

### INTRODUCTION

Safety is the responsibility of every individual on a project or task. The Company values safety and encourages the use of common sense on-site and in the office in regards to safe work practices. All personnel working in the field and office will adhere to the following safety program to minimize personal injury, property loss, and negative impact on the environment. Strict rules will be enforced on-site and in the office so accidents and mishaps can be prevented. It is essential that all employees abide by these rules and agree to the following policies.

### COMPANY SAFETY POLICY

The Company believes that its employees are its most important resource. Establishing and maintaining a safe and healthy work place is of utmost importance to all levels of management. We believe that all accidents can be prevented. Our goal, each and every year, is zero lost time accidents and zero first aid accidents.

Supervisors are held accountable for maintaining a high level of safety at their work site. Their safety record is regularly monitored by analyzing *First Report of Inquiry* forms. The Company rewards good safety records both monetarily and with special recognition awards at meetings. Each employee is expected to do his or her share in helping the Company eliminate unsafe work practices and conditions.

When an accident is reported, the Corporate Safety Officer or authorized representative will conduct an accident investigation. The form to be used in the investigation and in filing a report is found at the end of this plan.

Executive staff assistance is always available for guidance and support to ensure the success of our zero accident plans.

The Company believes that identification and control of hazards and other potential accident situations is everyone's responsibility and is a condition for continued employment. The Corporate Officers want any unsafe situation that is not immediately corrected, to be called to their attention. Cost will not be a factor in planning for safety. **If the work cannot be done safely, it will not be done.**

### SAFETY COMMITTEE

The Safety Officer shall appoint a Safety Committee to help the company achieve its zero accident goal. It is comprised of:

- Safety Officer
- President

- Project Manager
- Superintendent
- Project Leader
- Worker/Tradesperson

The Committee meets quarterly to discuss and conduct accident reviews, safety evaluations, unsafe work practices, disciplinary actions, incentives and ideas to improve safety. Minutes of meetings are kept, including action items. Committee members are appointed to 2-year terms. The meeting is chaired by the Safety Officer, or his delegate.

### SAFETY INDOCTRINATION AND SAFETY MEETINGS

Company Supervisors will conduct job site safety meetings throughout the year. Employees are encouraged to approach Supervisors and express concern about safety issues in the workplace. Supervisors may then discuss possible methods of accident prevention with FacilityBUILD Management. The Safety Officer or another designated person will provide pre-work indoctrination to all employees and subcontractor representatives.

### SAFETY PLAN COMPLIANCE

A person who is involved in an accident will be initially counseled on accident prevention. Items that will be discussed in the counseling will be if safety devices were in place and properly used. Did the employee think about safety before doing the task? How could the employee have prevented this accident from happening?

The Project Superintendent will reprimand employees and subcontractors refusing to comply with safety regulations. Repeated violations will subject employees to disciplinary action up to, including termination. Subcontractors will be reprimanded using our *Improvement Required Report*. Repeated violations of the subcontract agreement and could result in termination of the agreement. Superintendents have the authority to counsel and discipline employees and subcontractors only. They do not have the authority to fire or otherwise terminate. Superintendents shall remove non-complying or repeat violators from the project site. The Safety Officer must be immediately advised of such action. Corporate Officers review is required prior to any employee or subcontractor termination.

### ALCOHOL AND DRUGS

All employees and subcontractors are prohibited from consuming alcoholic beverages or using illegal drugs while on a company job site, during a break, or while

performing off-site duties. **Simply stated, ALL employees and affiliates of the Company are prohibited from using alcohol, drugs, (including all forms of tobacco) during working hours.**

## WEAPONS

All weapons are prohibited on company sites. No fixed blade knives or folding knives longer than 3" should be brought onto the work site at any time.

## DRIVER SAFETY

It is strict policy that all drivers of company vehicles or personal vehicles used for company business be licensed. Our goal is to prevent auto accidents from happening. The Company expects its employees to be cautious and defensive. If a preventable accident occurs, the responsible driver will face disciplinary action.

It is state law and company policy that all drivers of company vehicles should obey the posted speed limit and all traffic signs.

Under NO circumstances should a driver or passenger ride without a seatbelt. It is the right of any employee to refuse to ride in a vehicle that is not equipped with operable seat belts or any other part of a vehicle that could jeopardize passenger safety; the Fleet Manager should be notified IMMEDIATELY.

No distracted driving activities are allowed when operating a Company vehicle. Such activities include, but are not limited to: the use of cell phones and other electronic devices, applying cosmetics, eating, etc.

The Company is committed to vehicle safety and expects all of its employees to use vehicles in the safest manner possible. Those who do not will face severe consequences.

## INJURY/INCIDENT REPORTING

All employees are required to report injuries. Injuries, whether or not they involve Company personnel, must be reported as soon as possible to the supervisor. The report forms must be completed and forwarded to the Corporate Office within 24 hours. Copies of the forms must also go to the Corporate Safety Office within 24 hours. The Corporate Office maintains statistics for both Company employees and subcontractors. All serious, disabling or fatal accidents, and property damage or vehicular accidents will require a phone call to the Corporate Office as soon as the emergency condition permits such a call. A *First Report of Accident* form will be submitted to the appropriate Supervisor for review within 2 hours of the incident if work time loss is expected and 24 hours if no time loss is anticipated.

Records of all first aid accidents requiring treatment will require a written report produced by the Supervisor and submitted to the Safety Officer within one week.

In addition, Management shall be notified immediately after emergency teams leave because of:

- Serious fires or explosions, which cause major work interruption
- Any safety, health or environmental incidents, which receive or have the potential for receiving substantial publicity, criminal investigations or citations

## FORMS FOR REPORTING

- *First Report of Accident* (Company employees)
- *Vehicle Accident Report*

**Note:** See your Supervisor for any further details for location of forms.

An interview/investigation should be conducted by the Supervisor for Company employees and in conjunction with the Subcontractor Project Representative (or designee) for subcontractor incidents. The investigation shall be conducted as soon as possible after the incident. The key elements for any incident investigation are as follows:

- Determine the root cause of the incident.
- Prevent re-occurrence of incident.
- Do not fix blame on any person or group.
- State clearly the known facts about the incident. Do not speculate.
- Do not draw judgmental conclusions about the cause of the incident.

*Take careful notes and do not move evidence.*

If an accident with possible lost work time occurs, the Safety Officer will conduct a more serious accident investigation. All documentation including summary reports will be kept by the Human Resources Department. A copy will be put in the personnel file of the injured or affected employee plus a copy to the appropriate Safety Officer and President.

A copy of the *First Report of Accident* form will also be given to the Safety Committee so they can discuss corrective training in the next scheduled meeting.

## EMERGENCY ACCIDENT PROCEDURES

If emergency action is required, dial 911 to reach police, EMT and/or ambulance. Ask the injured party which medical facility they prefer. If they have no preference, the Company uses the following medical facilities:

### MINOR INJURY:

- Assist the injured employee as he/she exits from the job site. Take or send the injured party to the medical provider of his/her choice.
- As soon as the injury is discovered, the Supervisor will call the applicable, posted emergency number.
- Use proper medical services to transport the injured person to the medical provider of his/her choice. If they are not capable of making a choice, transport

the injured party to the nearest hospital or emergency room.

- Once the injured party has been removed from the work area, direct all forces to cleaning up any hazardous work conditions caused by the accident provided they have the proper training.

#### FIRE/NATURAL DISASTER:

In case of a fire, follow these procedures:

- Make sure emergency exits are marked and clearly understood when the work area is first established.
- Suspend all operations and get all workers to safety. Regular cleanup procedures can be disregarded. If the fire can't be extinguished with given resources, employees should evacuate building or site as soon as possible. Employees are responsible for knowing their own evacuation route.
- Call the local Fire Department
- Determine if work can be resumed or if a job shutdown is in order.
- Follow regular accident reporting procedures.

#### BITES AND STINGS

It is best to call the EMS, especially if the injury is snakebite or if the injured person is highly reactive to stings. In lieu of this, while waiting for transportation or on the way to the hospital, do the following:

- Make the victim lie still and not move until the seriousness of the injury can be determined.
- To control blood circulation, apply a loose tourniquet 1-4 inches above the bite. The tourniquet should be released every 10 minutes for a period of about 1 minute.

#### BLEEDING

A bleeding person may be pale or colorless, semi-alert or unconscious. While one member of the crew calls emergency medical help:

- Place a clean cloth over the wound and press firmly with your rubber gloved hand or both hands. **Act Quickly!** If no pad or cloth is available, use your hands or a piece of clothing to close the wound and apply pressure.
- Hold the pad firmly in place.
- **Do not move the injured person.** Wait for trained Emergency Medical Services (EMS).
- If necessary, treat the victim for shock (see instruction for shock).
- Keep the victim warm. Place blankets under and on top of the victim.
- **Do not** give the victim alcoholic drinks.

#### SPRAINS AND FRACTURES

Unless there is visible bone damage, it may be difficult to determine whether the injury is a fracture or a sprain until it is x-rayed, so:

- Leave the injured limb at rest and try not to move it until EMS arrives.
- Apply cold compresses or ice for 20 minutes at a time, or until help arrives.

- **DO NOT** apply heat in any form. Heat will increase pain and swelling.
- Transport the injured to the medical provider of his/her choice or the nearest emergency room.

#### BRUISES

Affected area will be discolored or have a purple tone to the skin on the injured area.

- Apply an ice bag or cold compresses for 20 minutes. If the skin is broken, treat the cut first.

#### BURNS

A first-degree burn turns the skin red. A second-degree burn will have water blisters under the skin. Both of these types are extremely painful. Third degree burns will have blackened skin. It may not be terribly painful, but every burn can be complicated by shock.

- If the skin is not broken, immerse the affected area in clean, cool water, not iced.
- Apply burn ointment or the juice of an aloe plant to soothe and seal out air.
- Place a pad over the burn and bandage loosely.
- Treat for shock if necessary.
- If the patient appears to be in shock, call EMS.

#### CUTS AND ABRASIONS

Immediately clean wound and surrounding skin with sterile gauze pads. **Do not use water.** If the bleeding is not excessive, allow it to cleanse the wound while wiping away from the injured area. If bleeding is serious, try to stop it with compresses or tourniquet and call EMS. Firmly press a sterile pad over the wound until the bleeding stops, then bandage. Replace the sterile pad and bandage as necessary to keep the wound clean and dry.

#### ELECTRICAL SHOCK

If the victim is still in contact with the source of electrical shock, he may be locked in a muscular contraction or unable to release his grip. If the victim is still in contact, have the power turned off before attempting rescue. If this is not possible, quickly use a non-conducting material, such as a wooden pole, to push the victim away from the power source. Be careful, if the life-saver becomes part of the circuit, he will be caught in the same loop as the victim.

- If the victim is free of the power source, he/she may be dazed, near collapse, or have sustained cardiopulmonary arrest. Electrical burn sites may be visible at the point of contact as well as points of exit from the body.
- Administer Emergency Cardio-Pulmonary Resuscitation (CPR) if properly trained.
- Call for EMS and treat for shock.

#### FAINTING

Victim may be partially or completely unresponsive, but breathing continues and a pulse is present, although it may be slow or irregular.

- Place the victim on their back and elevate the legs.

- Make sure that the victim is breathing and that a pulse is present. Check that the nose and throat are open and unrestricted.
- Loosen restrictive clothing.
- Place a cool towel to the forehead.
- **Do Not** give anything by mouth.
- Calm the victim as they awake and keep them quiet.
- Call a physician or the EMS.

#### HEAT CRAMPS

The performance of vigorous physical activities in hot and humid weather may cause muscles to become painfully cramped.

Heat cramps are a lower level of heat stress. The symptoms of heat cramps are spasms in the abdomen or limbs. Frequent rest periods and fluid intake are appropriate measures to reduce and eliminate heat cramps.

- Stretch the cramped muscle by extending the effected limb.
- Place an ice bag on the cramped muscle. Drink salt water or other salt-containing fluids. Leave ice on for 15-20 minutes and repeat again in one hour.

#### HEAT EXHAUSTION

Heat exhaustion results from severe dehydration. The victim's skin will be pale and clammy with a rapid and weak pulse. The victim complains of weakness, headache, nausea or dizziness and may have cramps in the abdomen or limbs. Fever is not always present.

This is a serious condition that can progress to critical.

- Call the EMS or a physician.
- Have the victim lie down with their head lower than the rest of their body.
- Move to a cool place but protect from chilling.
- Sponge the body with cool water.

#### HEAT STROKE

Unlike heat exhaustion and heat cramps, heat stroke is characterized by hot, red, and dry skin. No sweating is apparent because the body is dehydrated. Victim may be incoherent and lose consciousness.

- Call the EMS or a physician.
- Cool the body by sponging with cool water.
- Replacement of fluids is imperative, assist with oral fluid intake if the victim is alert enough to drink.

#### HEAT STRESS

Employees who wear personal protective equipment while working in warm temperatures are subject to heat-induced physiological stress because little evaporative cooling can occur. Heat stress has signs and symptoms that range from a skin rash to heat stroke and death.

#### COLD STRESS

Many areas are subject to low temperature extremes combined with windy conditions. Care must be taken to limit cold exposure by providing proper protective clothing, access to warm shelter, and a temperature

dependent work regimen limiting lengthy periods of outdoor activity.

Cold stress can be manifested as both hypothermia and frostbite. Hypothermia is a cold-induced decrease of the core of the body temperature that produces shivering, numbness, drowsiness, and muscular weakness. If severe enough, it can be fatal.

Frostbite results from the constriction of blood vessels in the extremities, decreasing the supply of warming blood. This may result in the formation of ice crystals in the tissues, causing tissue damage. The symptoms of frostbite are white or grayish skin, blisters, numbness, mental confusion, failing eyesight, fainting, shock, and cessation of breathing. Death may occur from heart failure.

All personnel should be familiar with cold stress symptoms and appropriate first aid measures. To prevent cold stress, personnel should wear layers of loose-fitting clothing including insulated coveralls, head covering, and boots. A wind resistant outer shell, such as the available protective clothing, will decrease wind-chill effects.

#### SHOCK

Symptoms are pale or bluish discolored face, lips, nails, fingertips, earlobes, and cold, clammy skin with beads of perspiration on the forehead and palms of the hands, and shallow breathing. Complaints of feeling chilled or shaking with chills, nausea or vomiting. Eyes are lackluster and staring, pupils dilated. Victim seems unaware of surroundings and events may complain of thirst.

- Call EMS or physician.
- Keep the victim lying down with head lower than the body.
- Elevate the legs if there is no suspicion of broken bones.

#### BLOODBORNE PATHOGENS

The Company has implemented a "Bloodborne Pathogen Control Plan" due to concerns about bloodborne diseases that a first aid provider might be exposed to. OSHA has issued a standard procedure plan that is designed to protect people from exposure to bloodborne pathogens. Examples of these harmful diseases include Hepatitis B (HBV) and the Human Immunodeficiency Virus (HIV).

Bloodborne pathogens enter the body and infect through accidental injury with contaminated sharp objects. All objects that can pierce the skin need to be handled carefully. Also, use EXTREME caution when working with an accident victim or scene.

#### EXPOSURE DETERMINATION

Any employee might find themselves in the position of giving care to an accident victim. According to Title 29-Labor, Code of Federal Regulations, Part 1910.1030 (b), occupational exposure is limited to first responders who

give first aid to fellow workers and might have to deal with potentially infectious body fluids.

## METHOD OF IMPLEMENTATION

Universal precautions shall be observed to prevent contact with blood or other potentially infectious material. All bodily fluids will be treated as if known to be infected with HIV, HBV, or any other bloodborne pathogen.

First aid kits are equipped with protective gloves and pocket masks. These items are to be used when giving first aid to a victim so that the caregiver can be protected from contact with victim's saliva. The saliva can contain blood or other body fluids, which may infect a person resuscitating the victim, if precautions are not used. Anything that may be contaminated with blood or other infectious agents needs to be decontaminated with an appropriate disinfectant. HBV can survive dried at room temperature for at least one week.

All contaminated first aid materials (paper towels, gauze, gloves, clothing, etc.) should be disinfected or discarded in specially marked bags.

Hand washing is VERY important to a first aid provider or for anyone working near the accident victim or scene. Even after using gloves, wash hands to ensure that infectious fluids aren't transmitted to other parts of the body.

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# Construction Safety in Occupied Facilities

## GENERAL

Much of FacilityBUILD's work involves working in occupied customer facilities. This specialized work requires many additional precautions over and above non-occupied construction. It also requires increased pre-construction planning with emphasis on protecting the construction workforce, facility employees, the public, the facility plant & equipment and the environment.

## PLANNING

- Meet with customer, architect and facility representatives to discuss: access needs, hours of operation, critical areas, hazards, assessments, project phasing, dust control, customer/facility requirements, etc.
- Create a plan and schedule that reflects the unique occupied construction requirements.
- Present the plan and schedule to customer, and facility representatives for review and approval.
- The plan and schedule should address the following:
  - Fire alarm systems and evacuation routes
  - Security requirements
  - Unique safety hazards
  - Construction access and staging areas
  - Scaffolding/shoring requirements

- Relocation of personnel/fixtures/equipment
- Protection of surfaces
- Caution signs and banner tape
- Temporary facility personnel access
- Utility disconnects and relocation
- Dust control barrier installation
- MIS computers/electronic equipment protection
- Environmental hazards
- Other facility specific requirements
- The approved plan must be communicated to all subcontractors and construction personnel in the pre-construction meeting.
- The plan and schedule should be updated as necessary in construction progress meetings to reflect changes and new information.

## PRECAUTIONS

- Make sure that designated construction worker access routes are enforced.
- Construct temporary airtight dust barriers between construction zones and occupied areas.
- Protect all existing surfaces and finishes with polyethylene film taped securely in place. Make sure floor protection is slip resistant.
- Use HEPA filters in negative air machines to collect and filter dust during demolition activities. Contain all dust within construction zone.
- Post construction zone warning signs at the entrance to all restricted areas.
- Pre-warn facility representatives of the use of powder-actuated nail/pin guns.
- Use negative air filtration machines with venting outside of building (whenever feasible) when using products that produce fumes; or provide for adequate ventilation.
- Each employee should be familiar with the locations of the fire alarm push stations nearest to their workstation.
- Each employee should become familiar with the appropriate evacuation route.
- During fire alarms, Managers or designated persons in charge will make last minute searches of their areas to ensure all personnel are evacuated. Help the Managers by clearing the area quickly, and aid them if they request assistance.
- During evacuations, do not use elevators. Use the stairwells, following the nearest exit signs and evacuation drawings. Check closed doors for temperature and smoke before opening.
- Keep all passageways, entryways, aisles, storerooms, service rooms and work areas clean, orderly, sanitary and well maintained, with no obstructions.
- Report spills immediately and verify that the spills are cleaned up properly.
- File drawers and desk drawers should not be left open. Do not overload top drawers so that files

tip over. Secure file cabinets and bookcases to wall or each other in locations where earthquakes are a hazard. Keep heavy files in lower drawers.

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## Field Safety

Care must be taken in the field to prevent accidents from occurring. To do this, the Company will not tolerate horseplay on job sites. It is imperative that company employees are professional and courteous on the job. Fireworks, firearms, and loud music are therefore prohibited on property that the Company is working on.

## PROTECTION OF THE ENVIRONMENT

The preservation of the environment is of top priority to the Company and its employees. All employees should practice common sense by keeping the jobsite free of trash and hazardous substances. Environmental regulations should also be followed, in accordance with any Company policies.

## ACCIDENT PREVENTION RESPONSIBILITY

Primary responsibility for jobsite safety rests with each Supervisor (Project Leader and Superintendent). The training and administration of the Safety Program will be directed by the Safety Officer.

## CHEMICAL MANAGEMENT

Because of the nature of the work, employees may come into contact with several chemicals. It is important that employees use extreme caution when handling chemicals that may be harmful to health.

All chemicals that are brought onto a job site must be approved for use. Also, any unused chemicals must be brought back to the work area or disposed of properly. Empty chemical containers must be cleaned and disposed of at the end of each workday. No containers should be left on job-site premises. Contractors and employees must also:

- Receive written approval from the Safety Officer before placing ANY substance down a drain inside a Company building or job site.
- Do everything possible to eliminate the possibility of spills, drips, or leaks.
- Obtain permission before disposing of waste in a waste container.
- Be properly trained before handling and disposing of chemicals.

## CHEMICAL WARNING LABELS

Warning labels will describe the substance within the container and any appropriate health and handling warnings about the chemical.

The labels will be kept legible, in English or any primary language used by an employee on a project. If any employee discovers that a label on a chemical container

is unreadable or missing, they will report this to the appropriate Supervisor, who will issue a new one.

Periodic inspections will be conducted of all chemical containers stored at Company facilities, to ensure proper labeling is in place. In addition, any chemical delivered to Company warehouses or job sites will be checked for proper labeling and MSDS sheets. If either is missing, the distributor will be contacted so he can correct the problem before the material is used. This is the responsibility of everyone in the Company.

## MATERIAL SAFETY DATA SHEETS (MSDS)

An MSDS must be on hand for every chemical used and stored at the company facilities or at work sites. These sheets will be provided by the distributor, manufacturer, importer, or supplier, in the format specific to their company.

When a chemical is purchased, and MSDS is found to be incomplete, the distributor will be notified so he can correct it or supply a new one. **Do not use the material until a proper and complete MSDS is on hand.** If a proper MSDS cannot be obtained, return the material for full credit.

The Warehouse Manager will keep all MSDS sheets for all routinely used substances at the office in a three ring binder. It is the responsibility for all Supervisors that MSDS for the chemicals used on all projects are kept at all project sites. Employees will be able to refer to this information at either of these locations. MSDS can appear in several different formats, but they contain basically the same information. The information found on the MSDS should be used as a reference or as a supplement to the information found on the label. The following information should be found on the MSDS:

- Chemical name
- Manufacturer's name and address
- Emergency telephone number in the case of emergency involving specified material
- Date prepared and the signature of the preparer

## HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

### HAZARDOUS COMPONENTS

The HC contains the specific chemical identity, its formula, and its common names.

- OSHA PERMISSIBLE EXPOSURE LIMITS (PEL): PEL is the permissible maximum amount of the chemical that a person may be exposed to without harm.
- THRESHOLD LIMIT VALUE (TLV): TLV is the concentration of a chemical in the air that can be breathed for five consecutive eight-hour workdays by most people without harmful effects. The TLV is expressed in parts per million.
- OTHER LIMITS RECOMMENDED: Any recommended limitation of the use of the chemical.

## PHYSICAL/CHEMICAL CHARACTERISTICS

## BOILING POINT

The temperature at which a liquid boils.

## VAPOR PRESSURE (mmHg)

Vapor pressure measures a liquid's tendency to evaporate. The higher the pressure, the more quickly it will evaporate.

## VAPOR DENSITY

This indicates the weight of the vapor as compared with an equal volume of air. A chemical with a vapor density greater than 1, will sink to the ground. If the chemical has a vapor density of less than 1, it is lighter than air and will rise. Everyone has to be aware of how vapors will circulate in a room and how they will ignite.

## SOLUBILITY IN WATER

This indicates whether the chemical can mix with water and at what point it separates.

## APPEARANCE AND ODOR

A brief physical description of the chemical's color and smell.

## SPECIFIC GRAVITY

Ratio of the weight of the material to the weight of an equal volume of water. The specific gravity determines whether the material floats or sinks in water. Specific gravity values less than or equal to 1 mean that water should not be used to extinguish a fire involving the material unless the water comes from automatic sprinklers.

## MELTING POINT

The point at which the substance melts and turns to liquid.

## EVAPORATION RATE

Indicates the temperature at which a substance evaporates (Butyl Acetate = 1).

## FIRE AND EXPLOSION HAZARD DATA

### FLASH POINT

The flash point indicates the lowest temperature at which a liquid gives off enough vapor to ignite in air when exposed to a flame. When the flash point is between 100° and 110° Fahrenheit, extra care must be taken. The temperature of the liquid could be high enough to be ignitable if an ignition source exists. A red diamond is required on all liquids classified by OSHA as flammable (flash point values of 99.9° Fahrenheit or below).

### FLAMMABLE LIMITS

Indicates the range of vapor concentrations, which will explode when an ignition source exists. The Lower Explosive Limit (LEL) is the minimum amount of vapor in the air that can be ignited. The Upper Explosive Limit (UEL) is the maximum amount of vapor in the air that will sustain fire.

## EXTINGUISHING MEDIA

Materials suitable for putting out a fire involving the specified material. These include water fog, foam, and alcohol foam. Class A fires can be fought with water. Class B fires can be extinguished with carbon dioxide, foam or dry chemicals. Class C fires can be fought with carbon dioxide or dry chemicals. Class D fires can be extinguished with special compounds.

## SPECIAL FIRE FIGHTING PROCEDURES:

This indicates the material's special properties when it comes in contact with fire. This section will also include what protective gear is needed when trying to extinguish the fire and also evaluate any toxicity of the material on anyone fighting the fire.

## UNUSUAL FIRE AND EXPLOSION HAZARDS

Indicates any special types of hazards requiring attention. This description will indicate whether the chemical is difficult to extinguish, will reignite spontaneously, and how it reacts with water and other extinguishing agents.

## HEALTH HAZARD DATA

### ROUTES OF ENTRY

A chemical may enter the body through inhalation, contact with skin, or by being swallowed.

### HEALTH HAZARDS

This indicates any long-term or short-term effects of a chemical on the human body.

**Carcinogenicity:** Indicates whether the chemical causes cancer. Not all hazardous substances cause cancer when a person is exposed to them.

## SIGNS AND SYMPTOMS OF EXPOSURE

Indicates and describes the effects of exposure to specified chemical.

## MEDICAL CONDITIONS SEVERELY AGGRAVATED BY EXPOSURE

Indicates how the chemical will affect any preexisting medical conditions.

## EMERGENCY AND FIRST AID PROCEDURES

This describes first-aid procedures to use in order to reduce hazardous effects of the chemical on a person. It is important to remember that these are emergency procedures and the exposed person should be examined by a doctor as soon as possible.

## PRECAUTIONS FOR SAFE HANDLING AND USE STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

This section describes precautions to be taken when the specified chemical is released. Examples are to avoid breathing gasses and vapors, avoid contact with chemical, and remove ignition sources. In this section, recommended techniques to use in controlling land or water spills are also given.

## WASTE DISPOSAL METHODS

Indicates proper disposal of the specified chemical and contaminated materials.

## PRECAUTIONS TO TAKE IN HANDLING AND STORAGE

Describes how to safely handle and store the specified chemical to avoid hazardous reactions.

## OTHER PRECAUTIONS

This section indicates special precautions to use when handling or disposing of the chemical.

## CONTROL MEASURES

### RESPIRATORY PROTECTION

This section specifies the type of respirator required by OSHA when the chemical is used, if a respirator is required at all.

### VENTILATION

Indicates ventilating systems needed to prevent overexposure to the chemical. The two types of ventilation are "local exhaust" and "mechanical ventilation". Local exhaust is used to capture a released chemical quickly, whereas mechanical ventilation is used for heating and cooling.

### PROTECTIVE GLOVES

If gloves are needed in handling the specified chemical, this section specifies what type to use.

### EYE PROTECTION

Indicates appropriate eye protection. Examples are face shields, safety goggles, or glasses.

### OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Describes other equipment needed and what type when dealing with the specified chemical.

Chemicals with the following ingredients are not allowed on the job site unless they have been approved by Management.

- Chlorofluorocarbons (CFC)
- CFC-11, CFC-12, CFC-113, CFC-114, CFC-115
- Carbon Tetrachloride (CCL4)
- Chlorinated Solvents or Compounds
- Glycol Ethers
- Methanol
- Trichloroethane (TCA)
- Toxic Materials

The original notebook will be updated whenever a new MSDS is received. The notebook has an index that is updated whenever a new MSDS is added.

## PEDESTRIAN SAFETY

Employees, visitors, and subcontractors need to use designated crosswalks and walking areas. Obey traffic laws and exercise care. Under no ordinary circumstances should employees run on the job site. Running leads to injuries and is prohibited, unless life is in danger.

## PROTECTIVE PROTECTION EQUIPMENT POLICY

Protective eye, hearing, face, fall protection, dust protection masks, gloves and footwear shall be required at all times. The Company will make available the personal protective equipment suitable for the work to be performed, with the exception of footwear. Employees will use such safety equipment at all times. No unprotected person shall knowingly be subjected to a hazardous environmental condition.

Employees shall provide and wear steel toe protective footwear at all times.

No employee shall provide or wear any type of respirator, besides dusk masks, without being properly tested and trained.

Protective equipment shall meet the following minimum requirements:

- They shall provide adequate protection against the particular hazards for which they are designed.
- They shall be reasonably comfortable when worn under the designated conditions.
- They shall fit snugly and shall not unduly interfere with the movements of the wearer.
- They shall be durable.
- They shall be capable of being disinfected.
- They should be in good repair.

Persons whose vision requires the use of corrective lenses or spectacles and who are required by this standard to wear eye protection, shall wear goggles or spectacles of one of the following types:

- Spectacles whose protective lenses provide optical correction.
- Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacle.
- Goggles that incorporate corrective lenses mounted behind the protective lenses.
- Full-face shields attached to hard hats.

Every protector shall be distinctly marked to facilitate identification only of the manufacturer.

When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.

Design, construction, testing and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z-87.1-1968.

Safety vests are required to be worn by all FacilityBUILD personnel and subcontractors while on a FacilityBUILD project site.

All FacilityBUILD employees and subcontractors shall wear construction appropriate clothing or uniforms at all



times while on our jobsites. No torn, ripped, ill fitting or excessively dirty clothing will be allowed. No T shirts or caps with inappropriate advertising on them will be allowed. Non OSHA complaint footwear will not be allowed.

**HAZARDOUS COMMUNICATION PROGRAM**

The Company’s “Hazardous Communication Plan” will be implemented and maintained by the Warehouse/Fleet Manager. He will update the list of standard chemicals used by the Company and ensure the MSDS are kept current.

All MSDS will be kept in a single labeled notebook in the main office. Copies of the MSDS for potentially hazardous chemicals used on a project are distributed by the Superintendents to the Project Leaders and are kept on site in the MSDS notebook. If a new product arrives at the job site, the Project Leader will check to see that he/she has a current MSDS for that product before putting it to use.

The Warehouse/Fleet Manager will be responsible for the integrity of all labels found on the containers of chemicals delivered to the main office.

If chemicals are transferred into unlabeled containers, employees will report the transfers to the Warehouse/Fleet Manager who will obtain proper labels for the new containers.

**ILLUMINATION**

Whenever feasible, areas accessible to employees shall be lighted with the minimum illumination intensities listed in the following guideline:

Table 2-3. Work Area Minimum Illumination

3 Foot Candles	Construction Ways
5 Foot Candles	General Site Areas
5 Foot Candles	Indoors, Warehouse, Corridors, et.
5 Foot Candles	Tunnels, Shafts, General Underground Work
10 Foot Candles	General Shops (i.e., mechanical and electrical)
30 Foot Candles	First Aid Stations, Infirmarys and Office

**SANITATION AT TEMPORARY WORKPLACES**

- Adequate supply of potable water shall be provided on site. For temperatures expected to reach 70° F or above, one or two gallons of water shall be provided for each worker daily.
- Potable water containers used to dispense drinking water shall be tightly closed. Water shall not be dipped from container.
- Containers will be marked clearly for potable or non-potable water.

- Receptacles for used drinking cups shall be provided.
- Outlets for non-potable water shall be identified clearly.

**TRAFFIC CONTROL**

- Keep access roads clear of vehicles and materials.
- Locate, mark and protect utilities to prevent damage.
- Obtain authorization and clearance from contracting agencies before making any utility cuts in existing roads.
- Provide vehicle parking for workmen.
- Provide flag men when required.
- All traffic controls and posted speed limits will be adhered to.
- All operators of any vehicle or construction equipment operations on a public street must have a valid driver’s license, without restrictions.

**MOTORIZED EQUIPMENT**

- Seatbelts shall be provided on all earth moving and other material-handling equipment equipped with a rollover structure.
- Earth moving and material-handling equipment not required to be equipped with a roll-over protective structure are not required to have seat belts.
- All bidirectional machines shall be equipped with an audible backup alarm.
- Scissor points on all front-end loaders, which constitute a hazard to the operator during normal operation, shall be guarded.
- Equipment shall be equipped with operable parking brakes.
- All cab glass shall be safety glass or equivalent, which introduces no visible distortion affecting the safe operation of any machine.
- All vehicles in use shall be checked at the beginning of each shift to assure parts, equipment, and accessories are in safe operation condition.

**ROLLOVER PROTECTIVE STRUCTURE**

- All material handling equipment (bulldozers, loaders, scrapers, etc.) manufactured after July1, 1969, must be equipped with ROPS.
- Rollover protective structures and supporting attachments shall meet and be in accordance with OSHA standards, Subpart W of CFR 1926.1000, Rollover Protective Structures; Overhead Protection.
- The design shall provide a vertical clearance of at least 52” from the work deck to the ROPS at the point of ingress or egress.

**SAFE OPERATION**

- No employee shall move or cause construction equipment or vehicles to be moved upon any access roadway or grade unless the access roadway or grade is constructed and maintained

to safely accommodate the movement of the equipment and vehicles involved.

- No equipment will be operated when any part of that equipment can come into contact with overhead lines.
- All utilities must be identified before any digging or cleanup work is to be started.
- Personnel shall not be allowed to ride in or work on any part of the equipment unless cleared by the Contractor's Safety Officer.
- Ground personnel shall be notified when the operator's visibility is obstructed in any direction. Seat belts shall be worn in equipment where seat belts are provided.
- All equipment shall be operated in a manner, which will not cause injury or harm to the operator or fellow workers. If conditions are present which may injure or harm a worker (i.e. muddy conditions, mechanical problems), equipment operation will be suspended until the problem is resolved.

### EXCAVATING, TRENCHING, AND SHORING

Any excavating, trenching and shoring shall comply with OSHA standards 1926.650, Subpart P – Excavations, Trenching, and Shoring.

- Prior to any excavating work, locate and mark all underground utilities. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation.
- Trench protection is required in excavations 5' or more deep.
- Trenches more than 4' deep must have a safe exit such as a ramp or ladder within 25' of worker.
- Excavated material and other objects must be kept at least 2' from trench opening.
- No one should work above other employees on the sides of sloped or benched excavations unless lower worker is protected from falling material.
- No one is allowed under loads handled by lifting or digging equipment.
- A top person must be stationed outside the trench to detect moving ground and warn workers to leave trench.
- When working in traffic area, orange safety vests and hard hats are required.
- Trees, boulders and other surface encumbrances located so as to create a hazard to workers involved in excavation work or in the vicinity thereof, at any time during operations, shall be removed or made safe before excavation has begun.
- The walls and faces of all excavations in which workers are exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground, or other equivalent means.
- A competent person shall make daily inspections of excavations. If evidence of possible cave-ins or slides are apparent, all work in the excavation shall cease until the necessary precautions have been taken to safe guard workers.

- Excavations shall be inspected by a competent person after every rainstorm or other hazard-increasing occurrence, and the protection against slides and cave-ins shall be increased, if necessary.
- No person shall be positioned under loads handled by power shovels, derricks, or hoists. To avoid being contacted by spillage, workers shall stand away from any vehicle being loaded.
- Where workers may be required to enter an excavation, excavated material shall be effectively piled and retained at least 2' more from the edge of the excavation.
- Diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering an excavation and to provide adequate drainage of the area adjacent to the excavation. Water shall not be allowed to accumulate in an excavation. If water accumulates, pump from the excavation site.
- Dust conditions shall be kept to a minimum by the use of water or a water spray.

### DUST SUPPRESSION

When at job sites that are greater than one acre in size, it may be necessary to obtain a *Dust Suppression Permit*. This means that dust will have to be controlled by maintaining a wet work area. Use common sense in keeping dust to a minimum and follow the rules as described in the permit.

### JOBSITE SET UP

- The Superintendent will request and provide all job boards, copies of permits and wage decision and FacilityBUILD signs as needed. This should be scheduled in advance. The Superintendents are responsible for making sure the signs are maintained at all times at job sites.
- Superintendents are responsible for making sure that utility line spots have been called for before beginning any excavation.
- Silt fences and SWPP are as required by State and Federal regulations.
- All exterior and interior jobsites shall have proper protection for workers and visitors and the jobsite shall always be in compliance with OSHA standards. Jobsite trailer requirements are TBD by the Project Manager but shall be maintained and kept in a reasonably clean manner.
- The clean up procedure of EVERY JOB, EVERY TRADE, EVERY DAY shall be enforced by all FacilityBUILD employees regardless of their position.
- Barricade tape and flagging is for **temporary** use only.
- At a minimum any jobsite shall have 4' heavy duty, commercial grade orange safety fence and metal T poles and/or temporary chain link fence around all demolition, excavation, trenching or construction operations, regardless of depth or location. The safety fence must be at least 4' in height and secured vertically every 10' at a minimum. The chain

link fences must be 6' in height and secured every 10' or as required.

- No orange cones or barricades shall be used to protect the project from the public, students or subcontractors. These may be used for traffic control and shall be maintained daily.
- All construction demolition debris shall be placed in a commercial type trailer or dumpster. No debris shall be left on the ground, unprotected overnight.
- All over excavated soils, broken concrete or any other excavation spoils shall be placed in a protected area complete with fencing and signage. No debris shall be left on the ground, unprotected overnight.
- No residential or non commercial grade barricade, tape or fencing shall be used on any FacilityBUILD jobsite, regardless of the location.
- All jobsites shall have proper protection for workers and visitors and the jobsite shall always be in compliance with OSHA standards. This is the responsibility all FacilityBUILD employees regardless of their position in the company.

### CONFINED SPACE ENTRY

According to OSHA 29 CFR 1910.146, a confined space is a work area which is large enough and configured to allow employees to enter and perform assigned work, has limited or restricted entry or exit (i.e. pits, vaults, tanks, vessels, man holes and some trenches) and is not designated for continuous employee occupancy.

### PERMIT REQUIRED CONFINED SPACE

A confined space, which contains or has the potential to contain a hazardous atmosphere. It contains a material that has the potential for engulfing an entrant. It has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section.

### NON-PERMIT CONFINED SPACE

A confined space that does not contain a hazardous atmosphere does not have the potential to contain any hazard capable of causing death or serious harm.

The Project Manager, Superintendent, and PL are responsible for evaluation of each job site to determine if any permit-required confined spaces are present and are to be entered.

### ENTRY INTO A CONFINED SPACE REQUIRES THE FOLLOWING:

- Each confined space must be inspected and evaluated by a qualified individual prior to entry.
- Tests for harmful or explosive substances, the presence of any toxic or hazardous materials and oxygen deficiency shall be performed and recorded immediately prior to entry, after any interruptions in the work procedure, and at adequate intervals to ensure the continuing safety of workers in the confined space.

- Any planned changes in a confined-space work environment, that may impact the health and safety of the workers, must be approved by the Safety Officer prior to beginning work.
- The confined space shall be ventilated continuously.
- The worker entering a confined space shall be in communication with another person stationed at or near the entrance or provided a means of continuous communication with a person outside.
- Visually checked by a designated person at intervals as often as may be required by the nature of the work to be performed.
- The worker entering the confined space shall wear respiratory and Personal Protective Equipment as appropriate.
- The concentrations of flammable substances shall be maintained below 20% of the lower explosive limit of the substance or substances, as determined by repeated testing.
- When flammable or explosive gasses or liquids are present, all sources of ignition shall be eliminated or controlled.
- The entrant shall wear a continuously attended safety belt or harness of any type, which will keep the worker in a position to permit rescue.
- All personnel must evacuate a confined space if any unplanned changes occur that may impact worker health and safety.

### PERMITS

Confined Space Permits must be posted on the Job Board and positioned close to the entrance of the confined space. Confined space entry permits must contain at a minimum the following information:

- The name of the initiator, the qualified inspector, the Supervisor and all personnel entering confined space.
- The date, start time and finish time of entry task.
- The location of the confined space and a description of the work to be performed within the confined space.
- A checklist detailing that:
  - Lines are blinded or blocked
  - Any electrical is locked out
  - The confined space has been purged
  - Proper ventilation has been provided
  - Sloping and/or shoring is stable (for trenches)
  - Atmosphere is tested for toxic substances (and type), explosive potential and oxygen
  - Standby person(s) are there and retrieval equipment is present and available.
  - Communication procedures are set
  - Barricades and signs are posted

The Project Managers or Supervisors must fill out the confined space permit application. This form must be signed by the Safety Officer, or his authorized representative, before processing.

## EMERGENCY DECONTAMINATION

In an emergency, the primary concern is to prevent the loss of life or severe injury to site personnel. If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential lifesaving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately.

## DISCOVERY OF UNKNOWN CONTAMINATION/CONTAINERS

Where site activities uncover buried drums, unknown containers, or other unknown contaminants, including building/structure components that may contain asbestos, lead or PCB's, the procedure will be to cease operations immediately, withdraw from the effected area and notify the Supervisor or the Project Manager. Before site activities can be resumed, all unknown situations must be evaluated and identified. This may require bringing a specialized contractor trained in the safe methods for identifying and handling unknown contaminants.

Where only a portion of the site is effected, the area containing unknown contaminants must be barricaded and all site personnel must be warned not to enter the barricaded area. Work may then continue on the unaffected portions of the site.

## SPILL PREVENTION, CONTROL AND CONTAINMENT PLAN (SPCC)\*

If a spill occurs, control measures shall be implemented. Determine the product spilled, location, and size of the spill. For small, incidental spills, the cleanup shall be done promptly. Solidify liquids with the proper absorbing materials. Place spilled materials onto the load or into a container. A small spill implies no injury to any personnel or to the public and can be cleaned up quickly and easily.

For large spills, immediately remove any persons who may have been contaminated and attend to first aid needs. Stop the sources of the spill if possible. Where site personnel can provide some initial containment functions without endangerment they may do so.

### ACTIONS MIGHT INCLUDE FOLLOWING:

- Damming or berming of downstream drainage pathways to contain spill liquids.
- Using on-site absorbent materials to immobilize liquids.
- Restricting access to the spill area. Command of the incident will be given to the local emergency response agency upon their arrival.
- Final cleanup procedures will be determined by the Safety Officer in conjunction with Project Supervisor and the appropriate regulatory personnel.

To prevent spillage of solid materials (soils, etc.) when loading bulk loads, it may be necessary to place sheeting at the loading area to contain any soils that may spill.

For liquids, drums may need to be over-packed depending on the integrity of the drum (see Drum Handling SOP). Plastic sheeting may have to be put in place when handling containers of liquids. Secondary containment shall be provided for vehicles transporting liquid containers.

## AIR MONITORING

The Project Supervisor and the Safety Officer shall be prepared to take the appropriate action in cases where air monitoring data, meteorological data or other site-specific conditions indicate that airborne migration off-site will occur. These actions may include but are not limited to the following:

- The use of water sprays to moisten soils
- The use of surfactants in conjunction with water sprays to moisten soils
- Limiting traffic or work in areas where blowing dust can be generated by work related tasks
- Ordering work to be stopped on a site until such time that the work will not cause airborne particulate matter to migrate to residential areas or until other dust control methods can be initiated

## MATERIAL TRANSPORT

- Transport vehicles should be loaded in such a manner as to minimize blowing dust.
- Transport vehicles hauling materials to or from project sites should be loaded in such a manner as to avoid losing any of the loaded materials onto streets, roadways, or rail beds located in residential areas. If materials are spilled onto any of these areas they must be cleaned up immediately.
- Transport vehicles must be covered to the extent required by Department of Transportation regulations.
- Transport vehicles must be decontaminated before leaving a site if there is any possibility that they have become contaminated from any hazardous/toxic spills or from suspected contaminants.

## PHYSICAL HAZARDS

Construction sites may contain numerous physical safety hazards such as the following:

- Holes or ditches
- Precariously positioned objects, such as drums or boards that may fall
- Sharp objects, such as nails, metal shards, and broken glass
- Slippery surfaces
- Steep grades
- Uneven terrain
- Unstable surfaces, such as walls that may cave in or flooring that may give way

Some safety hazards are a function of the work itself. For example, heavy equipment creates an additional hazard for workers in the vicinity of the operating equipment. Protective equipment can impair a worker's agility, hearing, and vision, which can result in an increased risk of an accident.

Accidents involving physical hazards can injure workers and can create additional hazards. For example, increased chemical exposure due to damaged protective equipment or danger of explosion caused by the mixing of chemicals. Site personnel should constantly look out for potential safety hazards and should immediately inform their Supervisors of any new hazards so that action can be taken.

## NOISE

Working around large equipment often creates excessive noise. The effects of noise can include the following:

- Workers being startled, annoyed, or distracted
- Physical damage to the ear, pain, and temporary and/or permanent hearing loss
- Communication interference that may increase potential hazards due to the inability to warn of danger and provide the proper safety precautions to be taken

If workers subjected to noise exceeding an 8-hour time weighted average (TWA) sound level of 85 DBA (decibels), then feasible administrative or engineering controls shall be instituted to reduce noise levels to or below the permissible values. All persons exposed to excessive noise levels shall be provided with and shall wear a hearing protection device that effectively protects the worker.

## ELECTRICAL

The Company attempts to remain in compliance with current NEC codes and shall provide approved ground-fault circuit interrupters (GFCI) for all 120-volt, single phase, 15 and 20 ampere receptacle outlets on construction sites which are not part of the permanent wiring of the building or structure and which are in use by employees. Receptacles on the ends of extension cords are not part of the permanent wiring and therefore will be protected by ground-fault circuit interrupters whether or not the listed extension cord is plugged into permanent wiring.

Electrical work on, or near energized electrical circuits must be performed by a qualified individual. As a minimum, individuals performing work on or near energized electrical circuits must be either: a licensed electrician in the state in which the work is being performed or apprentice or Journeyman electrician who has been trained by a recognized trade or union program. Additionally, the individual must be experienced in working with the type of electrical circuits on which energized electrical work is to be performed.

Minimum requirements to work on or near energized electrical circuits also include the use of rated, insulated tools and the necessary personal equipment. Personal Protective Equipment shall always include eye protection. It is the Contractor's responsibility to assess the work hazards associated with their work and to ensure that their employees and subcontractor's employees utilize any additional safety equipment over and above these minimum requirements.

## ELECTRICAL HAZARDS

Overhead power lines, downed electrical wires, and buried cables create a danger of shock or electrocution if workers contact or sever them during site operations. Electrical equipment used on-site may also pose a hazard to workers. To help minimize this hazard, low-voltage equipment with ground-fault interrupters and watertight, corrosion-resistant connecting cables should be used on-site.

In addition, lightning is a hazard during outdoor operations particularly for workers handling metal containers or equipment. To eliminate this hazard, weather conditions should be monitored and work shall be suspended during electrical storms or if a storm is approaching.

An additional electrical hazard involves the use of capacitors that may retain a charge. All such items shall be properly grounded before handling. OSHA's Standard 29 CFR, Par 1910.37, describes clothing and equipment for protection against electrical hazard.

## MATERIAL HANDLING

Material handling accounts for 20-25% of all occupational injuries. Material handling at construction sites can vary from heavy equipment handling to manually handling items such as drums, equipment, and other cleanup items. Hazards include detonation, fire, explosion, vapor generation, and physical injury resulting from moving heavy containers by hand and working around materials, drums, and heavy equipment.

All rigging equipment must be inspected. Damaged or defective equipment must be removed from service. In addition, other provisions of OSHA Standard 1926.251 on rigging must be followed.

Overhead loads create significant safety hazards. Personnel must never walk under a suspended load.

When any materials are to be handled, planning becomes critical. Routes for moving materials must be clearly outlined. Paths must be cleared of all obstructions, (rocks, etc.) so the load may be transported safely.

## MANUAL LIFTING

Injuries to back and abdominal muscles from lifting heavy loads are one of the most common injuries reported. Such injuries can range from relatively mild strain to major permanently disabling injuries. Lifting

heavy equipment should be approached with consideration of the following:

- Overall weight
- Distribution of weight
- Unwieldiness or awkwardness
- Distance to be carried
- Obstacles to be negotiated such as wet, uneven surfaces, slippery banks and rocks
- Conditions such as wind, snow, ice, and slippery surfaces
- Visibility

All items should be lifted by using the power of the leg muscles, rather than the back, stomach, or arm muscles. Approach the item so as to have the load evenly balanced. **Never bend over when lifting!**

If the object is too bulky or heavy to be handled by one person, two or more people should be assigned to the task. When two or more people carry an object, they should adjust the load so that it rides level and so that each person carries an equal part of the load. In addition, both people should know the destination and path where the object is to be carried.

Prior to manual lifting of objects employees should do the following:

- Inspect materials for splinters, jagged or sharp edges, burrs, rough or slippery surfaces
- Grasp the object with a firm grip
- When handling lumber, pipe, or other long objects, keep hands away from the ends to prevent them from being pinched
- Wipe off greasy, wet, slippery, or dirty objects before trying to handle them
- Keep hands free of oil and grease
- When necessary, use leather gloves

## ROOF OPERATIONS

- At some locations, a roof work permit may be required. Project Supervisors must check with the designated Customer Representative or the Construction Supervisor/Observer for specific requirements.
- Extension ladders will be secured at all times and extended a minimum of 3' above the roofline.
- Railings will be provided or other equivalent protection will be provided at all roof openings.
- We must comply with 29 CFR 1926.500 Section (g) during the performance of all work on low pitched or flat roofs with a ground to eave height greater than 16' using: safety lines, perimeter setbacks, and/or safety observers.
- Items must not be stored on the roof or dropped from the roof to the ground.
- Roof installations, re-roofing and roof patching operations will only be performed during fair weather, unless emergency wet roof patching is required.

- Roof penetrations can only be made by manufacturer approved roof applicators. To do otherwise could void roof warranty.
- Roof penetrations must be patched using suitable materials as soon as feasible after completing the construction task requiring the penetration. Never leave a roof penetration open to weather over-night or during threat of precipitation.
- Roofing removal must be carefully coordinated with roofing replacement. Only as many squares of roofing should be removed as can be replaced in any given shift.
- All open roofs must be "dried-in" before leaving the facility.
- No roofing removal operation should start unless all necessary roofing materials and equipment are on-site.
- All rooftop utilities (electrical, water, gas, data, etc.) must be identified and tagged before roofing operations can commence.
- Disconnect power to rooftop mechanical units when required. Seal off active rooftop intake units before commencing roofing operations to avoid sucking debris/fumes into occupied areas. Contact facility managers before touching any rooftop equipment.

## STANDARD RAILING

Standard railing should be used to prevent falls. When constructing standard railing, use the following:

- Standard railing should consist of a top rail, an intermediate rail and post, and should be about 42" from the upper surface of the top rail to the floor, platform, runway, or ramp.
- The rail should have a smooth surface through its entire length.
- The intermediate rail should be halfway between the top rail and the floor, platform, runway or ramp.
- The ends of the rails should not overhang terminal posts, except for when an overhang does not pose as a hazard.
- Standard railings should be able to withstand a load of 200 lbs. applied in any direction, except upward, at any point on the top rail.

## WALL OPENINGS

Wall openings are defined as being at least 30" high and 18" wide, the bottoms of which are less than 3' above the working surface and from which there is a drop of more than 4'. Wall openings of this size or greater, should be guarded with a standard railing or screen so that there is no danger of falling. When the bottom of a wall opening is less than 4" from the working surface, a toe board or enclosing screen should be put into place.

Areas where employees are working beneath a wall opening should be protected from falling debris. Scaffolding and passageways below such areas should have overhead protection.

## OPEN-SIDED FLOORS AND PLATFORMS

Platforms and floors of any kind that are 6' or more above the floor or ground level, should be guarded by standard railing on all open sides. However, when there is an entrance to a ramp, stairway, or fixed ladder, a railing is not needed. In areas where people can pass beneath or where equipment is in use, the railing should have a toe-board. Cleats and non-slip surfaces should be installed on floors and platforms.

### RUNWAYS AND RAMPS

All runways and ramps should be guarded by a standard railing on all open sides that are 4' or more above the level beneath it. On exposed sides, toe-board should be used when the ramp is being used for tools, materials, and machine parts.

The width of the runways and ramps should be wide enough for expected use. There should be enough illumination for all employees using the runways and ramps. Also, ramps and runways that are outside should have overhead covering. Cleats and non-slip surfaces should be installed on runways and ramps.

### STAIRS

When stairs have four or more risers, they should be equipped with railings or handrails. A stair railing is similar to standard railing, except the vertical height should be 30"-34" from the upper surface of the top rail to the surface of the tread. A handrail does not have an intermediate rail, but should have a handhold to grasp to avoid falling. When constructing stairways, the following is recommended:

- On stairways less than 44" wide with both sides enclosed, should have at least one handrail on the right side while descending.
- On stairways less than 44" wide and having one side open, at least one stair railing with a handrail should be installed on the open side.
- On stairways 88" or more wide, there should be one handrail on each enclosed side and one stair railing on each open side with an intermediate stair railing at the midpoint of the width.
- Stairways should be installed at angles between 30° and 50° to the horizontal.
- All surfaces of stairs should be adequately illuminated.
- The riser height and tread width should be constant throughout any flight of stairs. The riser height is the vertical distance from the tread of one riser to the tread of the next. The tread width is the horizontal distance from the front of one tread to the front of the next.
- The minimum height of the risers should be 4" and the maximum height should be 7". The tread depth is the horizontal distance from the front of a tread to the back, and the minimum tread depth should be constant through the entire flight.
- Usage of unsafe stairways will not be permitted.

### USE OF LADDERS

All ladders shall meet the requirements of the American National Standards Institute Safety Codes for Ladders.

- Before putting a new ladder in service or before using a ladder, inspect it for defects.
- Do not use a defective ladder. Tag or mark it "DO NOT USE" and return to warehouse for repair.
- Be sure that the ladder feet are on firm level ground. A solid stance is necessary for safe ladder use.
- Be sure that your shoes are not greasy, muddy or slippery before climbing. Also, ensure that the ladder is clean and free of slip hazards.
- Always face the ladder when ascending or descending. Hold on to the side rails with both hands.
- Never place a ladder in front of a door that opens toward the ladder.
- Do not overreach, lean to one side or stand on one foot. You may lose your balance or the ladder may tip. Reposition the ladder close to your work.
- Ladders shall be stored where they will not be exposed to the weather, excessive heat or dampness.
- Ladders should be hung on brackets, against a wall or placed on edge of racks rather than stored flat.

### STEP LADDERS

Stepladders shall always be used in a fully open position. They should not be used as straight ladders. Make sure spreaders are locked and pail shelf in position. No employees shall climb the stepladder higher than the second step from the top. No employee shall stand or sit on the ladder top. You could easily lose your balance or tip the ladder. Only one person should be on the ladder at one time. Most stepladders are designed to hold only one person at a time.

Employees shall not stand or sit on the pail shelf. Stepladders shall not be moved while materials are still on the ladder. Materials may fall and cause injury or damage. Stepladders shall not be moved from one location to another in the fully open position. Stepladders should not be used in the closed position as a straight ladder.

### STRAIGHT LADDERS AND EXTENSION LADDERS

Ladders shall be placed so both rails are fully supported and if possible, be sure ladder extends 3' above the edge of the support. The ladder must be tied or secured at the top as soon as possible after placement. Straight or extension ladders should be placed with the base one-foot out for each four feet of ladder working length. Placement should give you approximately a 70°-75° climbing angle.

**Note:** For a quick estimate, place your toes against the ladder feet; stand erect; extend your arms straight out and your hands should reach, but not go beyond the ladder. Fully engage rung locks before climbing any extension ladder. Do not use an extension ladder in the horizontal position or as a lever. Do not stand past the fourth rung from the top. Always get help with a ladder

that is heavy or awkward. If possible, have a person hold the ladder where you are working on a longer unsecured ladder. All ladders will be used in accordance with CFR 1926.1050, 1926.1051 and 1926.1053.

## SCAFFOLDING

When using scaffolding, the main objectives are:

- Do not let the scaffold fall.
- Don't fall off the scaffold.
- Don't let the material fall off the scaffold.

### TIPS ON SCAFFOLD SAFETY

These tips and suggestions are designed to promote safety in the use of steel scaffolding. They are intended to deal only with some of the many practices and conditions encountered in the use of scaffolding. They do not purport to be all inclusive or to replace other additional safety and precautionary measures to cover usual, or unusual conditions. They are not intended to conflict with, or supersede any OSHA, federal, state, local statutes or regulations.

- **Check Safety Codes:** Check frequently with your local OSHA, state, and local offices for the latest safety code updates. You can also check the AI website at [www.alscaffold.com](http://www.alscaffold.com) for code updates and the latest in scaffold safety tips.
- **Don't Short Change Bracing:** Use bracing at all points provided. Add extra braces if needed to insure stability.
- **Reject Damaged Parts:** Bent or otherwise damaged frames or braces should not be used. Put them aside for replacement or repair.
- **Inclement Weather:** Don't work on scaffolds in bad weather or high winds unless the Competent Person decides it is OK to do so. Platforms should be cleared of ice and snow before being used.
- **Tie Scaffold to the Building:** Scaffolding should be tied to the structure using #9 wire or tie-in devices. The first vertical tie should be at the maximum height of 4 times the narrowest base dimension. Additional ties are not to exceed 26' vertically. Maximum horizontal distance between ties is not to exceed 30'.
- **Intermixing of Components:** Scaffold frames and their components manufactured by different companies shall be not intermixed, unless the component parts readily fit together without force and the Competent Person determines the resulting scaffolding is structurally sound.
- **Personal Safety Equipment:** Anyone working on a scaffold must wear a hard hat and steel toed work boots. Additionally, fall protection systems must be used when requested by the proper authorities. Scaffolding is not designed as an anchor point for fall arrest.
- **Don't Ride a Rolling Scaffold:** Remember that scaffold units are limited in height to 4 times their narrowest base dimension. Always keep casters locked, while on the scaffold.
- **Begin with Good Footings:** Scaffolds must bear on base plates or screw jacks on a mudsill or other adequate firm foundation.
- **Work Practices:** Safe work practice training by a Competent Person must be given to workers who erect, dismantle, move, operate, repair, maintain, inspect, and use scaffolding.
- **Scaffold Training:** Re-training is necessary when workers are exposed to new hazards or conditions on the top of when workers show signs of unsafe work practices.
- **Guardrails:** Top guard rails must be installed between 36" and 45" (if manufactured and placed into service after Jan. 1, 2000, between 38" and 45"). Mid rail is placed halfway in between.
- **Cross Braces:** Cross braces should be not used as a way to climb the scaffold. All braces must be checked for proper engagement onto locks. Cross bracing is acceptable for mid rail if cross point is between 20" and 30" above the work platform. Cross bracing is acceptable for top rail if cross point is between 38" and 45" above the work platform. Cross bracing cannot serve as both.
- **Toe boards:** Debris and rubble should not be allowed to accumulate on the work platform and should be removed as quickly as possible. Additionally, tools and other materials should not be allowed to accumulate. Toe boards should be used to prevent tools and materials from being knocked off the work platform.
- **Work Platforms:** Use metal catwalks or platforms where available. If wood plank is used, it must be scaffold grade or better. Inspect thoroughly before each and every job to make sure it is free from breaks, knots, cracks, or warpage. Decking should be full width.
- **Plank Overlapping:** Plank 10' long or less require a 6" minimum and a 12" maximum overlap. Planks greater than 10' long require a 6" minimum and a 18" maximum overlap.
- **Protect Working Levels:** Use overhead canopies to protect workers on lower work levels when work is being done overhead. Rope off unsafe areas underneath scaffold to provide wire mesh around work area.
- **Proper Usage:** Never use the equipment for purposes other than those recommended.
- **Don't Overload Scaffolding:** Follow the safe load capacities as provided by the manufacturer. There is a limit to even what steel can support. A 4 to 1 safety factor must be calculated and maintained at times on scaffolding.
- **Guyed Scaffolds:** Remember – Slack guys are useless. Overtaut guys are dangerous.
- **Power Lines:** DO NOT use scaffolding where the use can come into contact with live power lines.
- **Inspect & Check:** Take no chances. Inspect the scaffold setup after erection and daily when in use. Don't remove or allow removal of any parts without



the OK from the Competent Person. When wire rope is used, inspect it on each job.

When using scaffolding, first establish a layout. Survey the job site for any hazards that are obvious, then determine the height needed for scaffolding and determine how the corners will be made. It is very important that scaffolding materials are inspected. Any pieces that are damaged or do not fit properly should be discarded.

All scaffolding activity must be done under the supervision of a competent and experienced person.

#### TO ASSEMBLE SCAFFOLDING:

- Set base pads/mudsills, which must be a minimum of 2"x10" or equivalent. Cinder blocks, 2"x4", buckets, rocks, or bricks should never be used.
- Install base plates (rigid or adjustable) on scaffold legs.
- Start base run at high ground and keep base run level.
- Brace all base frames.
- Tie scaffolding to building: 30'.
  - Check to make sure that planking material is scaffold grade only, in good condition, and sized and matched correctly.
  - Planks should extend over end supports from 6-12", unless designed by the scaffold manufacturer to securely fit end-frames. Planks need to overlap each other over the center supports by at least 12".
  - Tie planks together underneath and make sure that working platform is fully planked.
  - Standard guardrails are absolutely required on all open sides and ends of working platforms more than 10' above the ground, and on all open sides and ends of working platforms between 4' and 10' above the ground or floor, and less than 45" wide in either direction.

#### STANDARD GUARDRAILS:

- Top rail 42" high of 2"x4" lumber or equivalent strength
- Mid rail 21" high or 1"x6" lumber or equivalent strength
- Toe board 4" high along top edge of working platform
- Vertical support posts, not more than 8' apart

#### WORKING ON SCAFFOLDING

When working on scaffolding, climb or descend on ladder sections only. **Never** use braces for this purpose. Overhead protection is required for assembly and dismantling of scaffolding, as well as when working on scaffolding or underneath. Always eliminate slippery conditions immediately. Keep scaffolding and surrounding area free of debris and well-organized. Never work on scaffolding during high winds.

#### TRIPS/FALLS

Slipping, tripping and falling hazards represent a high percentage of injuries and recordable accidents in construction operations. The physical characteristics of construction sites present a significant chance of encountering these hazards. Rocky, uneven, or wet terrain is often encountered during all phases of construction.

Methods for reducing and eliminating trip/falls are to wear the proper footwear for the task-at-hand and to use precautions at all times while working in the field. Attention to the environment and surroundings and following the safest path to the destination will also prevent injuries from trip/falls.

#### OPEN WATER, PONDS AND LAGOONS

Drowning is a very realistic danger for employees suited in protective equipment, because the equipment severely impairs swimming ability. Where there is a danger of drowning, provide necessary safety gear such as lifeboats, tag lines, railings, nets, safety harnesses, and flotation gear. These personnel shall be trained in water safety.

#### INCLEMENT WEATHER

Weather conditions at job sites can change drastically in just a short time. High winds, rain, lightning, sleet and snow can occur at any time of year and can cause hazards for construction personnel.

Weather shall be monitored continuously by the Project Supervisor or designee. If conditions are causing safety hazards, all operations shall cease.

#### COMPRESSED GAS CYLINDERS STORING CYLINDERS

- Properly secure cylinders with chains, brackets, or rope to prevent falling.
- Do not store oxygen cylinders within 20' of combustible gas cylinders or near any other substance where a fire could result, unless protected by a wall at least 5' height having a fire resistance rating of at least 30 minutes.
- Store cylinders in a safe, dry, well-ventilated area that limits corrosion damage and deterioration. Hydrotests should be current. Store empty and full cylinders separately, with empty cylinders plainly identified to avoid confusion.

#### HANDLING COMPRESSED GAS CYLINDERS

- Do not move or store cylinders with the valves and gauges attached. Remove the gauges and install the protective cap over the valve.
- Cylinders are smooth, heavy, and difficult to hand carry. When they must be moved without a cart, use a carrier or get help.
- Cylinders moved by a crane or derrick should be secured in a basket or similar device and should not be dropped. Use of slings, ropes or electromagnetics is prohibited.
- Cylinders should not be allowed to strike each other.

- Cylinders should not be used for any purpose other than to contain gas.

#### USING CYLINDERS

- Threads on a regulator or fitting must correspond to those on the cylinder valve outlet. Do not force or modify connections. Fuel gas cylinders are equipped with left-hand thread.
- Never use a cylinder of compressed gas without a pressure-reducing regulator to the cylinder valve, except when the total system is specifically designed to handle maximum cylinder pressure.
- Use regulator and pressure gauges only with gases and pressure rating for which they are designed and intended.
- Always close the cylinder valve before attempting to stop leaks between the cylinder and regulator.
- Never permit sparks, molten metal, electric currents, excessive heat or flames to contact the cylinder or attachments.
- Never use oil or grease as a lubricant on valves or attachments to oxygen cylinders.

#### FIRE PREVENTION GUIDELINES

*Prevention is the best fire protection measure.*

- Keep all structures in which solvents or chemicals are being stored and handled well ventilated at all times.
- Report and repair all hydrocarbon liquid or gas leaks, and remove all sources of ignition immediately. Shutdown engines and other potential sources of ignition, such as pilot lights. Report leaks promptly to the Supervisor in charge. Shut off fuel supply if possible.
- Use gasoline/diesel as an odor fuel only. Using gasoline/diesel as a cleaning agent on site is strictly prohibited.
- Transport gasoline/diesel only in approved, clearly marked containers. Never place gasoline/diesel containers inside car or truck passenger compartments. Never mix gasoline and diesel.
- Store all flammable liquids in secure, locked storage areas.

#### FIRE HYDRANTS

Existing fire hydrants will be protected and kept accessible to emergency vehicles. No storage or parking will be permitted within 15' of fire hydrants. Use the proper five-sided wrench to open and close the hydrant

#### FIRE EXTINGUISHERS

Any operation that will create sparks or flame will be accompanied with at least one hand-operated fire extinguisher and battery operated smoke detector. All pieces of heavy equipment and Company owned trucks located on the job site will have an ABC-type fire extinguisher. The fire extinguisher must be checked at least once a year, by a company trained to do so.

Smoke alarms will be checked weekly and the batteries replaced when the power becomes weak or low.

There are three classes of fire extinguisher used today. Among these are combination fire extinguishers, which can extinguish various types of fires. The following is a description of the three major classes of fire extinguishers:

##### CLASS A:

To be used for fires when wood, paper, trash, or any material with glowing embers are involved.

##### CLASS B:

To be used for fires when flammable liquids, gasoline, oil, paints and garbage are involved.

##### CLASS C:

To be used for fires when electrical equipment is involved.

Class ABC is good for all three classes.

#### FIRE EXTINGUISHER INSPECTION AND MAINTENANCE

Fire extinguishers are an important segment of any fire protection program. Most inspection programs for on site extinguishers will be responsibility of the Contractor. Fire extinguishers should be:

- Accessible
- Properly maintained
- Inspected monthly by trained personnel and documented
- Inspected annually by qualified personnel and documented
- Hydrostatically tested as required

Each employee should know how to identify and report extinguishers that need recharging and/or maintenance.

The Warehouse/Fleet Manager is responsible for inspection and maintenance of fire extinguishers.

#### USE OF FIRE EXTINGUISHERS

In case of fire the following procedures should be used:

- Summon help. Do not fight a fire before alerting someone else.
- Analyze the situation, considering:
  - Threat to life?
  - Damage to public property?
  - Evacuate or is extinguishing the fire possible?
  - Notification and assistance from outside authorities appropriate?
  - Hazardous or toxic chemicals present?
  - Isolate all fuel sources and/or threatened facilities and equipment.
- Fighting a fire in the initial stages is considered incipient fire fighting. **DO NOT FIGHT FIRES BEYOND THE INCIPIENT STAGE.** Such fire fighting should be limited to trained personnel using fire extinguishers and water streams at long range.

- Locate the fire fighting equipment and approach the fire **FROM THE UPWIND SIDE**. In case of a gas fire, extinguish the fire by shutting off the fuel source.
- Aim the extinguisher at the base of the fire and wave the nozzle back and forth.
- Never operate an extinguisher in such a manner that the body is in front of the line of fire.
- After the fire is extinguished, stand by to ensure that there are no flashbacks.
- Assess the damage and fill out necessary reports. Do not discuss the fire with anyone other than your Supervisor or the local Safety Representative. Someone will be specifically assigned to relate the facts of the incident to the news media.

they have the authority to stop work until corrected. *Improvement Required Reports* will be issued to employers found to be out of compliance. In addition, weekly performance scorecards will reflect low safety scoring.

#### EMERGENCY PLAN

The Emergency Plan, including emergency phone numbers and instructions, will be posted at all project offices and at all project job boards. The posted phone numbers must be for emergency response units that have jurisdiction over the geographical area the job is in. These will be the Emergency Medical Services (EMS) which is usually part of the Fire Department, or the nearest hospital capable of handling unexpected injuries to workers.

#### PROTECTION OF THE PUBLIC

Barricades, fencing, warning lights and/or signs will be installed to warn and bar the public from hazards that may occur from time to time on the job, depending upon specific job requirements.

All visitors to a job site will be required to wear a hard hat and safety glasses. A sufficient number of hard hats will be kept in the project field office to accommodate visitors.

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## Subcontractor Participation

Subcontractor Safety Plans are required to comply with the Corporate Safety Plan.

- Subcontractor Representatives may also be required to attend Pre-Construction Meetings and Job Site Safety Meetings.
- Clean-up requirement: Every trade, every job, every day.
- Superintendents will inspect subcontractor's safety practices and issue *Improvement Required (IR) Reports* as required. Superintendents have the authority to stop Subcontractor work until such time as safety corrections are made.

The subcontractor may submit his/her own safety plan for review by the Safety Officer. It will be allowed for use if it complies with the Company plan.

Each subcontractor needs to notify company immediately when an accident occurs, and provide the Safety Officer a copy of the first report of accident form.

All subcontractors need to store their equipment in an organized manner, in an area designated by the Project Supervisor. All debris from his/her work is to be removed in a timely manner.

#### SAFETY ENGINEERING & INSPECTIONS

Each job will be safety engineered by the Project Manager in charge, at least one week before the job commences. Where required, a job-specific Safety Plan will be written by the Project Team and reviewed in the jobs Pre-Start Meeting. The Safety Officer or his Representative and others who have expertise in the type of work being planned will attend. The work plan and safety considerations will be discussed and modified as agreed upon in this meeting. Safety considerations will be a major part of all job-planning discussions.

Company Superintendents conduct Safety and Quality assurance inspections on a random, unannounced basis for the purpose of making safety, quality, production and compliance inspections. If they find a situation of eminent danger or a job out of regulatory compliance,

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## Construction Equipment

#### ELECTRICAL POWER TOOLS

All electrical power operated tools shall be used with extreme caution. Only approved extension cords will be allowed. Approved extension cords shall be of the three-wire type and shall be designed for hard or extra-hard usage. Approved extension cords shall be protected from damage when passing through narrow entryways or other pinch points. All electrical power operated tools shall be properly maintained. Any tool that is not working properly or that develops a defect during use shall immediately be removed from service and not used until properly repaired and tested. The use of GFCI's is encouraged and is mandatory in wet conditions.

#### POWDER-ACTUATED TOOLS

Authorization shall be obtained from the customer's delegated representative prior to any use of powder-actuated tools. Extreme caution will be taken and only qualified and authorized personnel shall use any powder-actuated tools. Powder-actuated tool use requires training. These tools shall only be used when no other tools are available to perform the task successfully. Requirements for the use of powder-actuated tools are listed in 29 CFR 1926.302.

Safety glasses must be used when using powder-actuated tools. In some cases, hearing protection will also be required.

#### HAND TOOLS

All hand tools will be used in a safe and workmanlike manner. Hand tools will be picked up and stored in

appropriate tool storage boxes when not in use. They should be inspected by the user and prepared and maintained as needed.

## HEAVY EQUIPMENT

All heavy equipment will be inspected on a scheduled basis for safety and receive regular maintenance. An *Equipment Safety Inspection and Maintenance Sheets* are kept for each piece of equipment. It has the schedules that will be maintained for each separate piece of equipment. Heavy equipment, operated by qualified operators, will have operational backup alarms and fire extinguishers chosen for the particular piece of equipment.

If the heavy equipment is being driven on a public road, the driver will observe all traffic regulations including the use of seat belts.

## HEAVY EQUIPMENT OPERATION

Construction projects require a variety of heavy equipment. Haul trucks, bulldozers, front-end loaders, backhoes, excavators, and scrapers are some of the heavy equipment that may be present at a construction site, as well as compressors, generators and other miscellaneous smaller items.

Belts, pulleys, sheaves, gears, chains, shafts, clutches, drums, fly wheels, and other reciprocating or rotating parts of equipment pose potential nip or pinch points. Equipment without safety guards or devices shall be removed or made ineffective unless immediate repairs or adjustments have been made, and then only after the power has been shut off. Guards and devices shall be replaced as soon as repairs and adjustments have been completed.

High temperature lines and equipment may endanger employees or create a fire hazard. Exhausts from all equipment powered by internal combustion engines, must be properly located so as not to endanger workers or obstruct the view of the operator.

Platforms, foot walks, steps and ladders used for access to equipment can present slipping and/or falling hazards. Always have three points of contact when climbing on equipment.

Equipment backup, swinging loads, buckets, booms and counterweights pose serious hazards to ground personnel. Eye contact must be made with the operator, who must then stop the equipment to reduce to potential hazard to ground personnel.

Before performing maintenance, equipment shall be set and locked so that it cannot be released, dropped, or activated in any way. Front-end loader buckets shall be lowered to the ground, as well as bulldozer blades; scraper bowls shall be dropped; and crane booms shall be secured against movement.

Refueling gasoline/diesel-operated equipment presents fire hazards if not done properly. Motors must be shut off, no smoking shall be allowed, and proper dispensing equipment must be used to avoid these hazards.

When positioning heavy equipment for work, be aware of body articulation and swing width. Position so that no property damage or personal injury is caused.

Working under equipment can pose a crushing hazard. Equipment suspended in slings or supported by hoists or jacks for repairs must be blocked or cribbed before workers are permitted to work underneath it.

Operators must be aware of overhead power lines when operating heavy equipment. Post warning signs when necessary.

Any piece of equipment can be dangerous if not operated properly. You are responsible for the safe operation of this equipment. The operator must carefully read and follow any warnings, safety signs and instructions provided with or located on the equipment. Do not remove, deface or render inoperable any of the safety devices or warnings on this equipment. If any safety devices or warnings have been removed, defaced or rendered inoperable, **DO NOT USE THE EQUIPMENT!**

## FORKLIFT SAFETY

Only authorized and trained drivers are allowed to operate a forklift. Before operating any forklift, operators shall have read and be familiar with the operator's manual and shall abide by the safety rules and practices. Operators shall also view the Forklift Safety video prior to operation.

Inspect forklift daily to ensure it is in proper working order. Check breaks, secure forks and all other controls before operating. Check fluid levels such as coolant, engine oil, and hydraulic fluid. Inspect for leaks, tire damage, and loose parts. Check capacity rating at the height you intend to reach. All ratings are with the mast in vertical position. **DO NOT OVERLOAD!** Center load on both forks.

Do not start lift from any place other than the operator's position. **Always wear your safety belt!** Do not stop, start or turn abruptly. You may spill the load or tip over the machine. Do not allow anyone under elevated portion of lift, whether loaded or empty. Never drive lift up to someone who is standing in front of a fixed object. Set hand emergency brake when not in motion. Do not rely on choking to prevent movement.

Do not put any part of body between uprights of mast, reach mechanism, or outside operator's compartments. Do not touch, lean on, or reach through mast. Go up or down ramp with the load leaning back on fork assembly. When load is too big to see around safely, carry it in reverse.

Always travel at safe speeds. Make sure work area and travel area are clear of all objects and people. Reduce speed and sound horn at blind intersections and when approaching people. Check clearances of doorways, canopies, and overheads.

Do not operate forklift within 10ft. of high-tension lines up to 50,000 volts. Greater distances required over 50,000 volts. Failure to follow this warning could result in electrocution. Only elevate personnel when you have an approved, securely attached work platform. When personnel are elevated, never tilt mast. Place lift in neutral, set parking brake, and operator must remain at the controls. Never transport or move lift with person on work platforms.

Always wear safety harness and lanyards when working in basket. DO NOT exceed rated capacity of the basket. While traveling, raise load only high enough to clear low obstacles. Travel with the mast tilted back to avoid spilling load. Carry load low for maximum stability.

Do not allow any riders on lift, including forks. When in high range, use two wheel steering only or rollover may occur. Before leaving operators position, stop truck, place in neutral, set parking brake, fully lower load, and turn off engine. Do not remove ROPS or load backrest from machine.

Do not operate on slopes greater than 20° or rollover could occur. Do not refuel indoors or while engine is running. NO SMOKING!!!

Modifications and additions, which affect the capacity and safe operation, shall not be performed by the contractor without the prior written approval from the manufacturer. A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, platform or freight car. Forklifts shall not be used for opening or closing freight doors. Inspect the work area thoroughly for all obstacles, debris, drop-offs, holes, slopes and depressions.

#### **EQUIPMENT LOCKOUT/TAGOUT PROGRAM**

Employees must be protected from unintended machine motion or unintended release of energy which could cause injury when they set up, adjust, repair, service, install or perform maintenance work on equipment, machinery or processes. Compliance with OSHA standards covering lockout/tagout, 29 CFR 1926.417, is absolutely required.

The power source of any equipment, machine or process to be set up, adjusted, repaired, serviced, and installed or where maintenance work is to be performed and unintended motion or release of energy would cause personal injury, shall be locked out by each employee doing the work. Sources of energy, such as springs, air hydraulic and steam shall be evaluated in advance to determine whether to retain or relieve the pressure prior to starting the work.

Safety locks are for the personal protection of the employee and are only to be used for locking out equipment.

Safety locks, equipment locks, adapters and "danger tags" can be obtained from the Warehouse/Fleet Manager or the Safety Officer.

The sole purpose of the equipment lock and adapter is to protect the equipment during periods of time when work has been suspended or interrupted. The equipment locks are not to be used as a substitute for the employee's personal safety lock.

One key for every lock issued shall be retained by the employee of whom it was issued. The Supervisor shall retain the only other key to the lock.

Employees may receive job specific training in general and specific lockout/tagout procedures. Training will be conducted by either an outside vendor, Safety Officer, or others with knowledge and experience.

Overall responsibility for this program is vested with the Safety Officer.

Each Supervisor shall effectively enforce compliance of this lockout procedure including the use of corrective disciplinary action where necessary.

Each Supervisor shall assure that the locks and devices required for compliance with the lockout procedures are provided to their employees.

Prior to setting up, adjusting, repairing, servicing, installing or performing maintenance work on equipment, the Supervisor shall determine and instruct the employees of the steps to be taken to ensure they are not exposed to injury due to unintended machine motion or release of energy.

Employees shall comply with the lockout procedures. Employees shall consult with their Supervisor or other appropriate knowledgeable Management Personnel whenever there are any questions regarding their protection. Employees shall obtain and care for the locks and other devices required to comply with the lockout procedures.

Equipment, machines or processes main disconnect switches shall be turned off and locked in the off position only after the electrical power is shut off at the point of operation control. Failure to follow this procedure may cause arcing, and possibly explosion.

A machine connected to over a 110 volt source or powered by a plug-in cord shall have a locking device applied to the plug attached to the cord leading to the machine to be considered locked out.

A machine connected to a 110 volt source of power by a plug-in cord shall be considered locked out if the worker

is in full control of the cord; the plug is disconnected and tagged with a “Do Not Start” tag, through holes in the flat plug connectors.

After locking out the power source, the employee shall try the equipment, machine or process controls to ensure no unintended motion will occur or test the equipment, machine or process by use of appropriate test equipment to determine that the energy isolation has been effective.

When two or more employees work on the same equipment, each one is responsible for attaching his/her own lock. Safety locks and adapters are to be fixed on levers, switches, valves, etc., in the off position.

An employee who is assigned to a job and upon arrival finds an “equipment lock”, “adapter”, and “danger” tag affixed to the equipment shall affix his/her personal lock to the equipment adapter.

Power may be turned on when it is required to perform tests or adjustments. All of the rules pertaining to removing locks and restoring power shall be followed. The equipment or process shall again be locked out if it is necessary to continue work after completing the test or adjustments. Upon completion of the work, each employee will remove his/her lock, rendering the machine operable when the last lock is removed.

The employee responsible for removing the last lock, before doing so, shall make sure that all guards have been replaced, the equipment, machine or process is cleared for operation, and appropriate personnel notified that power is being restored. This employee is also responsible for removing the equipment lock and returning it to the Supervisor.

When one or more subcontractors and/or owner is required to lockout/tagout the same piece of equipment, each must notify the Supervisor at the site, prior to and upon completion of all work, before the source can be re-energized.

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## Demolition

Before a demolition job can begin, the site must be investigated for possible hazardous substances (asbestos, lead, PCB's, etc.). If discovered then remediation must be performed by qualified/certified employees or subcontractors. If any hazardous materials are found during demolition then stop work and contact your Supervisor. Do not resume work until material testing results are known and hazardous materials are abated.

Workers at the site must always wear Personal Protective Equipment (PPE) including: a hard-hat, eye, hand and hearing protection. The workers may also need other PPE based on any contamination, if any are found in the surveys.

All demolition work will require some form of dust control. In all cases, the dust must be controlled and not allowed to blow off site. Wet the affected areas during demolition and re-wet the entire site at the end of each day.

The demolition work must be organized in a manner that the debris remains on site and under control. If there is **any** chance of the public getting close to the debris pile, it must be fenced in a manner that prevents public exposure to accidents or hazardous materials.

All utilities must be disconnected and capped by qualified individuals prior to demolition.

## PERMITS

Some customers may require a permit for the following:

- Cutting and Welding (hot work)
- Any Open Flame at Hazardous Sites
- Tar Kettles and Roofing Solvents
- Fire Sprinkler/Fire Alarm Work
- Overhead Work
- Confined Space
- Critical Lift
- Excavation

Check with your Customer Representative before performing any of these activities.

## CONCRETE WORK

In working with concrete at job sites, the following must be met.

- Provide signalmen for directing transit mix trucks.
- Clean out concrete trucks only in designated areas.
- Personal Protective Equipment, such as rubber boots and gloves, will be worn while using or working with concrete.
- Relocation of transit mix trucks from job site to job site will be done with chute locked into place and chute extensions removed.

## MOBILE CRANES AND PERSONAL HOISTING DEVICES

Use extreme caution when moving cranes to ensure that there is not contact with aerial power lines.

- Constantly check slings and riggings and immediately remove damaged, worn, or frayed slings and riggings from service and from the customer's property as soon as possible.
- Provide adequate escorts, signal, and flagmen when moving crane equipment.
- Only qualified and licensed operators will operate equipment.
- Inspections will be conducted according to the standards and requirements outlined in OSHA 29 CFR 1926.550, .600, .601 and ANSI B30.5b-certificates as required for cranes and personnel hoisting devices will be available.
- All deficiencies noted during inspections will be corrected before the equipment can be placed into

service. Any structural repairs made to equipment will be done according to manufacturers specifications and the supporting documentation will be readily available upon request.

- Crane operators will be properly trained and experienced with operation of equipment.
- The crane operator will keep records of daily crane checks.
- All rigging of loads shall be done in accordance with OSHA 29 CFR 1926.251 with personnel properly trained in rigging.
- Christmas treeing of loads is prohibited.

## WELDING AND CUTTING

All welding equipment must be inspected prior to each use and repaired if found defective.

Fire prevention is an important part of pre-work planning for cutting and welding. Clear the area of all flammable material for a large distance around the work area. The sparks from flame cutting and welding are white hot, as high as 3,000°. Gasoline can explode at 150° and paper bursts into flames at 800°.

Keep compressed gas tanks vertical at all times. They are to be securely fastened to prevent tipping while in use or being transported. Use chains or tie straps for this purpose. Oxyacetylene equipment will have back flow check valves at the manifolds. Whenever a tank is not in use or is being transported, the protective caps will be screwed in place over the valves.

The following items must be checked before using a cutting torch on a project.

- Prior to mobilizing, the former contents of the pipe need to be ascertained and proof obtained that the pipe is empty. Residue from chemicals that remain inside the pipe could be ignited by the torch and explode. Another potential hazard could be fumes given off by heating the chemical. All efforts should be made to identify the pipe's prior usage and use proper respirator protection, including the possible use of Type C (Supplied Air) equipment.
- Before flame cutting begins, be sure that at least two fire extinguishers and a fire watch helper are located near the area where the work will take place. Protective welding clothing will be worn by the workers involved in the cutting. Gloves, welding goggles, and arm/shoulder coverings will be worn by the person doing the cutting and their helper if he/she is near the fire or sparks.
- Regardless of the distance from ground, pipe must be shored up on both sides of the cut. Construct the shoring with material of sufficient straight to hold up the pipe after it is cut free. Falling pipe can be hazardous.
- Once all precautionary and preparatory measures have been taken, remove or protect any items, which may be ignited from cutting operations.
- After the pipe has been completely cut, the end must be cooled prior to handling and taping. Tape the

rough edges to prevent cuts to the workers that will handle the pipe.

The following is a summary of OSHA Construction Standard 29 CFR 1926.350 and OSHA General Industry Standard 29 CFR 1910.253 governing the use of a cutting torch. Review this before beginning the cutting operation.

- When transporting, moving, or storing the gas cylinders, the valve protection caps shall be in place and secure.
- When moving the cylinders they shall be tilted and rolled on their bottom edge.
- Whenever usage ceases for 15 minutes or more, or when a tank is empty, the valve will be closed.
- The compressed gas cylinders shall be secure in an upright position at all times.
- Cylinders shall be kept away from the actual cutting operation so that sparks, slag or flames do not reach them.
- Cylinders containing oxygen or acetylene or other fuel gases shall not be taken into confined spaces.
- Before the regulator is connected to the cylinder, the valve should be opened slightly and closed immediately. This process is termed "cracking" and is intended to clear the valve of dirt and dust that would otherwise enter the regulator. When this process is being done, the worker should stand to one side and not in the direct line of gas flow.
- When not being used, the manifold and header hose connections shall be capped.
- When parallel sections of the hose are taped together, not more than 4" out of 12" should be covered in tape.
- Boxes used for storing gas hoses shall be ventilated.
- Do not place working hoses in traffic areas.
- Under no condition shall acetylene be used at a pressure in excess of 15psi gauge pressure or 30psi absolute pressure.
- Compressed gas cylinders shall be constructed and maintained in accordance with the regulations of the DOT, 49 CFR Parts 171-179.
- Compressed gas cylinders shall be legibly marked for the purpose of identifying the gas content, with either the chemical or trade name of the gas.
- Compressed gas cylinders shall be equipped with connections complying with the American National Standard Compressed Gas Cylinder Valves. If valves cannot be opened by hand, the supplier shall be notified.
- Before a regulator is removed from the cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.

## CONCLUSION

In addition to the above-mentioned general precautions, a Hazard Analysis of any work may be requested at anytime by any employee or subcontractor. A combination of safety engineering and a hazard analysis meeting will then be held under the direction of the Safety Officer. All employees, Supervisors, and

subcontractors' personnel involved will attend the meeting. This sequence will be followed prior to the commencement of said work.

**Keep in mind that safety comes first at all times.**

Employees and subcontractors should practice common sense and avoid situations that could prove hazardous.



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## Safety Incentive Program

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### APPLIES TO

Safety incentives will be paid in the following employee classifications:

- All hourly Tradesmen, Laborers, Abatement Workers, Warehousemen, Mechanics and Welders.
- All salaried Field Supervisors and Project Managers.

Safety Incentives will NOT be paid to the following employee classifications:

- President
- Office, Marketing, and Design Personnel
- Temp Workers

### OBJECTIVE

The Safety Incentive Program promotes and rewards safety by rewarding employees with a cash reward every month that the Company meets its safety goals of zero accidents.

### DESCRIPTION

Each eligible employee will receive a \$30.00 per month incentive payment if there are no incidents, injuries or accidents reported to Human Resources in that particular month. The monthly incentive payment amount will be reviewed and renegotiated as required.

- If there is a reportable incident during the month, then no employee will receive an incentive payment.
- The employee must be at the Company's monthly meeting to receive an incentive payment. Each employee at the meeting will sign on the incentive award. If not present, the employee must have authorization from the President to receive the incentive payment at a later date.
- The incentive payment will be paid out in cash. The Comptroller will have enough cash on -hand for the monthly meeting and supply the sign out sheets.
- Human Resources will be responsible for compiling all accident information and coordinating with the President and Comptroller on incentive payments before the meetings.
- A reportable incident, injury or accident is any incident in which an employee has to leave the jobsite to receive any type of medical treatment, perform and drug-alcohol test or take time off from a job for any medical or accident related incident. Minor first aid accidents should be reported but will not be held against the

**Company's incentive record.** The President and/or the Corporate Safety Director will be responsible for reviewing and determining incentive payments for any controversial incidents on a case-by-case basis.