must be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.

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SCAFFOLDING

Scaffolding, by definition, is a temporary structure. Because scaffolding must support people and equipment at a raised elevation, certain precautions must be taken to protect the persons actually using the scaffold as well as those erecting and dismantling the scaffold and those on the ground near the scaffold. Failure to follow basic safety rules can lead to serious injury and/or death. Properly used, scaffolding provides an enormous benefit to job accomplishment. Improperly used, scaffolding can be deadly. All scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent (by training or experience) person. Before using scaffolds, you must receive training that addresses the hazards associated with scaffold use, specifically:

- a. Electrical hazards.
- b. Fall hazards.
- c. Falling object hazards.

Additionally, prior to any scaffold use, you must receive training that explains:

- a. The correct procedures for dealing with the above hazards.
- b. The proper use of scaffolds and the proper handling of materials on the scaffold.
- c. The maximum intended load and the load-carrying capacities of the individual scaffolds being used.
- d. The availability of OSHA standards pertaining to scaffold use.

When working under a scaffold, hard hats are required, and, when working on a scaffold more than ten (10) feet above a lower level, fall protection must be provided. Guardrails and/or a personal fall arrest system are the most common types of fall protection, however, certain special types of scaffolds may require a unique type of fall protection such as a grabline. Fall **prevention** is equally important as fall **protection**. Accumulated debris, ice, high winds, overloading, improper erection, extending one's reach by standing on boxes or loose ladders, etc., all contribute to the strong possibility of falling.

Within the broad categories of suspended and supported scaffolds, there are many specific types of scaffolds -- each with its own limitations and special characteristics. Further, each job site has its own unique ground composition on which a supported scaffold is erected or unique attachment points for suspended scaffolds. Prior to using any scaffold, you will be instructed on any unusual or unique item of instruction that must be known about a specific circumstance. Of course, you are encouraged to ask your supervisor if you have any questions or concerns about the scaffold system you are using on a particular job site.

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WELDING

Only authorized and trained personnel are permitted to use welding, cutting, and/or brazing equipment and those persons will use appropriate personal protective equipment.

Extreme care must be taken when welding containers such as tanks or drums. They must be thoroughly cleaned to eliminate the possibility of explosion or the release of toxic vapors.

An appropriate fire extinguisher will be readily available for immediate use. A fire watch will be assigned when there is potential a fire might develop. When welding, cutting, or brazing near a fire hazard and the fire hazard cannot be isolated, shields will be used to confine the sparks, heat, and slag.

The welding operator will insure there is adequate ventilation where he is working.

All cylinders of compressed gas will:

- a. Have valve protectors in place when not in use or connected for use.
- b. Be legibly marked to identify the gas contained therein.
- c. Will have the valves closed before the cylinder is moved; when the cylinder is empty; and at the completion of each job.
- d. Will be stored in areas that are free from intense heat, electric arcs, and high temperature lines.
- e. Will be securely chained when in a portable dolly; in storage; or in transportation from tipping, falling, rolling, and damage from passing or falling objects.
- f. Will be marked: "EMPTY", when appropriate.
- g. Will be used only for the purpose for which they are designed. For example, cylinders will not be used as rollers or supports.
- h. Will be kept away from stairs.

All cylinders, cylinder valves, couplings, regulators, hoses and apparatus will be kept free of oily or greasy substances.

Welding is a special skill. If you are working around welding operations use caution with emphasis on eye protection and hot projectile protection.

GENERAL SAFETY

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ACCIDENT INVESTIGATION

Job site accidents do not happen in a vacuum. There is a reason, or more accurately **reasons**, for every accident. The five (5) W's must be answered by the accident investigator: Who; What; Why; When; and Where. The purpose of Accident Investigation is to prevent the same type of accident from reoccurring.

Apparently simple accidents may actually be caused by many complex and overlapping reasons. For example, a worker accidentally drops a hammer from a ladder and it strikes a co-worker who is holding (securing) the ladder. The co-worker is not wearing a hard hat. Certainly, the initial finding would blame the co-worker for not wearing a hard hat. Case closed. Wrong!

In the above scenario, why was the co-worker not wearing a hard hat? Were they available? Was it company policy to wear hard hats? Was this policy enforced? Had this violation of safety procedure been overlooked by supervisors to the point where it became standard operating procedure? Were shortcuts taken because someone put a higher premium on production than on safety? Why did the hammer fall in the first place? Did the hammer have a proper grip or was it extremely cold and the worker had no gloves? If so, were warm, non-slip gloves available? Could engineering controls (a net) or changes in procedure be devised to prevent the reoccurrence of this accident and like accidents? (Objects falling from above.)

To get the answer to these and other questions, as soon as possible, statements should be taken from all witnesses to an accident. All relevant factors should be considered. Was the accident preventable by a change in work methods? (Physically securing the ladder.) Was the accident preventable through redesign of the hammer? (A non-slip handle.) Was the accident preventable by increased safety training? (Emphasis on the reasons for, and the requirement to, wear hard hats.) Was the accident preventable through stronger management supervision? (Not letting slipshod safety practices become standard operating procedures.)

The primary focus of an accident investigation, after gathering all the facts, is to determine how to prevent the accident from reoccurring. It is not to find fault with any particular individual. However, the results of an accident investigation may indicate that additional safety training is necessary.

It is easy to overlook near-miss accidents (a hammer drops and no one is hit) or minor accidents such as a worker falling off a ladder and not getting hurt at all. This is a mistake because near-miss and minor accidents have the same causes as serious accidents and each time they reoccur, it is just a matter of luck whether or not an injury develops.

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ACCIDENT PREVENTION

How can we prevent accidents on the job site? First and foremost, there must be a commitment to safety from both management and employees. Part of management's commitment to safety is to assess and reassess the job site environment to determine what hazards exist and what training, engineering controls, job procedures, and/or personal protective equipment is required to eliminate the hazards.

These scheduled Safety Meetings are designed to keep all of us thinking about safety concepts in general as well as focus on specific topics that are applicable on the job site. You must think in terms of safety at all times because one lax moment can cause a lifetime of pain, suffering, or even death to yourself or a co-worker.

Do not take chances or attempt any job you are not trained to do. Understand what risks are involved and what methods are appropriate for eliminating the risks. Knowledge is your first line of defense in accident prevention. Are you aware of labels and Material Safety Data Sheets? Do you know where to find them? Do you use the appropriate personal protective equipment? Does it fit properly? Are you aware of the dangers of falling from any height? Do you know how to prevent falls? Do you know how to eliminate fire hazards? Do you know where the fire extinguishers are and how to use them? Do you check ladders, extension cords, and equipment before using? Do you know what to do if they are faulty? This line of questioning could go on and on, but, it boils down to this: do you know how to perform your job in a safe manner and do you know where to find the answers to your safety related questions?

If you have questions, ask! If you are unsure of a procedure, ask!

Do not be lulled into complacency. Because an accident does not happen when an unsafe act is committed does not mean an accident will not happen in the future. In fact, over time, disregard for safety rules will lead to an accident -- its almost a sure bet!

Basically, one must always be alert and aware.

Safety rules and procedures are generally easy to understand. Why are they repeated over and over? The answer is simple. Accidents on the job site can be prevented only if all persons think and act in terms of "safety" all the time. During our Safety Meetings, a specific safety subject will be covered in depth. However, should any employee have a safety concern about any subject, this will be addressed immediately. If the answer to a specific question is not known, it will be researched and the answer given to all employees as soon as possible.

Remember: Think Safety!

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BACK INJURIES

Occupational back injuries are generally caused by falling or improper lifting such as lifting an object that is too heavy and/or bulky; not having a good grip; and/or improper bending or twisting. If you cannot comfortably lift an item, get help!

If your spine were perfectly straight, which it isn't, and the object you were carrying were placed on your head, the weight on your lower spine would be the weight of your upper body plus the weight of the object. The load on your back increases at a tremendous rate the farther out from your spine the object is carried due to mechanical disadvantage. Keep objects as close to you as you can when lifting them. Lift with your legs, not your back.

Take shorter strides when carrying loads to lessen the strain on your muscles and back. To increase your stability and balance, your feet should be at a wider stance than normal, approximately the width of your shoulders.

Wear proper footwear for maximum traction. Be aware of the condition of the surface on which you are walking. Ice, mud and damp surfaces are slippery.

Types of accidents that can lead to back injury include:

1. slips, trips, and falls (the most common of accidents and preventable by close attention to your surroundings and maintaining a clear line of sight). Slips, trips, and falls can be prevented by something as simple as seeing where you are going. Maintain a clear line of sight when carrying an object.
2. falling from height on a job site.
 - a. employees on a walking/working surface with an unprotected side or edge which is 6 feet or more above a lower level must be protected from falling by using a guardrail system, a safety net system, or a personal fall arrest system.
 - b. employees on a scaffold more than 10 feet above a lower level must be protected from falling by the use of a guardrail system and/or personal fall arrest system (depending of type of scaffold being used.)
3. vehicular accidents (wearing a seat belt/shoulder harness will greatly reduce the likelihood of injury).

There isn't one type of fall or accident noted above that can't be prevented through exercising care, good judgment, and foresight.

Should a back injury occur, particularly as a result of fall or accident, be aware of these symptoms: pain, tingling, numbness, or inability to move arms or legs. Should these symptoms occur, an ambulance should be called and the injured employee should **not be moved** unless there is a greater immediate life threatening hazard. If the injured employee must be moved, keep the head, neck and back together as a unit; avoid bending or twisting the body; and do not let the head fall forward or backward. Improper movement could injure the spinal cord and cause permanent paralysis.

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EMERGENCY PROCEDURES

There are many types of emergencies that can occur on the job site -- fire, medical emergencies, natural disasters (primarily weather related), and man made disasters (chemical spills and utility failure). Each type of emergency requires a specific response.

Should an emergency situation develop, you should be aware of the proper procedures for being alerted and for alerting others. You should know your escape route from a building or outside work area. You should know what methods are to be employed to account for all personnel. All employees must know where available safety equipment is located and how to use it. Certainly, you must know the location of fire extinguishers, first aid kits, and the Material Safety Data Sheets.

Stay calm during any emergency!

The primary goal of our Emergency Procedures is the protection of all employees from harm. If harm occurs, the prompt application of proper medical care becomes the goal.

The protection of company equipment and property is second. People **always** come first.

Ask yourself these questions:

Do you know the location of job site first aid kits?

Do you know the proper evacuation route?

Do you know how to alert others of danger?

Do you know the chain of command?

Do you know your notification responsibilities, if any?

Do you know where to find emergency phone numbers?

Do you know where to find information on chemicals in the workplace?

Do you know where to meet after an evacuation of a job site?

These are just some of the questions to which the answers should be second nature.

If you don't know the answers to the above, ask! It could save your life.

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ERGONOMICS

Ergonomics is a relatively new field which will have a greater and greater impact on our work environment as time goes on.

Ergonomics is a word derived from the Greek word *érgon* which means work. Ergonomics involves the design of tools, personal protective equipment, machinery, and even physical layout to reduce the amount repetitive motion, lessen vibration, and to lessen the strain on the muscles and skeletal system of the body. Ergonomics also involves redesigning the way tasks are performed. Ergonomics, properly employed, makes work easier and results in less injuries.

You may have noticed how much easier it is to see, reach, and grasp the various controls in newer automobiles compared with older vehicles. This is applied ergonomics. Obviously, there are trade-offs. A car which has a perfectly designed seat, for example, can not be low and sleek. The trade off is style and aerodynamic efficiency (fuel mileage) versus no back strain.

Who hasn't heard of Carpal Tunnel Syndrome which is caused by pressure being exerted on the median nerve at the wrist. While Carpal Tunnel Syndrome may apply mainly to typists and computer operators, the identification and reduction of this syndrome is an example of where applied ergonomics has made an impact. Ergonomics will affect the construction industry with improved tool design and work methods.

Tools are being redesigned to make them more user friendly and personal protective equipment is being used to provide back support, reduce wrist motions, and provide padding while kneeling.

Repetitive wrist motions should not exceed 30° of flexion or extension. A wrist restraint can keep your wrist from exceeding 30° extension. Vibration can be reduced to a minimum by machine design and something as simple as proper gloves. Your work environment should not have temperature extremes. Temperature extremes can be directly controlled by you without interfering with your work assignment. For example, protect yourself from extreme cold with proper clothing, gloves and ear protection. How about a back support belt when lifting heavy objects? Use proper lifting techniques, keeping the back straight and the weight of the object close to your body. Wear ear protection in the event of continuous loud background noise (this is actually an OSHA requirement). Good posture and exercise (to warm up and loosen muscles before starting work) can reduce the chance of developing cumulative trauma disorders.

Be aware of ergonomics and look for ways to improve job performance and cut down on repetitive motions. No one knows your job better than you do. You may have an idea for redesigning your tools, your work methods, and your safety equipment. If you have a suggestion, present it!

Clearheart Construction Co., Inc.

SAFETY MEETING

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FIRE EXTINGUISHERS

Portable fire extinguishers are available on each job site. You should know their location and have an understanding of what types of fire extinguishers put out what types of fires. You should know how to operate each type of fire extinguisher on the job site **before** it may be needed. Instructions for proper use are printed on the extinguishers and should you have any questions, ask your supervisor. Extinguishers shall be routinely inspected.

Fire extinguishers will be serviced and certified by qualified personnel at least annually.

All fire extinguishers are identified by type of fire they will put out as noted below:

Types of Fire:

Class A: (Extinguisher has an "A" on a green triangle.)

Example: Wood, Paper, and Cloth.

Location: Within 75' of employees.

Class B: (Extinguisher has a "B" on a red square.)

Example: Combustible liquids, greases, flammable gasses.

Location: Within 50' of potential fire.

Class C: (Extinguisher has a "C" on a blue circle.)

Example: Electrical fires.

Location: Within 50' of potential fire.

Class D: (Extinguisher has a "D" on a yellow star.)

Example: Combustible metals such as potassium and magnesium.

Location: Within 75' of potential fire.

Not all fire extinguishers can put out all types of fire. In fact, using the wrong fire extinguisher on some fires can actually spread the fire. An example of this would be using a Type A extinguisher on an oil fire. An oil fire should be put out with a Type B extinguisher. Not only that, but using Type A extinguisher on an electrical fire (for example) could cause serious injury. An electrical fire should be put out with a fire extinguisher that has a "C" on a blue circle. Make sure the proper fire extinguisher is used for the type of fire you are dealing with.

Know routes of egress, whom to contact in the event of fire, where the fire extinguishers are located, and how to use them.

Finally, and most importantly, people are more important than property. If a fire cannot be easily controlled by fire extinguishers, get away! Warn others and get away! Call the Fire Department.

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HAZARD ASSESSMENT

Determining and evaluating job site hazards that exist, or are likely to exist, is "hazard assessment" and it is the initial step in the selection process designed to protect our employees from possible eye, hand, foot, limb, or head injury through the use of appropriate personal protective equipment (PPE).

Impact; penetration; compression; chemical; heat; harmful dust; light radiation -- what do these items have in common? They are basic hazard categories which must be identified and their dangers negated through engineering controls and/or PPE selection. If feasible, engineering controls are preferable to PPE because they are passive and do not take active involvement by the affected employee.

If engineering controls are ruled out, PPE selection is made by analyzing and evaluating the type of risk, the level of risk, the potential for injury and the possible seriousness of that injury and matching those factors with PPE which is compatible with the risks and work situation.

Once hazard assessment and PPE selection have been made, all affected employees are informed of the proper PPE to be used during specific jobs on the job site.

Employees will be given training which explains:

- 1) When PPE is necessary
- 2) What PPE is necessary
- 3) How to properly put on, take off, adjust, and wear PPE
- 4) The limitations of the PPE
- 5) The proper care, maintenance, useful life and disposal of the PPE.

Should new hazards be introduced to the job site such as new equipment or procedures, additional PPE and training may be necessary.

Because PPE is required by virtue of an identified hazard that exists due to the physical layout of the job site, the specific work that must be accomplished on the job site, or the required method of accomplishing that job, the requirement for PPE will apply to all persons exposed to that hazard whether they be management, visitors, or employees.

The requirement for a PPE Program which would include hazard assessment and PPE selection; documented training; and the written certification of hazard assessment applies specifically to General Industry. However, there is nothing to preclude an employer whose operations are governed by the Construction standards from taking advantage of the many benefits of having a PPE Program which consolidates the various individual PPE requirements required of the Construction Industry and places them into one workable, comprehensive program.

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HOUSEKEEPING

What in the world does good housekeeping have to do with working on a job site? Weren't you employed to accomplish certain tasks during your work shift and isn't that all that matters?

Housekeeping is not an additional duty -- it is part of your job. A clean and organized job site creates a positive image of our company to our clients. In addition to providing a more productive setting for work, housekeeping and general cleanliness have a direct effect on safety and health and therefore they are mandatory. Below listed are general housekeeping guidelines some of which, as a matter of interest, are actually required by OSHA standards:

- a. All floor surfaces shall be kept clean and dry.
- b. Tools shall be properly cleaned and put away after use.
- c. Work areas shall be kept clean and orderly.
- d. All stored materials will be neatly stacked.
- f. As far as practical, all work areas shall be kept neat and orderly.
- g. All containers, when not in use, will be sealed.
- h. All containers shall be properly labeled.
- i. No objects will be left unattended on stairways.
- j. Entrances and exits will be properly marked and shall not be blocked.
- k. Fire extinguishers will be readily accessible.

Housekeeping and general cleanliness are an indication of pride in yourself and your work. The results of good housekeeping and general cleanliness spill over into all areas of safety such as the reduction of fire hazards and the reduction of the likelihood of slips, trips, and falls (nationally, a major safety problem).

Everybody gains -- it is easier to find items and the possibility of accident is reduced while the work production is increased.

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INCLEMENT WEATHER

One would have to have been living in a cave for the past year to not know the possible devastation of inclement weather. Year and year, hurricanes, tornadoes, and unending rain have struck parts of the United States causing death, destruction and misery.

Fortunately, for most areas of the country, with the exception of brief periods of high winds or an occasional thunderstorm, our weather is rather benign. However, what would you do if a blizzard or ice storm developed? How would you protect yourself in the event of a tornado? What about a driving rain storm? What precautions should you take in an electrical storm?

Use common sense during inclement weather. Stay indoors, if possible, stay off ladders and scaffolds. Stay away from wires and trees. Stay tuned to the radio for warnings and alerts, maintain a functioning flashlight with extra batteries, and, most of all, do not go out in inclement weather just to experience it -- that may be the worst decision of your life.

Just as a point of information, tornadoes contain the most violent winds on earth. They can exceed 200 MPH. Winds of this speed can drive a piece of straw into a tree, lift houses off their foundations, pick up automobiles, uproot trees, and tips over trucks. They certainly can lift a person up and toss him/her like a piece of paper. A tornado is very localized and can be several hundreds yards in diameter. Seek shelter in a storm cellar, basement, under a table on the side of the building from which the storm is approaching (tornadoes generally travel toward the Northeast), away from windows. If caught outside, lay flat in a ditch. This will help prevent you from being hit by flying debris.

An ice storm occurs when the temperature is just below freezing and falling rain freezes as it hits the below freezing temperatures of the ground, trees, roads, wires, and structures. A buildup of ice occurs. The dangers are not always obvious. First, because it is not particularly cold, there may be a tendency to ignore or not even notice the problem of slippery walking/working surfaces. Your boots offer absolutely no traction on smooth ice. Secondly, there is the problem of weight. The buildup of ice on ladders, scaffolds, roofs, wires and trees can cause breakage and the resultant damage and danger as they collapse.

A blizzard involves 35 MPH winds, heavy snow, temperatures to 10°F, and visibility of less than 500'. In a severe blizzard, temperatures are less than 10°F, winds are more than 45 MPH and visibility is zero. Dangers involve being stranded, lost, cold, loss of power, and so on.

Heavy rains and lightning each have their own hazards. Lightning tends to go toward the highest point so it is important to stay away from trees and tall objects. Lightning can strike a tree, travel across the ground and strike a person. Being on a scaffold or ladder when lightning is near is just plain foolish.

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JEWELRY, LONG HAIR & LOOSE CLOTHING

Jewelry, particularly rings (hard and electrically conductive), can cause injury on the job site for two primary reasons: electrical or mechanical mishaps. Accidents involving jewelry are not commonplace occurrences and the results generally would not involve a fatality. However, burns, severe lacerations, and finger loss is quite possible.

Rings are often so hard that you could easily hang by a ring caught on something without damaging the ring. In this situation, assuming your finger is not pulled off, your body will automatically initiate an inflammatory response -- a painful swelling of your finger that will make the removal of the ring impossible without a jeweler's saw at the local hospital emergency room.

Should you inadvertently get a chemical on your hands, be sure to wash under the ring to prevent irritation and possible infection. Necklaces, if worn, on the job site should hang inside your shirt or blouse to prevent snagging and placing you in harm's way. Because it is a good conductor, metal jewelry can be particularly dangerous around electrical current.

Loose clothing and long hair can instantly suck part of your body into machinery with devastating results. Loose clothing can get caught on switches and levers and inadvertently start or stop a machine. Loose clothing can get caught on ladders or scaffolds, for example, causing a loss of balance and resultant fall. The problem with loose clothing catching on something isn't the force of the pull so much as the unexpected suddenness of the event -- you are caught off guard. Certainly you could easily yank your sleeve out of a machine in an effort to save your arm if you were prepared.

Long facial hair is expressly forbidden by OSHA standards when wearing a negative pressure respirator because it prevents a tight seal and thereby defeats the purpose of the respirator.

Long hair is more susceptible to fire from sparks and is a natural trap for contaminants (hazardous or not) in the air if it is not contained under a cap or hard hat. It is obviously more dangerous around open flame than shorter hair.

Sometimes it is the small details that actually prevent an accident. Anything you can do to lessen the possibility of having an accident is worth doing. Consider the risks involved with jewelry, long hair and loose clothing on the job site and take appropriate precautions.

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MULTI-CONTRACTOR WORK SITES

Multi-Contractor Work Sites present special safety concerns that must be addressed by both management and employees.

At the management level, the major question is: “Who has overall responsibility for safety compliance on the total job site?” This question is answered in 29 CFR 1926.16, Rules of Construction, which basically states that the prime contractor is responsible for all compliance at the site while the subcontractors are responsible for complying with standards that are applicable to his employees specific work situations as well as additional standards to which he agreed to comply with in agreement between himself and the prime contractor.

Additionally, each subcontractor is responsible for sharing hazard information applicable to his operations and learning about the hazards that are created by other subcontractors particularly if those hazards may affect his employees. A classic example of this is the requirement in the Hazard Communication standard which deals with sharing chemical hazard information with others.

At the employee level, multi-contractor work sites often require an additional level of safety awareness due to increased activity, worker interaction, and traffic flow. It is important to remember that the four leading hazards found at multi-contractor work sites are:

1. Falls.
2. Being struck by something.
3. Being caught in or caught between something.
4. Electrical mishaps.

Multi-contractor work sites may also require a higher level of security for equipment with emphasis on safety equipment (PPE for example) and possible damage to job performance equipment such as ladders and scaffolds.

One advantage of having scheduled Safety Meetings is to have the opportunity to address some of the safety issues which may be applicable to a specific multi-contractor work site. Certain safety hazards or concerns may arise that are unique and all employees should feel free to raise any safety question at any safety meeting regardless of the scheduled topic. If the question can not be answered immediately, it will be researched and the answer will be provided not only to the person who asked the question, but all persons who attended the meeting.

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PERSONAL PROTECTIVE EQUIPMENT (PPE)

You should not rely on personal protective equipment (PPE) alone to protect you from job site hazards. Exercising care and safe work practices while performing your job tasks is always your first line of defense from hazards.

The word “personal” in the phrase “personal protective equipment” correctly implies that the equipment is for a specific person. As such, sizing and fitting are important for a variety of reasons.

- a. **Function:** an improperly fitted piece of PPE may not do its job. For example, eye protection against dust must have an excellent face seal.
- b. **Comfort:** the likelihood of continued use is increased if the PPE selected is comfortably fitted. Example: gloves that fit poorly and, over time, make your hands hot and clammy are likely to be removed exposing you to the hazard for which the gloves were required in the first place.
- c. **Safety:** ill-fitting PPE may actually cause an accident. Example: loose hard hat may slip and block one’s vision.

Most PPE come in a variety of sizes and within those size groups adjustments may be made to affect a perfect fit. It is important to understand the procedures for donning, adjusting, using, and removing PPE. If you are required to use any type of PPE, you will be taught, before initial issue, the specific procedures for properly donning, adjusting, using, and removing the specific PPE. When available, the manufacturer’s instructions will be issued with the PPE.

In addition to sizing and fitting, you must understand:

- a. When to use your equipment.
- b. How to inspect it.
- c. How to clean it.
- d. The PPE limitations.
- e. How, if necessary, to dispose of it.

You will be informed of the PPE requirements on the job site. The actual PPE required is determined after data from a complete hazard assessment of the work area and work methods are analyzed.

It is absolutely vital that PPE identified as necessary is used because it may well prevent injury to your various body parts such as eyes, head, hands, feet, or limbs.

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SAFETY PROGRAMS

In theory and actual practice, the manner in which safety is handled on our job sites should be consistent from one day to the next. Most important in any safety program is its effectiveness. Are physical hazards eliminated to the greatest extent possible? Are procedural hazards eliminated by proper work methods? Is there an appreciation of the importance of safety by all personnel, including management and workers? Are personnel trained to recognize unsafe situations, and either properly deal with them, or ask for guidance from a supervisor?

A safety program is more than just a list of rules. A safety program requires active employee involvement and management commitment.

Safety programs are not static. They change as new technologies are brought on line; as new hazards are introduced or discovered; as new directions are taken; as new procedures are developed; and as individual job assignments change and grow. Worksite analysis and hazard assessment point the way to what types of training are needed, what types of personal protective equipment are required, and what types of engineering controls can be implemented to limit occupational hazards.

The primary purpose of a safety program is to reduce and/or eliminate health risk and injuries.

In our organization, as in all organizations, our people are our most valuable asset. Your skills are needed and we certainly do not want you to suffer pain from injury or loss of income from disability. However, as a business, we can not be completely altruistic. A good safety program saves money, increases productivity, and improves quality of work.

The benefit to the individual who follows good safety practices is immediate -- no injuries. Unfortunately, there is no real way to tell what specific accident did **not** happen. However, accident rates do go down. The advantage to our organization is costs go down and profits go up. Increased profits benefit all of us in many ways, not the least of which is job security.

No reasonable person would expect anyone to know every safety rule or practice for every situation. However, it is reasonable, and expected, that you know the proper safety procedures for your specific job and that, if, thrust into a new situation, you know the need to learn the appropriate safety procedures before proceeding. If you don't know how to accomplish a task safely -- ask! It's that simple.

There is a safe way to accomplish every task. Do it the safe way!

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SLIPS, TRIPS, AND FALLS

This Safety Meeting deals not with falling from height which is covered in the Fall Protection Safety Meeting. Here we are talking about plain, ordinary, run of the mill, it happens all the time, it's a fact of life, no big deal slips, trips, and falls. Not!

All slips, trips, and falls are potentially very serious and **all** slips, trips and falls are preventable through adherence to company safety policies, common sense, and awareness of potential dangers on the job site. The most common job site accident is actually the easiest to prevent.

On the job site:

Walk, don't run.

Maintain a clear line of vision particularly when carrying a large object.

Use hand rails.

Keep your work area clean of debris.

Wear the proper work shoes/boots and make sure they are laced or buckled.

Pay attention to what you are doing and be aware of what is going on around you.

Clean up spills -- liquids are slippery.

Firmly set your ladder and ensure the rungs are clean.

Never engage in horseplay.

Ensure you have adequate lighting.

The list can go on and on, but in the final analysis, it is up to you to prevent slips, trips, and falls.

If you reflect on the last time you tripped, slipped, or fell, you would probably conclude that it was preventable.

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STAIRWAYS

The requirement for stairways is more common at job sites than you would imagine and the lack of stairways is an easy violation to spot. Stairways are often needed to gain entrance into job site office trailers as well as job site storage trailers. Further, on the job site, itself, stairways are often needed as part of the overall fall protection safety.

If the installation of temporary stairways is required on a job site, training will be provided to our employees concerning the proper construction, use, placement, of stairways. Employees will also be instructed on the requirements for handrails, mid-rails, and platforms. Properly constructed stairways are part of our effort to eliminate unnecessary falls.

A stairway must be provided at all personnel points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, sloped embankment, ladder, or personnel hoist is provided. The key height is 19 inches.

Stairways must be of sturdy construction and the riser height and tread depth must be uniform within each flight of stairs. Temporary stairways must have a landing of at least 30 inches in the direction of travel and extend at least 22 inches in width for every 12 feet of vertical rise. Where doors or gates open directly on a stairway, a platform must be provided and the swing of the door or gate must not reduce the effective width of the platform to less than 20 inches. Stairways and platforms must be level and should have a non-slippery surface.

There must be no hazardous projections such as nails or splinters which could snag a person's hands or clothing.

The most common violation dealing with stairways has to do with the lack of handrails. Handrails must be between 30 and 37 inches from the upper surface of the handrail and the surface of the tread. Handrails must have at least a three (3) inch clearance and be capable of supporting without failure a downward and outward force of 200 pounds. Stairrails shall at least 36 inches from the upper surface of the stairrail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread. Stairways having four or more risers or rising more than 30 inches must have at least one handrail. If there is a fall hazard of 6 feet or more along an exposed side of the stairway, then a guardrail system must be provided. This could include a handrail as the top of the guardrail system with midrails added.

The top and bottom of stairways, as well as platforms, must be kept clear of unattended objects.

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TRENCHES AND SHORING

The general thrust of this safety meeting is for all workers involved in trenching operations to realize that there are specific rules and regulations designed, developed, and implemented for their safety. As always, safety is a prime concern.

A trench, by OSHA definition, is: "a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 m). If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6 m) or less (measured at the bottom of the excavation), the excavation is also considered to be a trench."

Shoring, by OSHA definition, is: "a structure such as a metal hydraulic, mechanical or timber shoring system that support the sides of an excavation and which is designed to prevent cave-ins."

Prior to the digging of a trench, utility companies must be contacted to identify the location of sewer, telephone, electric, water lines, or any other underground installation that may be reasonably expected to be encountered.

For the safety of workers, trenches over four (4) feet deep will have a means of egress such as a stair, ramp or ladder. Measures will be taken to protect workers from falling loads, vehicular traffic, and dangerous atmospheres. In fact, if the atmosphere in a trench is dangerous or likely to be dangerous, testing will be done as often as needed and emergency rescue equipment will be available such as breathing apparatus, safety harness and line, or a basket stretcher.

Shoring is not required for trenches less than five (5) feet deep if an examination by a competent person determines the soil has no potential for a cave-in. In this situation, vertical sides are allowed.

Once a trench is over 20 feet deep, protective systems, which may include shoring, must be designed by a registered professional engineer.

The whole idea behind shoring is to protect workers from cave-ins. There are other methods of protection from cave-ins such as sloping or benching the adjacent ground according to specific criteria dependent on the soil conditions, weather, and adjacent structures. The total number of cave-in accidents is relatively small, however, when they do occur, they are generally very serious and are much more likely to be fatal than other types of accidents in the construction industry. The fatality rate for trenching work was estimated by OSHA to be 112 percent greater than the rate for construction in general.

HAZARDOUS

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ASBESTOS

The purpose of this Safety Meeting is to provide awareness about asbestos. Surprisingly, on many job sites you are around asbestos and don't even know it. Asbestos can be found in older tile flooring, pipe and mechanical insulation, plaster, fireproofing, and roofing materials. Undisturbed, it is perfectly safe.

Asbestos is not a specific mineral, but rather a fibrous form of various minerals. It is a remarkable product because it is resistant to corrosive chemicals, it is a nonconductor of electricity, it has a high tensile strength (equal to that of steel wire), and is resistant to heat (it will not burn, but will disintegrate at extremely high temperatures). Some forms of asbestos, such as chrysotile, can be spun into thread. In fact, one pound of chrysotile can produce 30,000 feet of thread -- it is that fine. Other types of asbestos have fibers which can not be spun, but are excellent for their frictional properties (brakes) and their insulation and sound deadening properties. The actual minerals found in asbestos include iron, magnesium, silica, and water. A truly remarkable product which has been serving mankind since the ancient Greeks and Romans.

Unfortunately, asbestos has a down side that has been discovered and statistically documented in recent years -- it is hazardous to your health.

Workers who deal with asbestos on a regular basis are familiar with the OSHA standards which deal with asbestos. They are familiar with the exposure limits, the types of respiratory protection, the disposable clothing, medical surveillance programs, the containment procedures, the training programs, the certifications, the air monitoring, and so on. Workers who do not work with asbestos probably will fall into one of two groups: 1) those who read the papers and accept the scare headlines as total fact and have an unreasonable fear of asbestos, and 2) those who have no knowledge of asbestos and its dangers and could care less. The truth is, asbestos and the associated health hazards are something to be aware of and respect, they are not something to panic about.

Undisturbed, an asbestos product is perfectly safe. Asbestos found in floor tiles and mastic will not harm anyone. The problem with asbestos is the microscopic fibers which, when released, enter the deepest portion of the lung (past your natural defenses such as hairs, mucus, cilia, and macrophages). Scar tissues can develop and the lung stiffens thus reducing gas exchange. This is called asbestosis. Another disease associated with asbestos is lung cancer. High exposure levels of asbestos increases one's chance of lung cancer by a factor of five. Mesothelioma, a disease caused primarily by exposure to amosite and crocidolite, can be fatal.

The health hazards associated with asbestos are chronic and, as such, present themselves after a long period of time.

If you believe the materials you will be working with contain asbestos, do not disturb the material and contact your supervisor.

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CHEMICAL SPILLS (GENERAL)

There are over 1,000,000 organic compounds alone. The total number of known and unknown chemical compounds can not even be imagined. Therefore, for obvious reasons, specific cleanup procedures for each chemical or chemical compound would be impossible to list in a short Safety Meeting. On the job site you must know, from individual training, labels, and Material Safety Data Sheets, the proper cleanup procedures for the chemicals (chemical products) with which you are working.

There are certain general themes which must be considered when a spill occurs. They include, but are not limited to:

- a. Should there be an immediate warning or evacuation of other employees?
- b. What are the acute and/or chronic health hazards?
- c. Will there be an undesirable reaction with other chemicals?
- d. Will protective clothing and safety equipment be required (including respirators)?
- e. Will explosive or poisonous vapors be produced? Is it possible for them to spread to an ignition source?
- f. How will contaminated clothing be properly disposed of?
- g. How will the cleaned-up chemical be properly disposed of?

The answers to the above questions must be known before there is a spill or accident and they should be second nature.

Most chemicals used on the job site have some undesirable health effects if inappropriate exposure occurs. Chemical products that get on your skin or in your eyes may cause damage if not properly dealt with. Both the label and the Material Safety Data Sheet will provide information for medical treatment and clean-up.

Even if a chemical were completely inert, as part of good housekeeping on the job site and to prevent additional accidents (such as slipping and falling), chemical spills should be cleaned up immediately.

When working with benign chemicals such as latex paint, for example, the immediacy is not as apparent (though messy and slippery conditions may result) as when working with stronger chemicals which are acids or strong bases. An awareness of the characteristics of vapors must be known -- flammable, reactive, or heavier than air. There are exposure limits for certain vapors which must not be exceeded.

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CONFINED SPACE

You see a fellow worker unconscious in a confined space such as a tank, silo, pit, etc.. What do you do? Your first instinct may be to rush in and either give first aid or, at least, pull your co-worker out of danger. Wrong! In such a situation do not enter the confined space! Get help immediately. An emergency rescue is required. Rescue personnel must have, at the minimum, certification in first aid and CPR. They would bring to the scene the proper safety equipment to protect themselves and help insure a rescue.

DANGER

PERMIT REQUIRED-CONFINED SPACE---AUTHORIZED ENTRANTS ONLY.

If you see the above warning sign on a job site, do not enter the designated confined space without proper training and authorization. In fact, if you see the above warning during permit entry work operations, you would not be able to enter the designated space because it would be sealed off, barricaded, or have a person at the entrance guarding against unauthorized entry. Why? Because permit required confined-space is extremely dangerous and requires special training and education before a worker is allowed to enter and requires special safety measures to protect the worker.

Exactly what is a confined space? A confined space, as its name implies, is a space which has limited access and is not designed for continuous occupancy. There are many confined spaces which do require special measures for working. However, a confined space which has one (1) or more of the below listed characteristics is a **permit-required** confined space:

- a. an actual or potential hazardous atmosphere.
- b. a material that has the potential of engulfing the entrant.
- c. an internal configuration that might cause an entrant to be trapped or asphyxiated by its shape.
- d. contains any serious safety or health hazard.

Be aware of the potential danger of any confined space. If you were to enter a confined space with an atmospheric oxygen concentration of 15%, you would not be able to come out. You might get in, but you would have a strong chance of dying. It's that simple! It's that tragic! 19.5% to 23.5% oxygen is the acceptable limit. Confined spaces are dangerous. One last note to think about -- some materials such as fluoride gas or cadmium vapor may produce transient effects which may pass without medical attention. Twelve to 72 hours later, you may collapse and die.

Clearheart Construction Co., Inc.

SAFETY MEETING

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CONTROL OF HAZARDOUS ENERGY (Lockout/Tagout)

You would not work on a toaster, for example, without unplugging it from the wall. The danger of electrical shock is obvious. People who would practice essentially the "lockout/tagout" procedures at home often take chances at work doing basically the same thing.

It is not likely that you will, on the job site, be servicing fixed mechanical or electrical equipment (the major condition for the use of lockout/tagout procedures). However, it is likely that you will see lockout/tagout devices (locks and tags). You should have a general knowledge and awareness of what lockout/tagout is all about. Whenever anyone works on a piece of powered machinery or equipment, either mechanical or electrical, for servicing or maintenance it must be disconnected from its power source. Furthermore, stored energy must be released and there must be a method to prevent other people from reconnecting the power source while the item is being worked on.

Generally, the power source is physically "locked out". Under certain circumstances, the power may be tagged out. Both methods require standardized procedures and have specific requirements.

Unplugging a machine whose only source of energy is electricity and having control of the plug during maintenance does not require either lockout or tagout.

What is important for all employees to understand is that "lockout/tagout" procedures exist, the reasons for their existence, and, most importantly, to be aware that if there is a lockout or a tagout device in place on an energy-isolating device, it must be left alone and no attempt to operate the equipment should be made.

"Tagout" the least desirable method of energy isolation is not just the simple procedure of putting a tag on a fuse box. Tagout requires the attachment of a non reusable, attachable by hand, self locking, non releasable (at least 50 pounds of force to release) standardized tag. The color, shape or size as well as the print and format must be standardized.

OSHA estimates that adherence to the requirements of the Control of Hazardous Energy Lockout/Tagout will prevent about 122 fatalities a year.

In the construction industry, you should be aware of the lockout and tagout procedures in the facilities in which we work. Should a piece of machinery need to be locked out, it should be done by the company having responsibility for that machine using that company's procedures.

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FALL PROTECTION

Mention "Fall Protection" and one can easily conjure up images of workers bravely risking life and limb 20 feet, 30 feet or higher above solid ground -- their safety guaranteed only by a few buckles, a lanyard and body harness. Of course, the above does not reflect the realities of fall protection. A properly implemented fall protection program limits the risk of falling from a walking/working surface six (6) feet or higher to a lower level by providing appropriate training in recognizing fall hazards and the using fall protection systems and equipment.

Fall hazards may exist at any given job site. In fact, falls are the leading hazard on job sites. Because all job sites are not the same and working conditions vary, OSHA has provisions within their standards allowing contractors to create a Fall Protection Plan for a specific site. This plan would then become part of our Fall Protection Program. It is important to note that a Fall Protection Plan can only be used when conventional systems provided within the standard (guardrail systems; personal fall arrest systems; safety net systems; positioning device systems; warning line systems; controlled access zones; and safety monitoring systems) are not feasible.

Fall protection also concerns the falling of objects from any height. The mandatory wearing of hard hats, toeboards on scaffolds, and controlled access zones aid in the protection of workers where falling objects present a potential hazard.

It is interesting to note that fall protection standards do not apply directly to ladders and scaffolds. Scaffolds and ladders have their own safety requirements which, when followed, prevent falls.

You must be aware that on multi-employer work sites, fall hazards (primarily falling objects) may be created by other employers. Stay out of controlled access zones and wear a hard hat at all times. Understand that when working at a height of six (6) feet or over, a fall protection system must be used.

Safety equipment such as harnesses, ropes, and lanyards used as personal fall protection devices must be used for no other purpose such as lifting materials.

It should be noted that effective January 1, 1998, body belts are not acceptable as part of a personal fall arrest system. However, they are acceptable as part of a positioning device system.

Falls from a height of six feet or more can result in very serious injury. Be aware of fall hazards and never work without fall protection if a fall hazard exists.

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HAZARD COMMUNICATION

Hazard Communication is basically a worker's "right to know" program to ensure that all our employees who utilize chemicals on the job site are aware of their potential hazards. Furthermore, it is incumbent on us, as a company, to ensure that those with whom we work or with whom we come in contact be informed of chemical dangers associated with our work.

Awareness is the key to any Hazard Communication Plan. Each employee must be aware that most chemicals have a downside. While chemicals are crucial to accomplishing our jobs, there is a safety and health risk associated with improper use. There is always the possibility of spill or chemical escape and knowing the proper procedure for cleanup is vital. Some chemicals are susceptible to fire and/or explosion if not properly handled or stored. Many chemicals can cause acute or chronic health problems if inhaled, sprayed in the eyes, come in contact with skin, or ingested. Practically all chemicals have a danger associated with them if improperly used.

What exactly is a hazardous chemical/chemical mixture? OSHA defines a hazardous chemical as "any chemical which is a physical hazard or a health hazard." Our Hazard Communication Plan explains in detail how to recognize and avoid chemical hazards.

All chemical products used on our job sites will have labels and Material Safety Data Sheets (MSDS) which provide a wealth of information concerning health hazards of the product. On an MSDS, you will also find procedures for handling emergencies such as spills, leaks, fire, etc.. Information on exact chemical makeup and First Aid treatment is given. Proper storage and disposal is covered. The reactivity, if any, is noted. The list goes on and on, but the point is, a proper Hazard Communication Plan provides general and very specific information concerning chemicals and the hazards associated with them.

Furthermore, a proper Hazard Communication Plan provides some method of documenting training. For example, after initial training, employees must be given training when a new chemical hazard is introduced into the work place. This does not mean every time a chemical is introduced. There is a difference between a chemical hazard and a chemical.

A Hazard Communication Plan contains a list of all the chemicals used by the company and a compilation of all the MSDSs.

Understand the hazards associated with the chemicals you are using.

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LEAD

The purpose of this Safety Meeting is merely to provide some interesting information about lead. Surprisingly, on many job sites you are around lead and don't even think about it. Lead can be found in older paint and piping systems. Undisturbed, it is perfectly safe.

Lead, like asbestos, has been used by mankind since the earliest times. The Romans used lead in drinking cups and in their water systems. Of the common metals, only gold is heavier, yet lead is soft and can be scratched by a fingernail.

In more recent times, lead has been used (as a metal, chemical, or alloy) in pipes for water, tank linings, cable coverings, roof sheeting, storage batteries, solder, insect poison, gasoline, glass, and paints. Lead-containing paints inhibit rusting and corrosion of iron and steel. Lead has served mankind well in all of its uses but with one major, very serious, downside -- it can kill!

Workers who deal with lead on a regular basis are familiar with the OSHA standard which deals with exposure to lead. They are aware of the exposure limits, the types of respiratory protection, the engineering controls, the need for sanitation and good hygiene practices, the blood tests, the medical surveillance programs, the containment procedures, the training programs, the certifications, the air monitoring, and so on. The actual knowledge of lead as it relates to health is expanding at such a rate, individual company lead programs must be updated every six (6) months.

The amount of lead that is dangerous to your health is a minute quantity. The action level (the exposure limit over which the OSHA standard kicks in, is only 30 micrograms per cubic meter averaged over an 8-hour work day. A microgram is one millionth of a gram. A cubic meter is 1.3079 cubic yards. The amount we are talking about is, approximately, .000000066138 pounds per 1.3079 cubic yard of air. That's not much!

Lead is a heavy, toxic metal which can be absorbed into your body by ingestion and by inhalation. It is a cumulative poison which can stay in your bones for decades. While your body excretes some of the lead that gets into it, some of it is stored in your various organs and tissues. Eventually, you absorb more than you excrete. Heavy metals (lead, arsenic, mercury, copper, and gold) are all toxic to living tissues. They tie up vital living tissue chemicals that must be free for normal cell function. When these substances (sulfhydryl or thiol groups, carboxyls, phosphoryls and others) are bound by the metals, certain cellular enzyme systems are inactivated, cellular functions fail, and, the cells die.

Large doses of lead can kill in a matter of days by causing acute brain damage which in turn causes seizures, coma, and death from cardio-respiratory arrest. Chronic problems can develop after a period of years.

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MATERIAL SAFETY DATA SHEETS (MSDS) & LABELS

Of all the safety materials on the job site, one of the most important is the Material Safety Data Sheet (MSDS). Chemical products that are used every day can be very dangerous should an accident occur such as a fire, spill, puncture, splash to the eye, etc.. An accurate, readily available MSDS could stop a minor problem from becoming a major catastrophe.

MSDS are maintained on the job site for all chemical products we use and are readily available for: all our employees; other contractors with whom we are working; Emergency First Aid Responders; and doctors and hospitals in the event of a serious problem.

If a chemical is found to not have an MSDS, it will not be used. The supervisor will be notified and appropriate steps will be taken to correct the situation.

The MSDS will include, among other things, such items as:

- a. a list a hazardous ingredients.
- b. physical data.
- c. first aid procedures.
- d. special precautions and/or personal protective equipment requirements.
- e. procedures to follow in case of spills.

All employees must know the location of our MSDS and become familiar with the potential hazards of the chemical products used on the job site. It is conceivable that knowing where to find an MSDS and the types of information found on an MSDS could actually save a life.

Labels, while not as detailed as MSDS, are your first line of information about a chemical product and its proper use, the hazardous ingredients, emergency first aid, temperature requirements for storage, and special precautions such as, "Use with adequate ventilation" or "Avoid breathing vapors".

All containers containing chemical products or mixtures used on the job site will be labeled using the manufacturer's labeling system with the allowable exception that a product may be transferred into an unmarked container for immediate use during the work shift by the person making the transfer. Example: transferring paint from a gallon pail into a paint tray. Labels will not be removed, marred or defaced.

The label will remain on a container even when it is empty because the disposal instructions are listed thereon.

You must know of the existence of labels and the types of information found thereon. Labels provide a wealth of information about the product you are using.

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STORAGE OF HAZARDOUS CHEMICALS

Improperly stored hazardous chemicals on the job site could have catastrophic results including fire and/or explosion. Common hazardous chemicals found on job sites include gasoline, kerosene, compressed oxygen and compressed acetylene. However, there are an infinite number of possible combinations of chemicals that need to be stored on the job site.

Smoking shall be prohibited at or in the vicinity of operations which constitute a fire hazard and a sign reading: "No Smoking or Open Flame" must be conspicuously posted.

At least one fire extinguisher having a rating of not less than 20-B units shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area.

At least one portable fire extinguisher, having a rating of not less than 20-B units shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.

Chemicals, as noted on labels and on Material Safety Data Sheets, often have specific storage requirements which may include such items as heat, cold, humidity, light, motion, and reactivity. The MSDS for gasoline, for example contains reactivity data which includes conditions to avoid such as high temperature and materials to avoid such as strong oxidizers.

The fuels and flammables must be segregated from oxidizers. On a job site, oxygen cylinders in storage must be separated from fuel gas cylinders by at least 20 feet.

Chemical containers which have been damaged present a special problem because contamination may result. The entry of a foreign substance into the original chemical can change the chemical properties and the results can be very dangerous.

Flammable or combustible toxics or oxidizing agents not compatible with water should be individually separated and certainly not under the fire protection of a sprinkling system.

Class I flammable liquids can never be stored in a basement area.

Of course, only approved containers and portable tanks are allowed for the storage and handling of flammable and combustible liquids.

Flammable or combustible liquids may never be stored in areas used for exits, stairways, or areas normally used for the safe passage of people.

Up to 25 gallons of a flammable and combustible liquid may be stored in a room outside of an approved storage cabinet.

If you don't know the storage requirements of a particular chemical, ask.

MEDICAL

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BLOODBORNE PATHOGENS

Bloodborne pathogens are not something you generally think about when on a job site. However, you should be aware of them because they exist in all environments. Designated First Aid Providers can protect themselves through certified CPR training and following the provisions of an Exposure Control Plan to prevent the introduction of bloodborne pathogens into their system by exposure to skin, eye, mucous membrane or contact caused by piercing mucous membranes or the skin barrier through bites, cuts, needle sticks, or abrasions with blood or other potentially infectious material. Actually, if our job sites are reasonably close to a medical facility, designated First Aid Providers are not required.

Exactly what are bloodborne pathogens? They are pathogenic microorganisms that are present in human blood and can cause disease in humans. These include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Other potentially infectious materials include: human body fluids; unfixed tissue or organ from a human (living or dead); and HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions. OSHA standard 29 CFR 1910.1030 deals specifically with the reduction of these hazards through awareness, training, engineering controls, work practice controls, and personal protective equipment requirements. Further, all employees exposed by occupation to bloodborne pathogens must be given the opportunity to be vaccinated with the hepatitis B vaccine at no charge to themselves. Should one decide not to have this vaccination, the declination must be in writing and this declination may be revoked by the employee at any time (provided he/she remains at exposure risk).

If exposure occurs, specific procedures are detailed concerning documentation of the incident, the providing of HBV and HIV testing, counseling and safe and effective post-exposure prophylaxis.

All employees that deal with bloodborne pathogens in their assigned job must understand and use Universal Precautions which basically means that all human blood and certain body fluids are treated as if they are known to be infectious for bloodborne pathogens.

Certain procedures apply in all situations. These include good housekeeping, wearing of personal protective equipment, proper disposal of waste, the immediate cleaning up of spills, personal hygiene, and the prohibition of eating, drinking, smoking, applying cosmetics and handling contact lenses in work areas where there is a likelihood of occupational exposure.

One should be aware of the limitations of personal protective equipment. For example, rubber gloves will not protect against the dangers of a needle prick.

Do not expose yourself to bloodborne pathogens -- let the emergency medical responders, who have had appropriate training, deal with them.

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DETERMINATION OF HEALTH HAZARDS

The health hazards associated with a chemical used on the job site can be found on the chemical product's Material Safety Data Sheet (MSDS). An alphabetical listing of our MSDSs as well as the sheets themselves are part of our Hazard Communication Plan and are readily available on the job site.

You intuitively know that the vapor from a chemical you are using could be dangerous to your health. Fortunately, intuition is not a determining factor in the area of health hazards. Hazard determination must be scientifically justified. What you, as an individual, may consider dangerous may be nothing more than a pleasant odor to another individual. In fact, some chemicals, which are health hazards, have a very pleasant citric odor intentionally placed by the manufacturer. There must be some consistency, some reliable method for the determination of health hazards.

Physical hazards are relatively easier to determine. Chemicals have certain properties which may be measured in the laboratory to determine whether the chemical is a combustible liquid, compressed gas, explosive, flammable, organic peroxide, oxidizer, pyrophoric, and/or unstable or water-reactive.

Health hazards, on the other hand, are often much more difficult to establish. Some health hazards take years to present themselves while others are immediate and fatal. Hazard determination is generally conducted by the manufacturers and importers. Employers must rely on the professional judgment of the evaluator particularly in the area of chronic (long term) hazards.

Carcinogenicity (cancer causing) of a chemical is conclusive if it is so determined by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA.

The results of laboratory tests using animals may be used to predict the possible results in humans. The results of any scientifically acceptable study which indicate a chemical health hazard shall be used for hazard determination. It is also possible that new and more complete studies may refute earlier findings and reverse a health hazard determination.

For other determinations, actual human experience should be considered. For example, if thousands of workers have been exposed to a specific chemical for 50 years without using any personal protection with no ill effects, it would be safe to assume the chemical poses no chemical hazard.

Knowing what the health hazards of a particular chemical product are is vital to determining what personal protective equipment should be utilized when using that product on the job site.

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FIRST AID

First aid kits are readily accessible on all job sites. Further, in the absence of plentiful amounts of clean water, eye flush, if needed, will be available. First aid kits are worthless if not immediately available and therefore they will not be locked up.

Should a medical emergency occur, other than minor scrapes and bruises, and it is serious enough to call for professional medical assistance, you should call the Emergency Response Number posted on the job site bulletin board. Before the first aid providers arrive, to the extent possible, clear the way so they can reach the injured employee in the most direct way possible.

Unless trained and licensed in CPR/first aid and a designated first aid provider as an additional job as part of the company bloodborne pathogen program, employees will not expose themselves to blood or other bodily fluids of other employees at any time.

Per OSHA, first aid is limited to:

- a. Using a non-prescription medication, such as aspirin, at non-prescription strength.
- b. Cleaning, flushing or soaking wounds on the surface of the skin;
- c. Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™.
- d. Using hot or cold therapy.
- e. Using any **non-rigid** means of support, such as elastic bandages, wraps, non-rigid back belts, etc..
- f. Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.).
- g. Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister.
- h. Using eye patches.
- i. Removing foreign bodies from the eye using only irrigation or a cotton swab.
- j. Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means.
- k. Using finger guards.
- l. Using massages.
- m. Drinking fluids for relief of heat stress.

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FIRST AID KITS

The three most important things dealing with first aid kits are:

1. They must be readily accessible.
2. They must be appropriate for the job site work involved.
3. Personnel must know how to use the contents of the first aid kits.

Pretty simple concepts, but do you know where the first aid kits are located? Do you know the contents? Do you know how to use the items in the first aid kit? Do you know your limitations?

Have you ever been on a job, needed some first aid supplied, opened the First Aid Kit and found the item you need is missing? Not only is this annoying, it could cause a minor injury to develop into something more serious. First aid kits must be replenished as items are used. Those individual items that must be sterile must be wrapped and sealed and used only once. Other items such as tape or scissors can be reused and should be kept clean.

The number of first aid kits to be found on the job site should be:

Number of Persons Assigned to Job Site Minimum First Aid Supplies

1 - 5	10 Package Kit
6 - 15	16 Package Kit
16 - 30	24 Package Kit

Depending on the job site, first aid supplies will generally include: adhesive bandages, bandage compresses, scissors and tweezers, triangular bandages, antiseptic soap or pads, eye dressing, and other items that a consulting physician may recommend. The main purpose of a bandage, the most commonly used item in a first aid kit, is not really to stop the bleeding, but to keep the wound clean.

The supplies consumed in first aid kits can actually be used as a safety tool. For example, if a kit constantly needs replacement of bandages which have been used for minor cuts, there is an obvious problem that the cuts are happening in the first place. Actual trends can be established and corrective procedures initiated such as protective gloves or handling practices.

When dealing with any injury, stay calm and never do anything unless you know what you are doing.

Improper medical treatment can be more dangerous than no treatment at all.

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FROSTBITE

You have probably experienced some degree of frostbite at one time or another -- possibly on the job site. It generally starts with a light reddening of the ears, nose, chin, fingers, or toes. The sensation of cold is present. The feeling of cold changes to tingling and then to pain as the frostbite becomes more intense. Finally, the redness has turned to pale, grayish blue and the pain has disappeared only to be replaced by numbness. You now have a full blown case of frostbite.

What actually occurs during frostbite and how dangerous is it? Most of your body is made up of water and water is abundantly present in all your cells. When your exposed extremities are subjected to extreme cold, the temperature (heat) flows from your cells to the outside cold. The result is ice! That's right. Ice actually forms in your cells and tissue. The ice crystals within the cells cause cell damage. There is a loss of oxygen to the tissue and, in a worst case, gangrene can set in.

There are three (3) levels of frostbite: incipient, superficial, and deep. You might not even know you have had incipient frostbite until you start warming up and notice a slight tingling. The total cure involves gentle warming. If you don't notice incipient frostbite and remain in the extreme cold, superficial frostbite may develop. In this case, the freezing occurs in the tissue below the skin. Blisters may form and pain may last for several weeks. Deep frostbite is dangerous and the freezing occurs in the subcutaneous tissue. Attempts will be made at the hospital to decrease the oxygen needs of the tissue, improve blood supply, and prevent infection. Some tissue may have to be removed.

Because frostbite involves the loss of oxygen to the tissue, persons with poor circulation are at greater risk. Having very tight shoes can also increase the risk for toes getting frostbite.

Contrary to what you may have heard, never rub snow in a frostbitten area of your body. This will only increase trauma to the injured tissue. Gently soaking in warm water (110°F) is your best bet. Certainly, if it is deep or bothersome superficial frostbite, seek professional medical help.

Several light layers of clothing will offer greater warmth than one heavy layer. Because moisture is a good conductor of heat (the temperature will leave your body and go to the outside air) and dry air is not a good conductor, dry clothing is a must in cold weather.

Frostbite may be a warning that could save your life. Get out of the cold! As your body cools and shivering stops, heat loss will exceed heat production and you will get listless, apathetic, and sleepy. Pulse and respiration will slow. Freezing, unconsciousness, and death may occur.

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HEAT EXHAUSTION/HEAT STROKE

To lessen the possibility of heat exhaustion or heat stroke, keep your body well hydrated with water; wear light clothing that allows for perspiration; and reduce exertion on extremely hot, moist days, and allow for air circulation.

If the below symptoms present themselves, call for an emergency responder and follow their instructions.

HEAT EXHAUSTION: Fatigue; weakness; profuse sweating; pale, clammy skin; headache; cramps; vomiting; fainting

Remove from hot area.

Have victim lay down and raise feet.

Apply cool wet cloths.

Loosen or remove clothing.

Allow small sips of water if victim is not vomiting.

HEAT STROKE: Dizziness; nausea; severe headache; hot, dry skin; confusion; delirium, coma

Remove victim from hot area.

Remove clothing.

Have victim lay down.

Cool the body. Cold moist applications applied to the body and air circulation to increase evaporation are recommended.

Do not give stimulants.

If working in an environment likely to product heat exhaustion or heat stroke and the above symptoms are noticed, call for an emergency responder. Unless trained and licensed in CPR/first aid and a designated first aid provider as an additional job as part of the company bloodborne pathogen program, employees will **not:**

- a. expose themselves to blood or other bodily fluids of other employees at any time.
- b. provide any level of care beyond first aid.
- c. fail to call an emergency responder immediately.

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SMOKING

Even the most adamant of smokers would be hard pressed to put forth a valid argument for smoking. Few smokers would encourage their children to smoke. There is no question that smoking presents a serious health risk.

OSHA has rules about smoking on job sites and they generally relate to the immediate (acute) health risk of fire or explosion. Other times they relate to certain procedures such as asbestos or lead abatement (where smoking is prohibited).

The smoke from cigarettes has three (3) major hazardous ingredients: nicotine, tar, and carbon monoxide. In addition to these elements, there are thousands of other chemicals which are delivered in trace amounts. Tar, produced by the burning of organic matter in combination with air and water, can produce cancer and emphysema by filling the alveoli in the lungs. Carbon monoxide, bound with one's hemoglobin, can starve your body for oxygen. Nicotine reaches the brain within ten seconds of inhalation. Nicotine, which provides a temporary lift, is not as medically dangerous as tar and carbon monoxide, but it is habit forming.

Diseases and medical problems caused or aggravated by smoking include: cancer of the lungs, lips, tongue, palate, larynx, esophagus, kidney and bladder; arteriosclerosis (constricting of the arteries); heart problems; bronchitis; and asthma. For women, smoking affects the unborn child and there is a possibility of increased chance of cancer of the womb.

Due to our current social environment of activism and legalism, smoking restrictions are more and more commonplace. From government buildings, public places, work places, and on and on, smoking is not being tolerated. Most buildings in which we work will have smoking prohibitions. If you must smoke, only smoke in authorized smoking areas. Of course, there will be no smoking in the vicinity of flammable liquids or gases. Respect the smoking policy at each job site. The overall smoking policy may have been set by the owner, other contractors, or ourselves.

All employees are encouraged to not start smoking, reduce their smoking habits, and, preferably, quit smoking altogether. This is much harder than it sounds. It has been said that nicotine is one of the most addictive drugs known to man and it is no easy task to quit. Be encouraged! The more times you try to quit, the greater your chances of success.

Use caution when smoking on the job sites.

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SUBSTANCE ABUSE

For all practical purposes, when you are talking about substance abuse, you are actually referring to drug abuse. Drug abuse is not limited to marijuana, heroine, LSD, and other common street drugs. It includes laxatives, aspirin, sleeping pills, alcohol, cigarettes, etc.. Any drug that is not used in the prescribed manner is being abused. Substance abuse would even include non-drugs such as glue which could totally and permanently fry your brain.

Addiction, habituation, dependence, both psychological and physical, and abuse are adjectives which are applicable to personal mismanagement of drugs.

Those who smoke cigarettes, which are legal, are aware of the dangerous side effects of smoking and have made a conscientious choice to continue. The pleasure they derive from smoking, in their judgment, outweighs the social stigma, cost, and health risks. This is a personal decision. Before all you non-smokers start snickering, remember that caffeine, which is found in coffee, tea, and soda pop, is also a habit forming drug. Though more sociably acceptable, it is a drug none the less. Having a mild psychic dependency would characterize the users of these drugs. The same is true for moderate use of alcoholic beverages.

It is not the purpose of this Safety Meeting to be judgmental. Substance abuse is a serious problem for those who are involved with it. When a desire for a drug becomes so powerful that it outweighs all normal drives and concerns, one could be considered addicted to that drug. This is dangerous to the person involved and to fellow workers. Because of the adverse health effects to the individual and devotion of time and energy spent seeking and staying under the influence of the drug, it leaves little time or energy to be a productive member on the job.

Generally, one would need professional support to "kick" a substance addiction. Fortunately, there are many medical and social groups that can help. The first step on the road to recovery is an admission that help is needed and go from there. For the safety of yourself and others, substance abuse absolutely cannot be tolerated on the job site. The dangers are too great for not only the abuser but also those with whom he/she works.

It is much easier to not start taking illegal substances than it is to stop taking them. Of course, this holds true for legal, but possibly addictive and dangerous, substances such as tobacco and alcohol.

Substance abuse will not be tolerated!

MOTOR VEHICLES

Clearheart Construction Co., Inc.

SAFETY MEETING

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AERIAL LIFTS

Aerial lifts include the following types of vehicle-mounted aerial devices to elevate personnel to job-sites above the ground:

- a. Extendible boom platforms.
- b. Aerial ladders.
- c. Articulating boom platforms.
- d. Vertical towers.
- e. A combination of any of the above.

Only authorized persons may operate an aerial lift.

Lift controls must be tested each day prior to use to determine they are in a safe working condition.

Belting off to any adjacent pole, structure, or other equipment while working from an aerial lift is **not** permitted.

When working from an aerial lift, one must stand firmly on the floor of the basket or cage and not sit or climb on the edge, use planks, ladders, or other devices for a work position.

Personnel working from an aerial lift must be attached by a lanyard and safety harness to the boom or basket.

Load limits set by the manufacturer must never be exceeded.

The brakes must be set and, when outriggers are used, they shall be positioned on pads or a solid surface.

Aerial lifts shall not be moved with personnel in the basket unless it is designed for this type of operation. Aerial lifts designed as personnel movers must have controls that are clearly marked as to their use. The lower controls must be able to override the upper controls.

Except in an emergency, the lower controls shall not be used unless permission has been granted by the persons in the lift.

Extreme care must be exercised to avoid contact with electrical energy.

If you are working near an aerial lift, be aware of the dangers of its operation, the operator's limited visibility, and the possibility of falling objects.

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DRIVER SAFETY

Not wearing safety belts, speeding, driving while under the influence of alcohol or drugs, tailgating, driving without a license, weaving, not using rear view mirrors and turn signals -- the list goes on and on. For each type of improper behavior, there are statistics proving how dangerous they are. Whether you are driving a 500 pound motorcycle or an 80,000 pound tractor-trailer combination, you are actually in control of a potentially lethal weapon if not properly controlled.

One might take a lesson from professional drivers. Do you get plenty of rest before driving? Do you inspect your vehicle before driving? Is your vehicle maintained on a regular basis? Do you replace tires before they blow out or have such minimal tread that they hydroplane (when hydroplaning, you have no control whatsoever)? Do you overload your vehicle? Do you know the load limits of your vehicle? Are your wheels aligned and your brakes in good shape? Is the exhaust system in good repair? Do you exercise care when fueling your vehicle? Do you check the oil and other fluids? Are the inside and outside of your windows clean? Are they free from cracks? Do your headlights, turn signals, brake lights, parking lights, flashers, and horn work? Do you have insurance? Do you carry a first aid kit? Do you have a flashlight?

On various job sites, motor vehicles may be found which, if not safely handled, present a safety hazard for the operator, persons around the vehicle, and property. There are all types of industrial motor vehicles and they come in all shapes and sizes powered by battery, propane, gasoline, or diesel. All vehicles are dangerous when care is not exercised in their use. Vehicular accidents on the job site can be serious because of the power and weight of the machine and load.

Persons who operate forklifts, tow motors, tractors, etc., know the basic safety rules for job site operation because they have been trained and they are authorized to operate the vehicle. They know, for example, to:

- a. ensure the vehicle is inspected before use, well maintained, and has appropriate safety equipment such as a fire extinguisher, horn, adequate lighting, rollover cage, backup alarm, mirrors and flashing light.
- b. sound an audible warning when going backwards and to use a ground guide when there is limited visibility or very tight spaces in which to maneuver.
- c. permit no riders and to keep their own arms and legs within the protection of the driver's compartment or cage.
- d. be aware that the surface on which they travel can safely carry the weight of the vehicle, driver, and load and to keep the load low and secure.

The person most likely to be injured in a job site vehicular accident is not the operator of the vehicle but the person struck by the vehicle or the load.

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SEAT BELTS

Here is a safety rule that is easy to remember. If a company vehicle has a safety belt, it must be used. It's that simple. Seat belts and safety go beyond the confines of the job site. Seat belts should be worn while driving any vehicle -- it's common sense.

Who has not seen an Indianapolis type racing car involved in a high speed accident? It is spectacular as the car literally disintegrates as it slides down the track! Pieces and parts are flying everywhere and, when it finally stops, the driver is unhurt. Why? Partly because much of the energy is dissipated through the disintegration of the vehicle and partly because the driver was safety harnessed in the vehicle.

On a smaller scale, the same thing happens in your automobile. During a crash, energy is dissipated through the crumbling of the sheet metal, the collapsing of the steering column, the deforming of the bumpers. The seat belt keeps you in the relative safety of the driver's compartment.

You are a safe driver. You don't speed and you don't drive far from home. You haven't had an accident. Why should you wear a seat belt? Three out of four traffic accidents happen within 25 miles of home and 80% of serious injuries or death occur at around-town speeds. According to the Ohio Department of Highway Safety, in a 35 MPH crash, your body is subjected to forces similar to those from jumping head-first off a three story building. Your chances of staying alive are 25 times greater if you are restrained in the passenger compartment of your vehicle as opposed to being thrown out. Furthermore, while you may be a safe driver, what about the "other guy"? Innocent victims are involved in serious motor vehicle accidents every minute of every day.

What about industrial vehicles such as tow motors, bulldozers, and crawlers? There is little speed involved so why are seat belts necessary? One reason, the least important, is that it is the law! Another more important reason is, should the vehicle tip over, you would be far better off protected by the vehicle's cage than falling out and having the vehicle crush you. Develop a positive occupational habit. Soon, without thinking, you will automatically buckle up for safety.

When you get into, or onto, any vehicle equipped with a seat belt, buckle up before even turning the ignition key. It is basic physics -- if the vehicle you are in is going 55 MPH and it suddenly stops, without a seat belt or restraining device, your body continues going 55 MPH and impales itself on, or goes through, the first object it comes in contact with.

Be safe! Buckle up!

POSTERS/FORMS

Clearheart Construction Co., Inc.

SAFETY MEETING

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OSHA FORMS 300, 301, 300A & 3165

As a matter of law, all employers with 11 or more employees **at any one time** in the previous year must maintain OSHA Form 300, Log of Work-Related Injuries and Illnesses, OSHA Form 301, Injury and Illness Incident Report, and OSHA Form 300A, Summary of Work-Related Injuries and Illnesses. Injuries and illnesses must be recorded if they result in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness, or if the injury or illness involves a significant injury diagnosed by a physician or licensed health care professional even if it does not meet the foregoing conditions.

During the period from 1 February through to April 30, the Summary of Work-Related Injuries and Illnesses must be posted for work-related injuries and illnesses which have occurred during the previous year.

OSHA Forms 300 and 301 are used to record and classify occupational injuries and illnesses. The information on the OSHA Form 300 related to employee health and must be used in a manner that protects the confidentiality of the employees to the extent possible. Recordable injuries and illnesses must be entered on OSHA Forms 300 and 301 within seven (7) days of receiving information that a recordable injury or illness has occurred.

Catastrophic Reporting Requirements:

Within eight (8) hours after the death of any employee from a work-related incident or the in-patient hospitalization of three (3) or more employees as a result of a work-related incident, either in person or by telephone, the OSHA Area Office nearest to the site of the incident will be notified. OSHA may be contracted for this purpose using a toll free telephone number:
1-800-321-6742.

It is a safe bet you have seen OSHA Form 3165, It's the law!, many times. This form is to be "posted in a conspicuous place where notices to employees are customarily posted." Copies of this form are available for download from the OSHA website: OSHA Form 3165

OSHA Form 3165 is an amazing document. It points out all the rights of employees without mentioning any of the employees' responsibilities while at the same time it highlights the employers responsibilities without mentioning any of the employer's rights.

For the record, we, to the best of our ability, furnish a place of employment free from recognized hazards and, to the best of our ability, comply with the occupational safety and health standards issued under the OSH Act.

Also for the record, we expect our employees to comply with the occupational safety and health standards issued under the OSH Act and work in a safe manner.

PPE

Clearheart Construction Co., Inc.

SAFETY MEETING

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EYE PROTECTION

Your precious eyes are a marvel of engineering. Most of us take them for granted as we do all our senses until an accident, injury, or disease forces us to realize the miracle we lost or almost lost. Can you imagine a system that can take (absorb) light and convert it to electrical signals (by way of the 120 million rods and 6 million cones on the retina) and transfer these signals through an optic nerve, which has about one million fibers, directly in to the brain.

Most of us see the world in living color and with depth perception. The body itself does much to protect the eyes. There is a bony eye socket in the skull which protects the eye from many mechanical injuries. There are orbital fluids and tissues which cushion direct blows. Eyelids close reflexly from visual or mechanical stimuli. Eyes reflexly rotate upward with lid closing to protect the cornea. Tears can flush away chemicals and foreign objects. We all come with these safeguards. Sometimes, they are not enough.

Eye protection is required by OSHA (and common sense) on the job site when there is a possibility of eye injury. Eye injury is not confined to flying objects. Eye injury can be caused by bright light, dust, chemicals, heat, and literally, anything that can reach the eye. Different dangers require different types of protection. Federal law requires that all prescription glasses be made with impact-resistant lenses. Hardened lenses, through a tempering process, are extremely hard and resistant to impact and breakage. Safety lenses are similar to hardened lenses but are 1 mm thicker. Safety lenses are used in goggles where there is a danger of flying glass or chips of metal.

First Aid procedures, per the American Trauma Society, for the three major types of eye injury are:

FOREIGN OBJECT IN THE EYE: Have the victim pull upper eyelid over lower eyelid. Run plain water over open eye. If object does not wash out, cover **both** eyes with a gauze dressing and seek medical help promptly. **DO NOT** rub the eye.

WOUND TO THE EYE: Apply loose sterile dressing over **both** eyes. Seek medical attention immediately. For bruising or "black eye", a cold compress or ice pack may relieve pain and reduce swelling. **DO NOT** try to remove any embedded object. **DO NOT** apply pressure to the eye.

CHEMICAL BURN: Flush immediately with water over open eye for at least 10 minutes (20 minutes if alkali). It may be necessary to hold patient's eyelid open. Cover **both** eyes with sterile dressing. Seek medical attention immediately. **DO NOT** put anything but water in the eye.

Remember, an inexpensive pair of safety glasses can save your priceless eyesight.

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FOOT PROTECTION

They are light weight, flimsy, and offer little traction. They are bowling shoes! What do bowling shoes have to do with a Safety Meeting on foot protection? They are an example of a shoe designed with two (2) specific purposes in mind -- sport performance and foot safety. All athletic shoes offer foot protection and each sport requires a specific shoe.

On the job site, one generally thinks of a safety shoe as a steel toed boot. While a steel toed boot does protect your toes from being crushed, they are only one of many types of safety footwear.

One would not wear golf shoes on a bowling alley or play basketball wearing ice skates. The same holds true in industry. Specific dangers require specific footwear.

On a job site, you may require traction, steel protection, chemical resistance, heat and/or fire resistance, dryness, non-sparking, cushioned, or ankle-protecting footwear. You may require any combination of the above and, for every danger in the workplace, there is an appropriate type of protective footwear which must be worn.

Your foot is a remarkable piece of engineering which is composed of 26 bones, muscles, fatty tissue, nerves, tendons, skin and joints.

Safe working practices are your first line of defense in foot protection. Following company safety procedures and common sense can eliminate many foot injuries. However, accidents can and do occur. Sometimes an accident is truly the result of another person's actions and accidents can occur as a result of mechanical or design failure.

The second line of defense is the foot itself which can absorb a tremendous amount of punishment without damage.

The third line of defense is the most easily achieved. Wear the proper protective footwear! It's that simple and it is required by OSHA.

One last item about foot protection which is seldom mentioned in a Safety Meeting, but is of importance -- cleanliness! Keep your feet clean and dry your feet thoroughly after bathing. Moist areas are conducive to bacterial growth.

It would be a shame to lose a foot or part of a foot because of an accident in the workplace -- wear proper foot protection!

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HAND PROTECTION

Hold your hand up and take a good look at it. Grasp and release and move your fingers around. Do you realize that your hand is composed of 20 muscles, three (3) major nerves, 27 bones (14 of which are in your fingers) plus skin, fatty tissue, tendons, and joints. Additionally, there are 15 muscles in your forearm which provide power to your hand. Your hand is your gateway to the world. It lets you do what you think. Its function is feeling and grasping.

How many times have we heard: "What separates man from the rest of the animal kingdom is a truly functional opposing thumb."? Try to pick up something while holding your thumb still. In fact, if the nerve to the small muscles of the thumb is severed, 80% of the total hand function is lost.

Another thing that separates man from the rest of the animal kingdom is his ability to design and use hand protection. There are numerous types of hand protection (gloves) available -- each with a specific purpose. The most common are general purpose cotton work gloves which provide protection from minor skin abrasions and cold. However, there are many other types of gloves. Hands need protection from chemicals, cuts, heat, cold, germs, radiation, impact, electricity, and other dangers in on the job site. Part of hazard assessment is determining what types of personal protective equipment (hand protection) is required on the job site. For each type of hazard applicable to the hand, there is an appropriate glove which will provide protection and, at the same time, allow you to accomplish your job with efficiency as well as safety.

Personal hygiene is a part of hand protection. Long fingernails can present a real, and possibly painful, problem on the job site. Allowing a hangnail to go unattended can lead to infection.

Fingers are susceptible to frostbite. Frostbite can cause cellular damage as the water in the cells freezes and the ice crystals damage the cell. Warm gloves can make your work more enjoyable and much more efficient during cold weather operations.

Safe work practices and following company safety procedures goes a long way toward hand protection.

Do not take chances with your hands. If you think you need some sort of hand protection, you probably do.

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HEAD PROTECTION

When one talks about head protection, one is really talking about brain protection. Your brain, either through divine providence, evolution, or quirk of nature, is you. The brain, that soft mass of gray and white convoluted matter, is what you are all about. Destroy your brain and you no longer exist.

Your brain is naturally protected by a cranium. Your skull actually has many bones which protect your brain and support your face. Obviously, there are other parts to your head which need protecting such as your eyes, ears, nose, tongue, skin, etc., but your brain is the most important.

If you saw a race car driver without a helmet, you would question his judgment. The same goes for a football player, a firefighter, etc.. Of course, they are required to wear head protection and are not allowed to compete or work without one. Not surprisingly, the same holds true for workers. Per OSHA, when there is a possibility of head injury from impact, flying or falling objects, or electrical shock and burns, head protection is required. The actual requirements for head protection (hard hats) vary depending on the danger.

Brain injury is the second most common cause of major neurological deficits and causes more death than injury to any other organ.

When the skull receives an impact, it actually can indent and deform. A fracture may occur and the fracture may be distant from the point of impact. A direct blow to the head can cause the brain to actually move within the skull. Surprisingly, there is often a reverse correlation between skull damage and brain damage.

Wearing a hard hat accomplishes two major objectives: it reduces the rate of energy transfer and spreads out the area of energy transfer. Just as your head should be checked out at a hospital after a head impact, so should your hard hat. A hard hat can absorb energy by deforming and the deformation may be unnoticeable.

It is interesting to note that the absence of external scalp injury does not preclude serious brain damage.

A head (brain) injury may occur after an impact to the skull and the following symptoms may be present: unconsciousness, disorientation, slurred speech, confusion, nausea, vomiting, and double vision.

Get medical help immediately.

NEVER provide any medical treatment in any accident or injury situation unless you are qualified by training and licensensure. Call 911!

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HEARING PROTECTION

When you are exposed to noise levels that are at or above 85 decibels (dB) averaged over 8 working hours, specific OSHA rules take effect which involve monitoring of noise exposure, audiometric testing, baseline audiograms, annual audiograms, audiogram evaluations, hearing protectors, training, and record keeping. Hearing protection is a serious business.

This Safety Meeting will focus on your hearing system and stress the importance of your involvement in your own hearing protection.

Your ears, on the side of your head, are the least important part of your hearing system. Should you lose your ear, you would not necessarily lose your hearing. Your outer ear, made of cartilage, includes the external auditory canal which leads to the eardrum which is only 2/5" in diameter. The eardrum separates the outer ear from the middle ear. Within the middle ear are three (3) bones commonly called the hammer, anvil, and stirrup. The stirrup (stapes) is the smallest bone in your body -- thinner than a grain of rice. Also in the middle ear is the Eustachian tube which connects the middle ear to the back of the throat to maintain equal air pressure on both sides of the ear drum.

The inner ear, where sound waves are converted to electrical impulses, actually has a function unrelated to hearing. It contains the semicircular canals which completely control your balance. Also in the inner ear is the cochlea, a small spiral coil in which you would find the basilar membrane which has over 15,000 hair cells. These hair cells are the end of the auditory nerve which goes directly to the temporal lobe of the brain.

It is interesting to note that the hardest bone in your whole body is the temporal bone which protects two thirds of the auditory canal and all of the middle and inner ear. Nature itself seems to have placed a high priority on your hearing.

Extremely loud noises or continuous noise can cause irreparable damage to the ear. It is quite possible to lose hearing at one or more frequencies and have normal hearing at other frequencies. The frequencies that would be lost are the frequencies that one might find in background noise in a work situation.

Hearing protection is one of the easiest to use and least expensive types of personal protection available. Protect your hearing. If you are issued hearing protection, use it!

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PROTECTIVE CLOTHING

Protective clothing must be worn when there is an exposure, or potential exposure, to hazardous conditions. The most important lesson one could learn about protective clothing is it must be appropriate for the hazard. Hazardous conditions generally would be chemical or mechanical, however temperature extremes too are hazardous conditions. This is particularly true on many job sites where you are exposed directly to the elements or limited weather protection is available.

Another consideration in the selection of protective clothing is whether the actual job may be accomplished in a comfortable and suitable manner. For example, does the clothing offer protection without being bulky, hot, or unmanageable? You cannot wear bulky gloves to do delicate work. The actual hazard protection needs, job needs, and personal needs must be matched.

A well prepared Material Safety Data Sheet will indicate the appropriate clothing (and other personal protection equipment) required. These guidelines must be followed and if there is any question, your supervisor must be asked. Never take chances with your own personal safety.

Do not use the wearing of protective clothing as an excuse for sloppy work. Just because clothing, for example is acid resistant, does not mean acid can be thrown around (an exaggeration) or because a disposable suit is used that good housekeeping is not required -- it is!

One should exercise care in the cleaning and/or disposal of contaminated protective clothing. Contaminated disposable clothing should be treated as contaminated waste and properly disposed of.

Some types of protective clothing can be re-used. Protective clothing that has not been exposed to hazardous materials should be cleaned and properly stored after use.

Protective clothing to prevent mechanical injury (protection from flying pieces of metal, for example) should be inspected to insure its integrity.

Know under what conditions protective clothing should be worn, where to find it, how to dispose of it, and/or how to clean and store it.

The whole idea of protective clothing is to protect your body from injury, both internal and external, to protect those around you, and to provide a means of not taking hazards in the workplace out of the workplace.

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RESPIRATORY PROTECTION

The primary purpose of respiratory protection is ensuring that the air you breath contains enough oxygen for life support and that it is free from harmful contaminants.

If, after a hazard assessment, it is determined that a clean, breathable atmosphere cannot be maintained by engineering controls such as containment or forced ventilation, then respirator use will be required.

The type of respirator selected will depend on the atmospheric hazard, the type of work to be done, and the conditions in which the work will be done.

The most common respirator is a negative pressure respirator. These respirators draw contaminated air through by the negative pressure created when one inhales. Types of negative pressure respirators include ½ face, full face, and even disposable face masks. In the case of the disposable mask, the mask, itself, is the filter. There are specific filters for specific contaminants such as dust, asbestos, ammonia, etc..

Negative pressure respirators require a fit test to ensure a proper seal between the face and the seal of the respirator. Prior to fit testing, medical approval for respiratory wear must be obtained from a licensed health care professional.

Contaminants may also be filtered from the air using a battery operated powered air purifying respirator (PAPR) in which positive pressure forces contaminated air through a filter.

The above air purifying respirators DO NOT supply oxygen and may never be used in oxygen deficient atmospheres or atmospheres that are immediately dangerous to life or health (IDLH).

Atmosphere supplying respirators are always positive pressure devices as they supply breathable air from an uncontaminated outside source. The outside source may be a tank carried on one's back - a self-contained breathing apparatus SCBA or a Type "C" system where a compressor forces breathable air through hoses to a face mask. Because clean air is supplied by atmosphere supplying respirators, filters for particular contaminants are not required.

Persons who use respirators will fall under a Respiratory Protection Program which includes training; fit testing; medical surveillance; respirator selection; storage, cleaning, inspection & maintenance; work area surveillance; air monitoring procedures; and an understanding of the posted results of the air monitoring.

A brief note about dust masks. Under no circumstances are dust masks appropriate for true respiratory protection and they will never be used in that capacity. However, personnel may use dust masks, at their discretion, to reduce annoying particles in the air that are not a true health hazard.