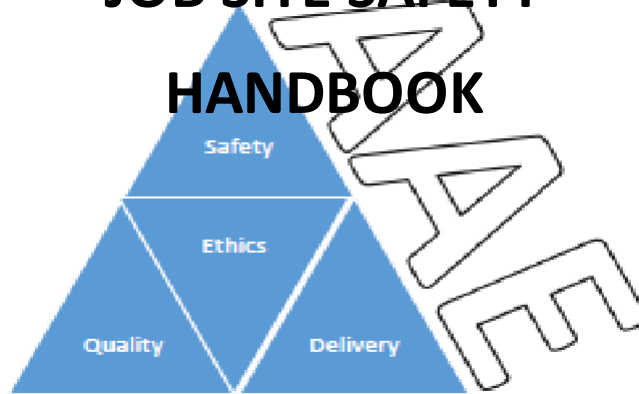


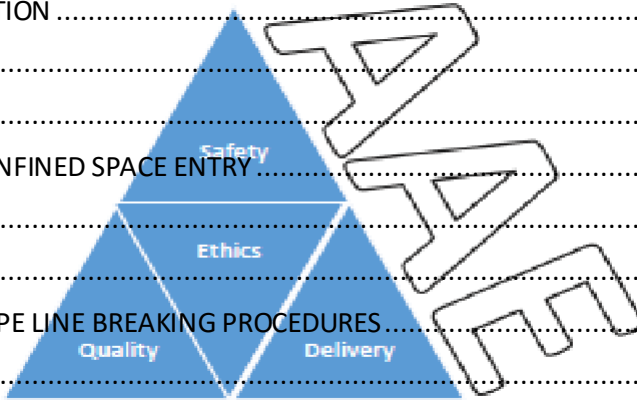
**AAE**

**JOB SITE SAFETY  
HANDBOOK**

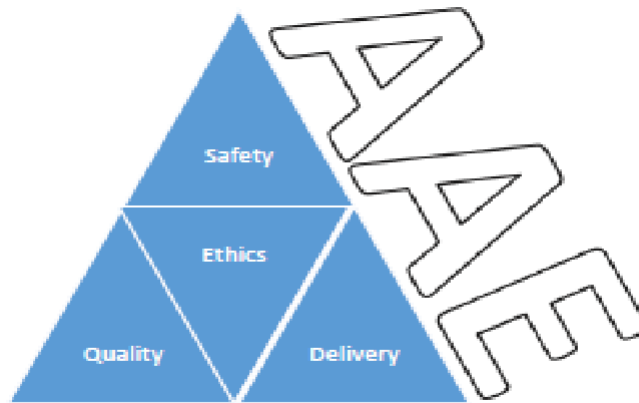


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## JOB SITE SAFETY HANDBOOK

### PREFACE

This Job Site Safety Handbook has been developed for the purpose of communicating the requirements for safe work expected of all AAEG's Employees and its subcontractor's Employees while performing work at any Job Site of AAEG

This handbook is intended to be used as a source of reference for guidance in conforming to environmental, safety and health requirements and established safe work practices. A detailed company safety manual is available for review by contacting the AAEG Branch Safety Office responsible for your specific Job Site. It is not intended that this handbook be used as an all-inclusive manual of environmental, safety and health rules and regulations. It is not a substitute for good, sound judgment and common sense - the basis for effective, safe work habits.

Your individual participation in our Safety Program is more important to AAEG as your job skills. You must dedicate your efforts to perform safely. All Employees, contract Employees and sub Employees are required to comply with all environmental, safety and health standards while visiting or performing on-site work, including the following:

- All applicable rules and regulations of the Environmental Protection Agency, the Occupational Safety and Health Administration and any other applicable regulatory governing bodies;
- All federal, state, and local laws, rules and regulations;
- All AAEG Corporate and Job Site environmental, safety and health policies and procedures;
- Any other applicable environmental, safety and health policies and procedures.

Every Job Site should be continually analyzed to identify recognizable potential hazards. Where practicable, engineering controls shall be utilized to minimize such hazards. Where engineering controls are not feasible or otherwise deemed to be impracticable, sufficient forms of personal protective equipment shall be utilized and work practices modified to safely perform assigned tasks. Strict adherence to Job Site policies, procedures, rules and work practices on each and every job is required.

## GENERAL RESPONSIBILITIES

Every individual, whether an AAEG Employee, contract Employee, sub Employee, vendor or visitor has a duty to conduct themselves in an orderly and sensible manner. You are to safely perform all work assignments by following established safe work practices and utilizing appropriate personal protective equipment. You are to select the proper tools and safety equipment necessary to properly perform the job to which you were assigned. Tools and equipment are to be maintained in a clean, safe, and reliable operating condition and are to be used in a manner consistent with their intended purposes. Each worker is responsible for keeping the work area clean and uncluttered. Stay aware of your surroundings and report any unsafe act or condition to your supervisor or an AAEG representative immediately. Above all, perform your work assignments in a safe and sensible manner, keeping your safety and the safety of those around you foremost in your thoughts.

## JOB SITE'S RESPONSIBILITIES

AAEG will maintain a program that provides systematic policies, procedures, and practices that, when followed, will serve to protect its Employees from, and allow them to recognize, job-related safety and health hazards. The program includes provisions to identify, evaluate, and prevent or control general workplace hazards, specific job hazards, and potential hazards that may arise from foreseeable conditions. Although compliance with the law is an objective, the program will look beyond the specific requirements of law to address all identifiable hazards. Our goal is the prevention of injuries and illnesses, whether or not compliance is at issue.

AAEG will continually obtain and evaluate information regarding its safety performances and programs. We will use this information to accomplish desired job tasks without compromising the safety and health of its Employees and anyone else in its work area.

AAEG will provide a site-specific safety orientation to its Employees and subcontractor's Employees before they are allowed to commence work. This orientation will include site-specific information such as:

1. Specific Client and AAEG Job Site Safety Policies and Procedures including;
2. Information about the potential for fire, explosion, or toxic release;
3. Chemical hazards related to the specific facility, work and processes;
4. The location of information pertaining to site-specific hazards (MSDS);
5. Job Site requirements for personal protective equipment and safety devices;
6. Information about the alarm signals and what they mean;
7. Directions for proper Employee responses to alarms and emergency signals;

8. Emergency evacuation procedures, safe refuge and reporting requirements;
9. On-site contacts, their names and where they can be found; and
10. The location of the nearest available medical clinic.

## EMPLOYEE'S RESPONSIBILITIES

The term "Employees" as referred to in this handbook refers collectively to all AAEG Employees, its contractors, subcontractors, and their Employees working at the Job Site.

All Employees must ensure that they are properly trained to safely and proficiently perform the task to which they are assigned. If in doubt, notify your supervisor to obtain the required training before attempting to perform any questionable tasks. Information relative to the known potential of fire, explosion, or toxic release hazards related to the type of work the Employee is expected to perform will also be communicated to the Employee.

Each Employee must advise the Job Site Safety Coordinator of any observed potential hazards while at the Job Site.

AAEG or its client will provide MSDS on all chemicals or other potentially hazardous materials to be used by the Employee while working at the Job Site.

The Employee must ensure that it complies with all standards and governmental regulations pertaining to the work being performed. AAEG will provide access to written procedures and other applicable governmental rules and regulations associated with Employee's work.

Each Employee is responsible for ensuring that they follow both the safety rules and regulations of the AAEG Job Site and other applicable safety rules. A Job Site Safety Coordinator will be designated to work with its crew(s) while working at the Job Site. The Job Site Safety Coordinator may be a member of the work crew, such as the supervisor or other person working at the Job Site. Weekly tool-box safety meetings will be conducted for all of Employees while working at the Job Site.

**JOB SITE SAFETY COORDINATOR**

The Job Site Safety Coordinator must establish a working relationship and maintain contact with members of AAEG’s Job Site team and the client’s assigned Contract Coordinator.

The Job Site Safety Coordinator must be aware of potential hazards and the steps taken or to be taken to mitigate such hazards. They must ensure that appropriate personal protective equipment is available and utilized and that work practices be modified, where necessary, to protect Employees.

The Job Site Safety Coordinator must also ensure that Employees comply with applicable safety and health rules and regulations and conduct weekly toolbox safety meetings for Employees.

The Job Site Safety Coordinator must notify the Responsible AAEG Branch Safety Officer in the event of injury to any person at the Job Site and prepare and submit an incident report or other appropriate documentation to the AAEG Safety Department. The Job Site Safety Coordinator may be requested to participate in any incident investigations required.

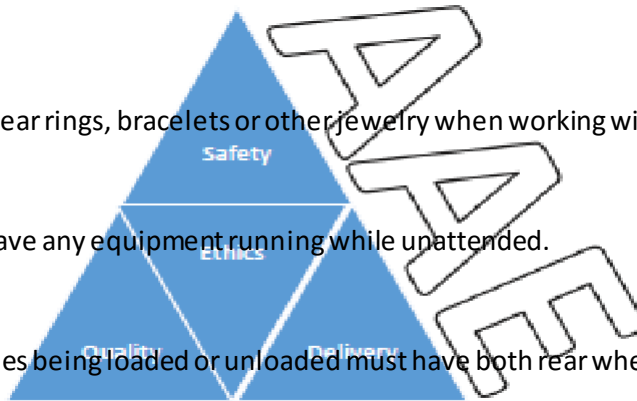
**GENERAL SAFETY PRACTICES**

The following includes, but is not limited to, General Safety Practices which must be followed by all personnel working at an AAEG Job Site:

1. Safety Showers and Eye Wash Stations are located in strategic areas throughout the Job Site. Locate the one nearest your work station and familiarize yourself with its operation.
2. Never hesitate to caution someone else when they are in danger of injuring themselves or others.
3. Do not work with defective equipment.
4. Walk; do not run unless you are in danger.
5. Do not work or pass under cranes, hoists, and suspended loads.
6. Hold onto hand rails while ascending or descending stairs.

7. Do not jump from one level to another, use a stairway or ladder.
8. Do not enter into an operating area unless your assigned duties necessitate your being there.
9. Do not take short cuts through any process units, always use aisles and walkways.
10. Walk on the left side of the road, facing oncoming vehicles.
11. Do not wear loose clothing or any apparel that can become caught on or in moving equipment.

12. Do not wear rings, bracelets or other jewelry when working with machinery.
13. Never leave any equipment running while unattended.
14. All vehicles being loaded or unloaded must have both rear wheels chocked.



15. While parked, all trailers must have wheels chocked or a parking brake engaged.
  16. Everyone shall report any Fire Fighting Equipment deficiencies discovered to the Job Site Safety Coordinator.
  17. Firefighting equipment shall be used for its intended purpose only.
  18. Easy access to firefighting equipment must be maintained at all times.
- Do not block or otherwise hinder access to any emergency equipment at the Job Site.



19. AAEG’s Subcontractors are responsible for providing first aid to their Employees but all Job Site personnel shall assist as much as possible in an emergency.

**SPECIFIC SAFETY RULES AND PROCEDURES**

**SMOKING**

**A. Prohibitions**

1. Smoking is prohibited in all buildings, including offices, hallways, restrooms, photocopying rooms, computer rooms, file rooms, the cafeteria, and break rooms.
2. Smoking is prohibited in those areas of the Job Site where smoke, flame, etc. might be physically hazardous, such as in and around the process units and tank farms.

**B. Designated Smoking Areas**

1. Employees are allowed to smoke only in designated “Employee and Contractor Smoking Areas.” These areas shall be clearly designated as smoking areas. Different Job Sites have different requirements; any applicable site regulations must be followed.

If in doubt – DON’T SMOKE!



**DRUGS, ALCOHOL AND CONTRABAND**

**A. Prohibitions**

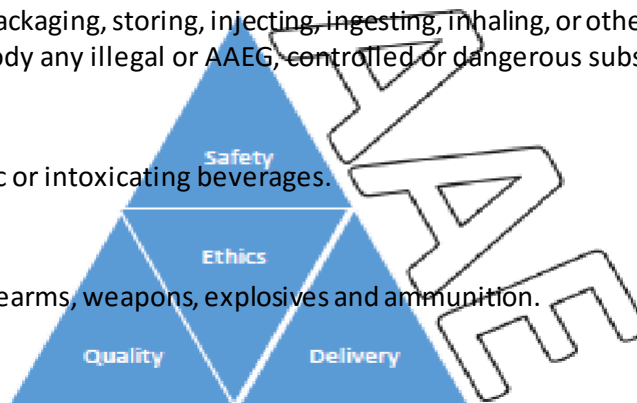
1. The possession, use and/or sale of any of the following items by any individuals while on AAEG Job Site premises is strictly prohibited:
  - a. Illegal or AAEG drugs (including excessive quantities of prescription or over-the-counter drugs) and any other chemical substances which may affect one’s mood, senses, responses, motor functions or alter or affect a person’s perception, performance, judgment, reactions or senses while working.

- b. Prescription or over-the-counter drugs which may adversely influence performance or behavior when taken in prescribed quantities, except under the following conditions:
  - 1) When the Employee has informed his/her supervisor prior to working under the influence of or using such drugs or medication on the job.
  - 2) The prescription drugs are in the original vials, are labeled with Employee's name, the physician's name, prescription number and date of issuance, which should be within one (1) year from the current date, and the physician has indicated that the Employee may work under the influence of such drugs or medication.

c. Drug-related Paraphernalia – any material or equipment used or designed for use in testing, packaging, storing, injecting, ingesting, inhaling, or otherwise introducing into the human body any illegal or AAEG, controlled or dangerous substances.

d. Alcoholic or intoxicating beverages.

e. AAEG firearms, weapons, explosives and ammunition.



2. Reporting to work or working under the influence of detectable levels of AAEG or illegal drugs and/or alcoholic beverages is strictly prohibited.

**B. Enforcement Activities**

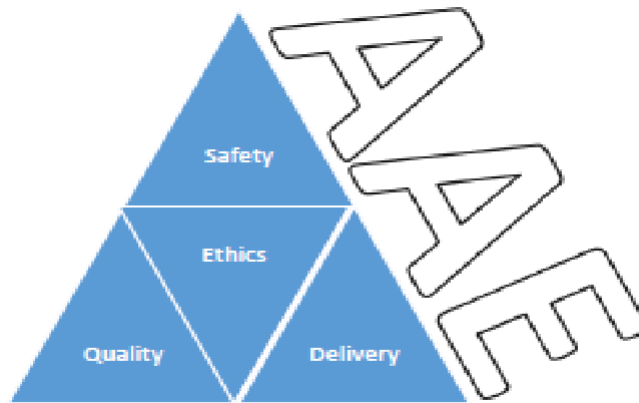
All AAEG Employees, subcontractor Employees and visitors to the Job Site shall comply with this requirement related to Drugs, Alcohol, and Contraband Use. Non-compliance can result in immediate termination of employment and removal from the site for all violators.

**C. Consent**

A person's entry onto AAEG Job Site premises shall constitute his/her recognition and consent of this policy on Drugs, Alcohol, and Contraband Use.

D. Violations

Violations of this policy will result in immediate removal from AAEG Job Site premises. Further, the violation of this policy by any of Subcontractor's Employees shall also constitute cause for cancellation of the Contract between AAEG and such Subcontractor.



**EMPLOYEE ENTRY/EXIT TO THE JOB SITE**

**i. Employee Safety Training**

1. If Special Training is required for the work assignment of the Employee must provide proof of their participation in and successful completion of an approved Safety Training Program for associated special hazardous of the work assignment.
  
2. Special Safety Basic Training must be obtained from a recognized Course Provider with proper documentation provided to the Job Site Safety Coordinator before work begins.
  - a. Proof of attendance may be in the form of a course completion card or written certification from Course Provider.

**ii. Safety Orientations**

1. Prior to the commencement of work activities all Employees and subcontractor’s Employees must participate in a Job Site Safety Orientation. The manager assigning the Employee or subcontractor to the Job Site will make arrangements with the Job Site Safety Coordinator to conduct a Safety Orientation.
  
2. As a minimum, the Employee will be instructed as to his/her responsibilities relating to the following:
  - a. Known potential for fire, explosion or toxic release hazards and actions required in an emergency.
  - b. Job Site Hazard Communication Systems
  - c. Personal Protective Equipment Required by Employee
  - d. Personal Protective Equipment provided by “Others”
  - e. Location of Safety Supplies, Equipment and Reference Documents

3. The Job Site Contract Coordinator will advise the Client’s Safety Department of the names and number of Employees and the nature of the work to be performed, and the anticipated length of the assignment.
  
4. Any other general or Job Site Rules and Regulations.
  
5. The Job Site Safety Coordinator will assign to each participant an ID number and issue an ID badge certifying that required Job Site training has been completed.

**iii. Entry**

1. All Employees must have their ID badges and log in upon arrival at the Job Site.

2. If an Employee has lost or misplaced their badge, that Employee will be directed to the Job Site Safety Coordinator for a replacement badge.

3. The Job Site Safety Coordinator will determine whether the Employee has previously participated in a Safety Orientation and if a badge and ID number has been assigned to that person.



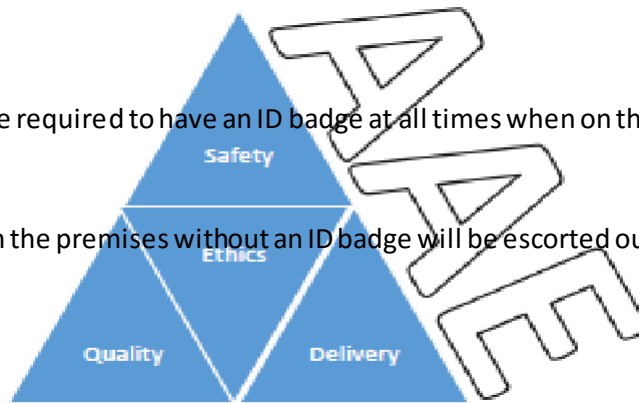
- a. If not, the Employee will be required to participate in a Safety Orientation, after which, the requisite ID numbers, badges, etc. will be assigned.
  
- b. If the Employee has participated in the current year’s Safety Orientation from a prior assignment at the Job Site, the Employee will be issued a new ID number and badge, good for the duration of the current assignment.
  
- c. If the Employee has simply lost the ID badge or didn’t turn it in the night before, the Employee will be required to pay for a replacement badge.

**iv. Presence**

1. All Employees are required to report to their supervisors as they arrive at their assigned work area.
2. If required, the Job Site Supervisor or their designee will sign in at the Client’s Control Room indicating the supervisor’s name, the Employee’s name, the number in the work crew, the area in which work is to be done, and the time in.
3. All Employees must remain at their assigned worksite, except for lunch and other breaks. No one is allowed to roam around the Job Site.
4. When needed, Employees may utilize the designated smoking areas, designated sanitation areas and restrooms.

5. All Employees are required to have an ID badge at all times when on the Job Site.
6. Anyone found on the premises without an ID badge will be escorted out of the Job Site.

**v. Exit**



1. All Employees shall log out upon leaving the Job Site.
2. The job Site Supervisor shall verify that everyone has logged out and is no longer in the Job Site at the end of work.

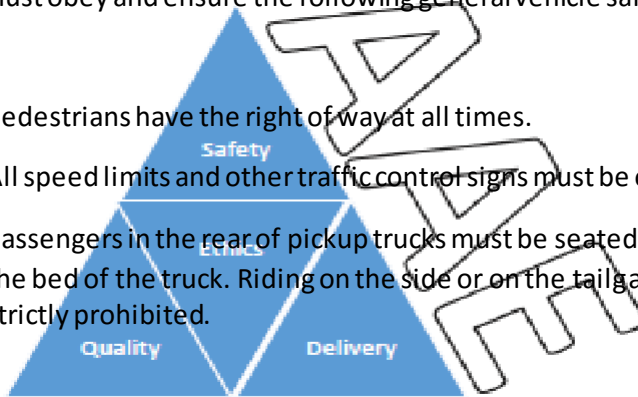
**vi. Final Exit upon Job Completion**

When the job is completed, the crew’s supervisor or other designated representative must collect all Job Site ID badges and return them to the Job Site Safety Coordinator.

**vii. Vehicle Entry**

1. All drivers must stop at the Job Site Guard House and login as required.
2. Only necessary work vehicles (used to carry equipment and/or personnel) should be taken inside the Job Site gates.
3. All non-essential vehicles should be parked outside the Job Site in designated parking areas.
4. All occupants of the vehicle must be logged in before the vehicle enters the Job Site.
5. Drivers must obey and ensure the following general vehicle safety rules:

- a. Pedestrians have the right of way at all times.
- b. All speed limits and other traffic control signs must be obeyed.
- c. Passengers in the rear of pickup trucks must be seated within the confines of the bed of the truck. Riding on the side or on the tailgate of a pickup truck is strictly prohibited.



6. When leaving a vehicle unattended, the ignition must be shut off and the key left in the ignition.

## PERSONAL PROTECTIVE EQUIPMENT

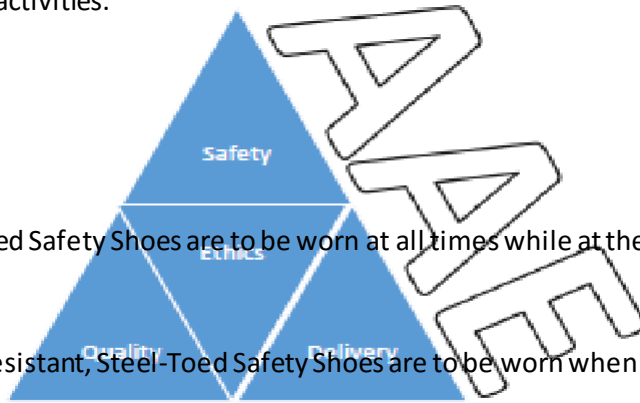
### A. Eye and Face Protection

1. Safety Glasses are to be worn at all times while at the Job Site.
2. Safety Goggles are to be worn anytime there are flying particles, sparks, noxious gases, liquid splashes or other type eye hazards present.

3. Face Shields, in addition to Safety Glasses and/or Goggles, are required when working with:
  - a. wire brush wheels
  - b. grinding stones
  - c. welding
  - d. woodworking machines
  - e. Acids, alkalis, etc.
  - f. Any other activities that could produce splash hazards.
  
4. Suitable welder’s goggles and properly shaded face shields shall be wore during all welding activities.

**B. Foot Protection**

1. Steel-Toed Safety Shoes are to be worn at all times while at the Job Site.
2. Shock-Resistant, Steel-Toed Safety Shoes are to be worn when electrical shock hazards exist.
3. Chemical Resistant, Steel-Toed Safety Shoes are to be worn when working with acids, alkalis, or other corrosive liquids.



**C. Hand Protection**

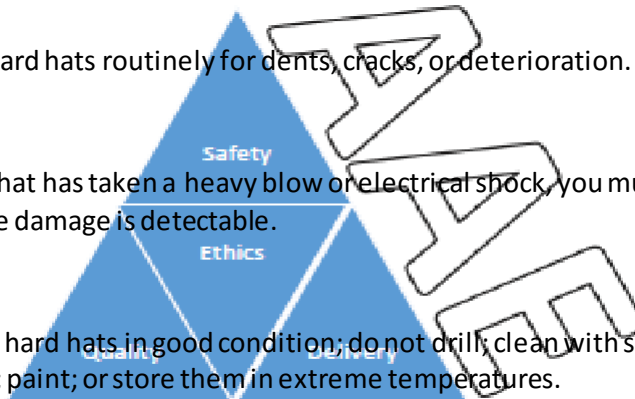
1. General purpose gloves will be worn when performing general job site type work to protect the hands from injury.
2. High-quality gloves should be used to lessen the possibility of injury.



3. Gloves should fit snugly.
4. Glove gauntlets should be taped for working with fiberglass materials.
5. Workers should always wear the right gloves for the job (for example, heavy-duty rubber for concrete work, welding gloves for welding, etc.).

#### **D. Head Protection**

1. Workers must wear hard hats when overhead, falling, or flying hazards exist or when danger of electrical shock is present.
2. Inspect hard hats routinely for dents, cracks, or deterioration.
3. If a hard hat has taken a heavy blow or electrical shock, you must replace it even when no visible damage is detectable.
4. Maintain hard hats in good condition; do not drill; clean with strong detergents or solvents; paint; or store them in extreme temperatures.



#### **E. Fall Protection**

1. Lifelines, safety belts, and lanyards shall be used when a fall hazard exists of a fall greater than 6 feet.
2. Any lifeline, safety belt, or lanyard actually subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for worker safeguarding.
3. Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds.

4. Lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5,400 pounds, shall be used.
5. Safety belt lanyard shall be a minimum of 1/2-inch nylon, or equivalent, with a maximum length to provide for a fall of no greater than 6 feet. The rope shall have a nominal breaking strength of 5,400 pounds.
6. All safety belt and lanyard hardware shall be drop forged or pressed steel, cadmium plated in accordance with type 1, Class B plating specified in Federal Specification QQ-P-416. Surface shall be smooth and free of sharp edges.
7. All safety belt and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking or breaking.

HAIR

A. Hair Length

1. Employees working around rotating parts and shafts, such as stock projecting from the chuck of a lathe, shall maintain their hair in a manner so that the hair cannot be caught by the machinery and draw the operator in. This can seriously mangle or crush the operator.
2. Hair should not protrude over one's eyes or otherwise obstruct vision.

B. Facial Hair

1. If an Employee is required to work in an area that could require the use of a respirator, Employee's facial hair (e.g. beards, sideburns, mustaches, etc.) shall not interfere with the face-to-respirator seal or valve function of a respirator.
2. All AAEG Employees and subcontractor's Employees shall be required to shave any facial hair required to meet established Job Site requirements.

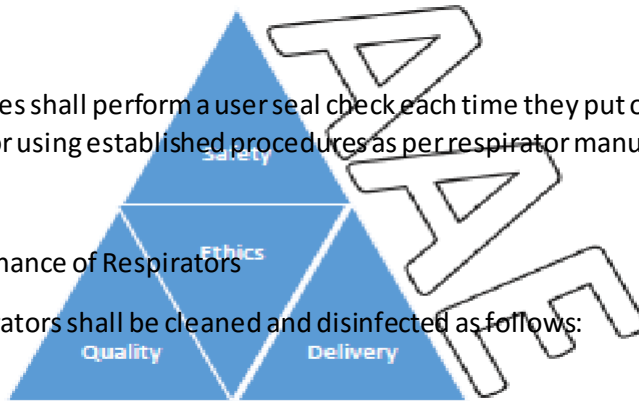
**RESPIRATORY PROTECTION**

**A. General Use and Training**

1. If an Employee is required to work in an area that could require the use of a respirator the Employee shall be properly trained and tested for the type of respirator to be used.
2. Tight-fitting respirators shall not be worn by employees who have facial hair or any condition that interferes with the face-to-respirator seal or valve function.
3. Personal protective equipment shall be worn in such a manner that does not interfere with the seal of the sealing of the respirator to the face.
4. Employees shall perform a user seal check each time they put on a tight-fitting respirator using established procedures as per respirator manufacturer's procedures.

**B. Care and Maintenance of Respirators**

1. All respirators shall be cleaned and disinfected as follows:
  - a. As often as necessary to maintain a sanitary condition for exclusive-use respirators
  - b. Before being worn by different individuals when issued to more than one employee
  - c. After each use for emergency use respirators and those used in fit testing and training



## HEARING PROTECTION

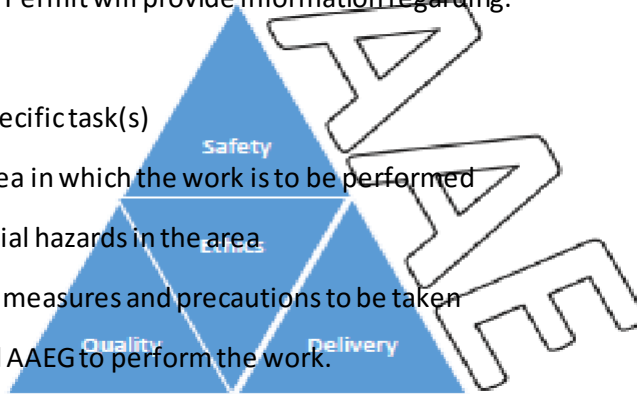
All Employees entering any area that has been identified and is posted as a high noise area must use suitable hearing protection. Exposing the ear to high levels of noise may cause hearing loss. Ear plugs and other hearing protection devices are available for employees working in a high noise area. Use only approved plugs and replace or clean daily to prevent ear infections.

## SAFE WORK PERMITS

### A. Issuance

1. A Safe Work Permit can only be issued by someone AAEG by the Owner and AAEG.
2. The Safe Work Permit will provide information regarding:

- a. The specific task(s)
- b. The area in which the work is to be performed
- c. Potential hazards in the area
- d. Safety measures and precautions to be taken
- e. Signed AAEG to perform the work.



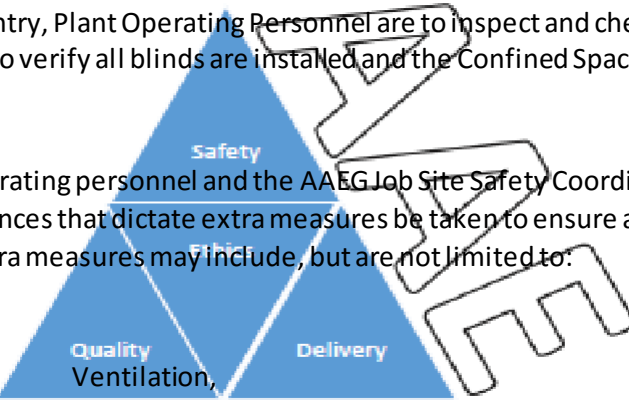
3. If the work requested is to be performed in Process Areas:
  - a. Upon arrival the Work Crew Foreman shall present this Safe Work Permit to the Unit Operator.
  - b. The Unit Operator will review the permit and add additional conditions if needed.
4. The Work Crew Foreman will review the contents of the permit with the crew prior to the commencement of work.
5. The Permit must be maintained at the jobsite until the job is finished and the permit is returned to the person issuing the Safe Work Permit.

## PERMIT-REQUIRED CONFINED SPACE ENTRY

### A. General

A Permit-Required Confined Space will be clearly identified as such. It includes any tank, vessel, pit, ditch, sewer or other enclosed structure which, by design, has limited opening for entry and exit or where there may be unfavorable natural ventilation which might render the atmosphere of the space flammable, toxic, or oxygen deficient.

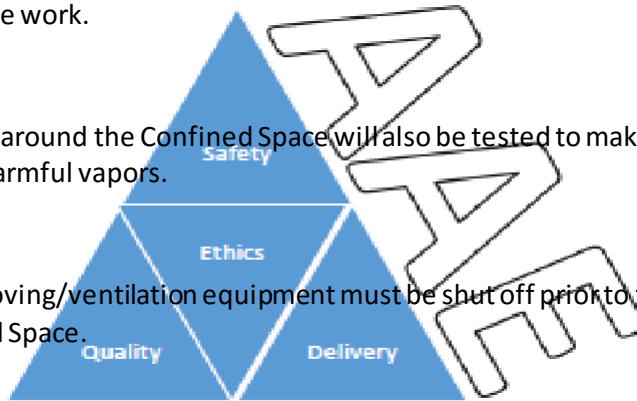
### B. Equipment Preparation

1. Prior to entry, Plant Operating Personnel are to inspect and check the blinds against the blind list to verify all blinds are installed and the Confined Space is indeed isolated.
2. Plant Operating personnel and the AAEG Job Site Safety Coordinator will identify any circumstances that dictate extra measures be taken to ensure a safe work condition. These extra measures may include, but are not limited to:
  - a.  Ventilation,
  - b. Lighting & Electrical requirements,
  - c. Special Equipment & Tools,
  - d. Hot Work requirements, etc.
3. Forced ventilation (fans, air movers, air horns, etc.) shall be used when the Confined Space work requires any type of Hot work or if there is a possibility of irritants or toxic atmospheres during the work.
4. Forced ventilation should also be used to minimize heat if conditions warrant.

5. Any temporary lighting used in a Confined Space area shall be rated for type of area. Typically vapor proof and explosion proof 12 volt lights with heavy duty cords and insulation shall be used.
6. Feeders supplying 110 volt temporary lighting being used in the Confined Space must be protected by a ground fault interrupter located outside the Confined Space.
7. Portable electric tools must either have a three-wire cord with ground and be grounded or be double insulated and protected by a ground fault interrupter.
8. Cylinders of compressed gas, except self-contained breathing apparatus cylinders, shall never be taken into a Confined Space. Oxygen and acetylene lines used by welders shall not be left unattended in a Confined Space and compressed gas cylinder valves must be closed and disconnected when not in use.
9. Any hot work (welding, cutting, burning, sandblasting, use of electrical tools, or air tools, grinder, gouger, etc.) to be done in a Confined Space must be permitted by obtaining a Hot Work Permit to do such work.
10. A safe means of ingress and egress (such as portable ladders, hoists, permanent ladders, etc.) must be in place at all times.
- 11.

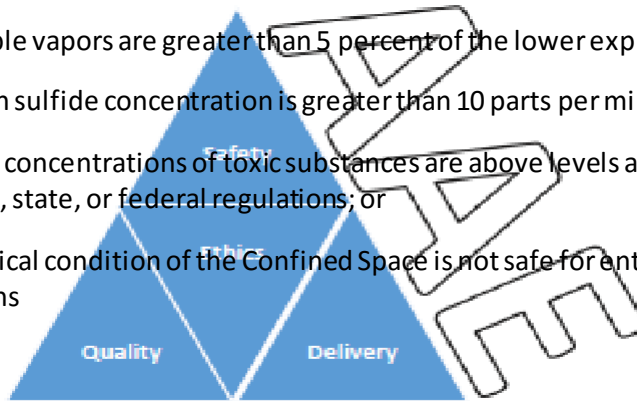
C. Confined Space Atmospheric Testing

1. All Confined Spaces can present hazards such as fires and explosions, oxygen deficiency, toxic liquids, vapors, dusts, and other hazards during work. Everyone associated with the Confined Space work site must be fully familiar with these hazards and with the methods of controlling them.
2. Plant Operating personnel and the AAEG Job Site Safety Coordinator will identify all recognizable potential sources of physical and health hazards such as hydrocarbons, hydrogen sulfide, oxygen deficiency, heat, etc. when planning the work.
3. The Confined Space Atmosphere shall be properly tested if there is any chance that the air can become oxygen deficient or if harmful vapors may be present or produced during the work.
4. The area around the Confined Space will also be tested to make sure that the area is free of harmful vapors.
5. All air moving/ventilation equipment must be shut off prior to testing the inside of the Confined Space.
6. All testing will be done by certified personnel.
7. To the extent practicable, tests for initial safe entry will be conducted from outside of the Confined Space. When these tests cannot be made from outside of the Confined Space, safe entry and rescue procedures will be established prior to anyone entering the Confined Space.



D. Hazard Assessment

1. After the Confined Space has been tested for oxygen content, flammable vapors, and toxic substances, as discussed above, and after the physical condition of the Confined Space has been assessed, entry conditions will be noted on the Confined Space Entry Permit.
2. All open Confined Spaces will have a sign posted at its entrance(s) at all times indicating whether entry is permitted or if entry is approved and the conditions for which entry is permitted.
3. Confined Space entry is generally prohibited if any of the following conditions exist:
  - a. Oxygen content is less than 19.5 percent or above 23.5 percent;
  - b. Flammable vapors are greater than 5 percent of the lower explosive limit;
  - c. Hydrogen sulfide concentration is greater than 10 parts per million;
  - d. Airborne concentrations of toxic substances are above levels acceptable to the Job Site and local, state, or federal regulations; or
  - e. The physical condition of the Confined Space is not safe for entry based on any other conditions



E. The Permit-Required Confined Space Entry Permit

1. Once the Permit-Required Confined Space is tested and approved for safe entry, the Plant Operating personnel and the AAEG Job Site Safety Coordinator will prepare and sign the Permit Required Confined Space Entry Permit.
2. The Confined Space Entry Permit should include, at a minimum the following:
  - a. The identification of the Confined Space to be entered;
  - b. The purpose of the entry;
  - c. Date and duration of the permit;
  - d. Identifiable hazards of the Confined Space;
  - e. The measures taken to control the identifiable hazards;



- f. Personal protective equipment and clothing requirements;
  - g. Conditions of the Confined Space when approved for entry;
  - h. The name(s) of the Confined Space Attendant(s);
  - i. The name(s) of AAEG Entrant(s) currently in the confined space;
  - j. Communication procedures to be used between AAEG Entrants and the Confined Space Attendant; and
  - k. Special conditions/other requirements.
3. Prior to entry, the work crew leader will review with Plant Operating personnel and the AAEG Job Site Safety Coordinator and sign the permit as the Work Crew Leader.
  4. The Plant Operating personnel and the AAEG Job Site Safety Coordinator will place their initials on the Permit, next to the Work Crew Leader, confirming that safety review of the hazards and conditions has been conducted.
  5. The completed permit will be hung in a prominent location at or near the entrance to the Confined Space.
  6. The Confined Space Entry Permit will be valid for an operations shift. In the event work spans more than one operations shift, new Plant Operating personnel and the AAEG Job Site Safety Coordinator will validate the existing permit within one hour and assume the role of the Entry Supervisor while work continues on the project. All new shift personnel will be given the same briefing and instructions as the original personnel.
  7. Any unusual circumstances or change of conditions, such as a hydrocarbon spill or gas releases in the area of the permitted Confined Space, shall void the permit and all persons must be removed from the Confined Space as quickly as possible, until such time as a new permit can issued using the above procedures.
  8. To facilitate non-entry rescue, retrieval systems must be used whenever anyone enters a confined space, unless the retrieval equipment would increase the overall risk of the entry or would not contribute to the rescue of the entrant.

9. A properly trained safety watch, or Confined Space Attendant, must be posted at the entrance to any Confined Space when persons are in the Confined Space. The safety watch should maintain communication with those in the Confined Space by signal, voice or others. The attendant must also have an air horn or Job Site radio or other communication device to sound an alarm in case of an emergency situation.
10. The Confined Space Attendant can attempt rescue from outside the Confined Space but shall not enter until after assistance has arrived.
11. The Confined Space Attendant must monitor the supplied-air respirator equipment (bottle or compressor) to be sure that there is an adequate supply of air and that hoses are free of flowing restrictions.
12. In the event of an emergency, the Confined Space Attendant will have access to at least the same level of protection required of the AAEG Entrants.

F. Continuous/Periodic Monitoring

- 
1. The Confined Space Attendant shall continuously monitor the conditions inside the Confined Space.
  2. At least hourly, the results of monitoring shall be recorded on the Permit.
  3. If conditions inside the Confined Space reach an unacceptable level, or if there is a sudden, unexplained change in conditions, the Confined Space Attendant must immediately remove the Entrants from the Confined Space and notify the Entry Supervisor immediately.
  4. The Confined Space Entry Permit shall immediately be considered void and shall be removed from the entrance to the Confined Space.
  5. Reentry shall not be permitted until a new Confined Space Entry Permit has been issued by the Entry Supervisor and reviewed by the Work Crew Leader.

6. The Entry Supervisor shall periodically check the status of the Confined Space throughout his shift.

G. Rescue.

1. Once an unsafe condition occurs or is suspected, the Confined Space Attendant must immediately remove the Entrants from the Confined Space.
2. If the Entrants in the Confined Space cannot exit on their own, the initial response shall consist of the following:

- a. Remember to Remain Calm!!!
- b. Immediately summon for help. The Entry Supervisor, a member of the Plant Emergency Response Team and the AAEG Job Site Safety Coordinator are to be contacted immediately.

3. While awaiting assistance, the Confined Space Attendant shall remain in voice contact at all times, if possible, assuring the personnel in the Confined Space that help is on the way.
4. Once help has arrived, and if the Plant personnel contacted above or other supervisory personnel or their designee on the scene reasonably believe that rescue can be safely attempted, others may enter the Confined Space with the necessary precautions and personal protective equipment.

I. Responsibilities

1. The Work Crew Leader is responsible for:
  - a. Reviewing the Confined Space Entry Permit with the Entry Supervisor;

- b. Informing the work crew of all information contained on the Confined Space Entry Permit;
    - c. Informing the Entry Supervisor of the communication procedures to be used between the attendant and the AAEG Entrants and recording those procedures on the Permit.
  2. The Confined Space Attendant is responsible for:
    - a. Staying stationed at the lowest entrance to the Confined Space to assist, communicate, sound emergency alarm, pass tools, etc. to the personnel inside the Confined Space;
    - b. Staying in constant contact with all persons in the Confined Space through either visual contact or oral communication;
    - c. Maintain the Confined Space Entry Permit and ensure that all entrants:
      - i. Are AAEG to enter the confined space;
      - ii. Sign in upon entering the Confined Space;
      - iii. Sign out upon exiting the Confined Space.
  3. The Safety Watch is responsible for: (Note – The duties for the Confined Space Attendant and the Safety Watch are sometimes combined if conditions warrant.
    - a. Sound emergency alarm and call rescue personnel, if needed;
    - b. Assist personnel in the Confined Space in work;
    - c. Assist in rescue activities if possible from outside the Confined Space;

The Safety Watch is never to enter the Confined Space, at least until additional help has arrived.

    - d. Continuously monitor the Confined Space for oxygen content, LELs, and hydrogen sulfide
    - e. Alert personnel in the Confined Space if safe limits are exceeded;
    - f. Record the results of monitoring activities.

4. AAEG Entrants are responsible for:
  - a. Confirming that they are capable and properly trained for the tasks at hand;
  - b. Reviewing the Confined Space Entry Permit with work crew leader prior to entering the Confined Space;
  - c. Making sure that all Personal Protective Equipment issued is properly fitted and functioning properly;
  - d. Understanding the potential hazards in the Confined Space;
  - e. Maintaining constant contact with the Confined Space Attendant while in the Confined Space;
  - f. Signing in prior to entering the Confined Space and signing out upon exiting.

#### HOT WORK PERMITS

##### A. Approval

1. “Hot Work” means riveting, welding, flame cutting or other fire or spark-producing operations. All hot work must be approved by AAEG’s Job Site Safety Coordinator and the Client’s Area Operator.
2. No hot work shall be performed until all sections of the “Hot Work Permit” form have been completed and signed by the Area Operator, indicating approval.

##### B. Fire Watches

1. If the Job Site Safety Coordinator and the Area Operator determines that a Firewatch is necessary, the personnel doing the Hot Work shall provide a Firewatch.
2. The Fire watch must be sufficiently trained and have no other duties or responsibilities than to monitor the work site for fires.

3. The Fire watch must, at a minimum:
  - a. Have a fire extinguisher;
  - b. A means to keep the work area wet;
  - c. A Fire Alarm Control Switch.
  
4. Multi-Fire watches may be required for large work areas or overhead work, where sparks might fall into lower levels.

#### C. Fire Protection and Safety

1. All drainage openings in the vicinity must be covered prior to start of hot work.
2. All combustible, flammable, and other ignitable materials must be removed from the hot work area.
3. Oxygen and acetylene bottles used by welders shall be properly secured and kept away from flying sparks and/or hot metal.
4. All welding or other hot work equipment must be properly grounded.
5. Valves and blinds isolating equipment for hot work shall be properly tagged and locked, where necessary.

## LOCKOUT/TAGOUT

### A. Preparation for Lockout

1. Any person performing work on any machine or equipment will review the planned work with the Area Operator.
2. The Area Operator will locate all isolating devices to be certain which switch (es), valve(s), starter(s), or other energy isolating devices apply to the equipment to be locked out.
3. All personnel working on any equipment must be aware of the type and magnitude of energy that the machine or equipment utilizes and must understand the associated hazards.

### B. Shutdown

1. Equipment shall be shutdown using established shutdown procedures.
2. All process valves and utilities to and from the machine or equipment will be properly closed and locked.
3. All pressure, liquids and/or gases shall be removed from the machine or equipment.

### C. Lock and Tag

1. The Area Operator and personnel working on the equipment shall open the main breaker to the machine or equipment; install a hasp and lock to lock the AAEaker in the off position.

2. The Area Operator shall prepare a tag indicating ownership of the lock and shall place the tag on the lock or chain.
3. All inlets and outlets to steam valves shall be chained and locked in the closed position.
4. All process and utility valves to and from the machine or equipment shall be chained and locked in the closed position.
5. The Area Operator shall check and confirm that valves and switches are in the closed position not leaking.
6. The personnel doing the work must verify that all locks have been installed.
7. The personnel doing the work is responsible for a final check to verify the effectiveness of the lockout and insure that all energy and pressure sources have been dissipated.

D. Lock Removal

1. No locks shall be removed by anyone other than the person who installed the lock or the person to whom ownership of the lock has been transferred during a shift change.
2. When a lock-out runs past shift change, the custody of the lock will be transferred from the Area Operator and personnel doing the work going off to the personnel coming on shift.
3. Upon completion of the work, the personnel performing the work shall notify the Area Operator that the work has been completed.
4. The Area Operator will check the equipment or machinery to insure all guards and safety equipment are in place.

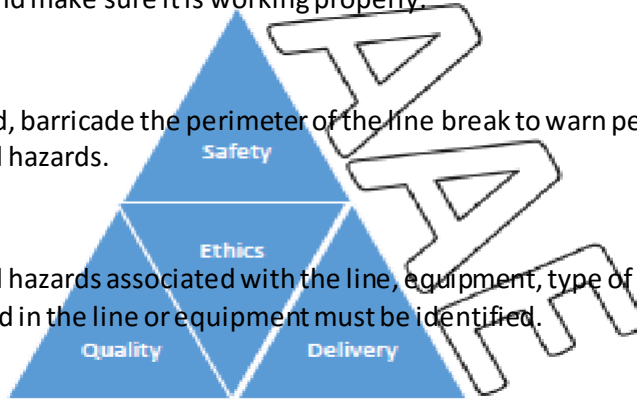


5. Prior to restarting the machinery or equipment, the Area Operator will also ensure that all other locks or tags have been removed and that proper startup procedures are followed.

## SAFE EQUIPMENT & PIPE LINE AAEAKING PROCEDURES

### A. Preparation and Isolation

1. The Area Operator and personnel working on line shall verify that the line to be broke has been properly taken out of service and cleared to be worked on.
2. Personnel working on the line shall locate the nearest eyewash and safety shower station and make sure it is working properly.
3. If needed, barricade the perimeter of the line break to warn personnel in the area of potential hazards.
4. Potential hazards associated with the line, equipment, type of service, or substance contained in the line or equipment must be identified.
5. MSDS shall be available to personnel working on the line for reference if desired.
6. Everyone working in the area shall be advised of identifiable potential hazards.



### B. Blinding/Isolation

1. Before equipment or piping is opened, the Area Operator shall specify any special blinding requirements such as:

- a. All hydrocarbon, chemical, inert gas, and/or utility lines that must be blinded or disconnected and plugged. Connections to closed relief valve systems (flares, fuel gas system, etc.) must also be blinded or disconnected.
- b. Any purge or bleed media for instrument taps (flushing oil, gas, steam, air, inert gas) must be blinded or disconnected and plugged.
- c. All instrument lines, sight glasses and float columns that must be bled down and purged.
- d. Any temporary hook-up or purge connection (steam, water, inert gas, etc.) to the piping or equipment must be disconnected and/or removed to insure something is not introduced into the lines during work.

2. The Area Operator shall drain all residual products and, to the maximum extent practicable, free the line or equipment of hazardous vapors.

3. All upstream and downstream valves controlling hot, corrosive, toxic, or flammable materials must be closed, blocked and properly tagged.

4. All steam, water, nitrogen and air lines must be blinded, disconnected or plugged.

5. Personnel working on the lines shall inspect and check the blinds against the blind list to verify all blinds are installed and the affected line or equipment is indeed isolated.

6. All applicable pumps or other powered equipment connected to the line or equipment should be immobilized, locked and tagged.

7. Personnel working on the lines shall review the work area to identify any other circumstances that require extra measures to be taken to ensure a safe working condition.

**C. Opening the Line or Equipment**

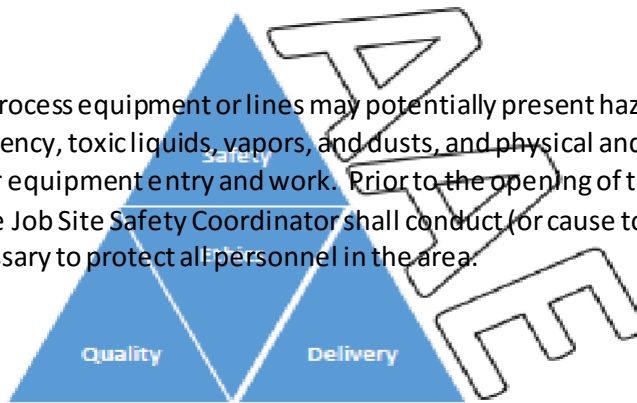
1. If possible, personnel shall be station upwind of the line to be opened to avoid any possible release of vapors.

2. Personnel in the area shall be positioned to avoid exposure to direct spray.
3. Loosen bolts on the side opposite of the flange to direct any possible spray away from personnel.
4. Drain and properly dispose of any remaining contents of the line before removing all bolts if possible.
5. Stop work immediately and notify the Area Operator and the Job Site Safety Coordinator if any potentially unsafe condition is discovered.

**D. Testing**

The atmosphere inside process equipment or lines may potentially present hazards such as fires and explosions, oxygen deficiency, toxic liquids, vapors, and dusts, and physical and other hazards during some phase of the line or equipment entry and work. Prior to the opening of the line or equipment, the Area Operator and/or the Job Site Safety Coordinator shall conduct (or cause to be conducted) such tests as they deem necessary to protect all personnel in the area.

**ELECTRICAL SAFETY**



**A. General Requirements**

1. Safety-related work practices shall be employed to prevent electric shock or other injuries relating from either direct or indirect electrical contacts, when work is performed on or near energized electrical equipment or circuits. Specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.
2. Live parts to which a worker may be exposed shall be de-energized by properly trained personnel before work is started on or near the device, unless it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground are not required to be de-energized.

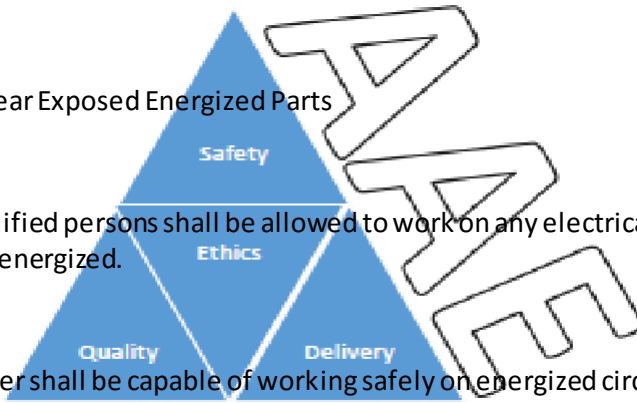
3. If exposed live parts are not de-energized, other safety-related work practices shall be used to protect personnel working on the devices.

**B. Working On or Near Exposed De-energized Parts**

1. All circuits energizing the devices to be worked on shall be properly locked and tagged out prior to any work starting.
2. A qualified person shall verify that the equipment cannot be re-energized and restarted.
3. A qualified person shall verify that the circuit elements and equipment parts are de-energized.

**C. Working On or Near Exposed Energized Parts**

1. Only qualified persons shall be allowed to work on any electrical devices that have not been de-energized.
2. The worker shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

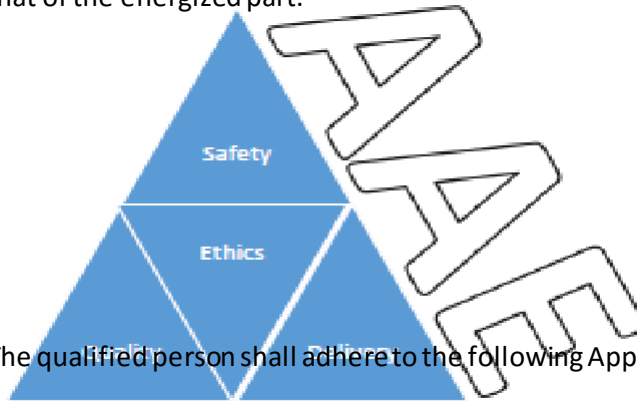


**D. Working On or Near Overhead Lines**

1. Lines shall be de-energized and grounded, or other protective measures, such as guarding, isolating or insulating, shall be provided before work is started.
2. When an unqualified person is working in an elevated position near overhead lines, the longest conductive object in their procession cannot come closer to any unguarded, energized overhead line than the following distances and voltages to ground:

- a. 50 kV or below: 10 feet;
  - b. Over 50 kV: 10 feet plus 4 inches for every 10 kV over 50 kV.
3. A qualified person working in the vicinity of overhead lines, whether in an elevated position or on the ground, may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in the table below unless:

- a. The person is insulated from the energized part;
- b. The energized part is insulated both from all other conductive objects at a different potential and from the person;
- c. The person is insulated from all conductive objects at a potential different from that of the energized part.



- d. The qualified person shall adhere to the following Approach Distances:

Voltage Range	Approach Distance
(phase to phase)	(Minimum)
300 V and less:	Avoid contact
300 V to 750 V:	1 foot
750 V to 2 kV:	1.5 feet
2 kV to 15 kV	2 feet
15 kV to 37 kV	3 feet
37 kV to 87.5 kV	3.5 feet
87.5 kV to 121 kV	4 feet

121 kV to 140 kV

4.5 feet

4. Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained.

### HEAVY EQUIPMENT OPERATION WITHIN PROCESS UNITS

A hot work permit must be obtained prior to bringing any heavy equipment into operating units and a spotter must be present to help ensure that operating equipment and overhead structures are not accidentally struck when moving equipment within the unit.

### CRANE SAFETY

#### A. General Requirements

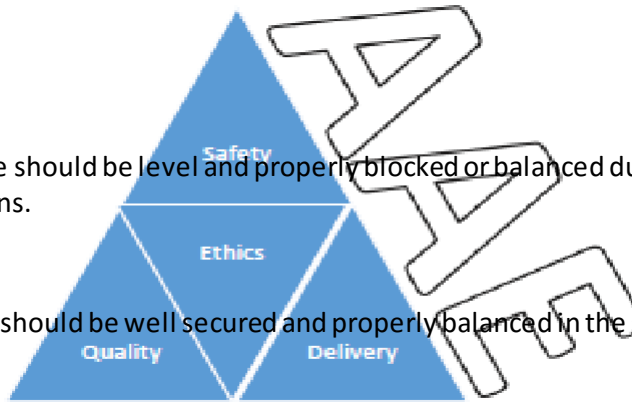
1. Only qualified personal shall be permitted to operate a crane.
2. A substantial and durable load rating chart with clearly legible letters and figures shall be provided with each crane and securely fixed to the crane cab in a location visible to the operator while seated at his control station.
3. All cranes and similar equipment shall have been inspected and certified in accordance with applicable and Local ordinances and regulations, within one year prior to using such equipment in the Job Site.
4. All certification and inspection documents must be made available to the Job Site Safety Coordinator or other Client representatives upon request.
5. Cranes moving into, within, and out of operating units must have a spotter present to ensure that operating equipment is not accidentally struck.
6. All guards and other load limiting devices specified by the crane manufacturer shall be in place and fully operational.

**B. Handling the Load**

1. No crane shall be loaded beyond 85% of its rated load with all outriggers used.
2. The hoist rope shall not be wrapped around the load.
3. The load shall be attached to the hook by means of slings or other approved devices.
4. Only properly trained personnel shall rig loads not having clear lifting points.

**C. Moving the Load**

1. The crane should be level and properly blocked or balanced during all lifting and moving operations.
2. The load should be well secured and properly balanced in the sling or lifting devices.
3. Before starting to lift and move a load, the hoist rope shall be checked to ensure that it is not kinked and multiple hoist lines are not twisted around each other.
4. The hook shall be brought over the load in such a manner as to prevent swinging.
5. During hoisting, there shall be no sudden acceleration or deceleration of the moving load.
6. Care shall be taken to prevent the load from contacting any obstructions.



7. No personnel shall be on the load or the hook during any hoisting, lowering, swinging, or traveling,
8. The load shall not be positioned over any personnel.
9. Outriggers shall be used in accordance with the Manufacturer’s specifications when the load radius dictates.
10. Neither the load nor the boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.
11. When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. He shall be required to analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.
12. During transit, the following additional precaution shall be taken:
  - a. The boom shall be carried in line with the direction of motion;
  - b. The superstructure shall be secured against rotation, except when negotiating turns and the boom is properly supported on a dolly.
  - c. An empty hook shall be lashed or otherwise restrained so that it cannot swing freely.
13. Before traveling, with or without a load, a designated person shall be responsible for determining and controlling safety. Decisions such as position of load, boom location, ground support, travel route, and speed of movement shall be controlled by the designated person.
14. When rotating the crane, sudden starts and stops shall be avoided.
15. A tag or restraint line shall be used to control the movement and location of the load.



16. At no time shall personnel be positioned where the load could possibly crush them against a stationary object.

D. Holding the Load

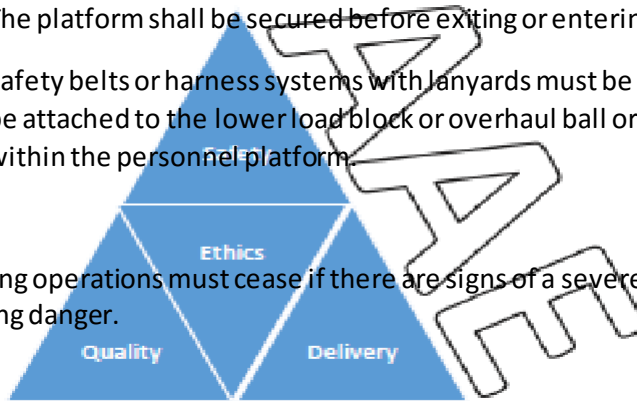
1. The operator shall not be permitted to leave their position at the controls while the load is suspended.
2. No person is permitted to stand or pass under a suspended load.
3. If the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction.

E. Personnel Lifts

1. Hoisting personnel by crane is generally prohibited, unless there is no safe alternative available and if the requirements described below are met;
  - a. Cranes used to hoist personnel must be placed on firm ground and the crane must be leveled.
  - b. The crane operator must always have full control over the movement of the personnel platform.
  - c. Wire rope used for personnel lifting must be capable of lifting seven times the maximum permitted load.
  - d. The combined weight of the loaded personnel platform and its rigging must not exceed 50 percent of the rated chart capacity of the crane.
2. The crane must be equipped with:
  - a. An anti-two-blocking device that prevents contact between the load block or overhaul ball and the boom tip; or



9. A pre-lift meeting must be held with all personnel involved in personnel hoisting (crane operator, signal person, workers to be lifted, and the person responsible for the hoisting operation) to review the requirements and the procedures to be followed.
  
10. Other Requirements include but are not limited to:
  - a. All other requirements relative to crane safety must be followed;
  - b. Personnel are forbidden to “ride the load,” only platforms (or baskets specifically designed for personnel lifting shall be used to hoist personnel;
  - c. Use tag lines where practical;
  - d. All personnel shall keep all body parts inside the platform during raising, lowering, and positioning activities;
  - e. The platform shall be secured before exiting or entering;
  - f. Safety belts or harness systems with lanyards must be used. The lanyard must be attached to the lower load block or overhaul ball or to a structural member within the personnel platform.
  
11. All hoisting operations must cease if there are signs of a severe storm or other impending danger.



**F. Lifting over Process Lines and Equipment**

1. In general, lifting heavy objects over live electrical or operating lines or equipment should be avoided whenever possible.
  
2. When such activities cannot be avoided the methods, procedures and guidelines set forth above for personnel lifts are applicable for all loads.

## FORKLIFT SAFETY

### A. General Requirements

1. Only a trained and AAEG forklift operator is permitted to drive a forklift.
2. A substantial and durable load rating chart with clearly legible letters and figures shall be securely fixed to the forklift in a location easily visible to the operator.
3. All forklifts and similar equipment shall have been inspected and approved in accordance with all applicable Local and international ordinances and regulations.
4. Approved forklifts shall bear a label or some other identifying mark indicating approval by the testing laboratory.

### B. Pre-Use Inspections

1. The forklift operator must inspect the forklift at the beginning of each shift before using.
2. The inspection shall include, but not be limited to:
  - a. Fork pins and stops to make sure that they are in place;
  - b. All cowlings and body parts;
  - c. Wheels and tires for excessive wear;
  - d. Fuel levels and fuel lines for seepage or leakage;
  - e. brakes and Steering;
  - f. Hydraulics and controls;
  - g. Headlights; taillights and warning lights; and

h.       Horns and alarm systems

3.       If a forklift is found to be in need of repair, defective or in any way unsafe, the forklift shall be taken out of service until it has been restored to safe operating condition.

C.       Forklift Operations

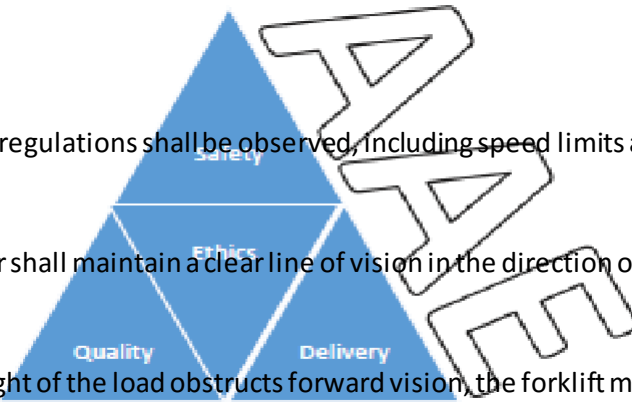
1.       Forklifts shall not be driven up to anyone standing in front of a fixed object.
2.       No one shall be allowed to stand or pass under the elevated portion of a forklift.
3.       AAEG personnel shall not be permitted to ride on forklifts.
4.       When a forklift is left unattended, forks shall be fully lowered, controls neutralized, power shut off, and brakes set.
5.       Operators shall be aware of overhead installations such as electrical trays, pipe racks, etc. and shall maintain sufficient headroom when necessary to drive under those installations.

D. Loading

1. Only stable or safely arranged loads shall be handled. Extreme caution should be exercised when handling off-center loads which cannot be balanced.
2. Only loads within the rated capacity of the truck shall be handled.
3. Forks should be placed under the load as far as possible.
4. The mast shall be carefully tilted backward to stabilize the load.

E. Traveling

1. All traffic regulations shall be observed, including speed limits and right of ways.
2. The driver shall maintain a clear line of vision in the direction of travel.
3. If the height of the load obstructs forward vision, the forklift must be driven in reverse.
4. When it is necessary to operate a forklift inside operating units, a spotter must be present to ensure that operating equipment or overhead structures are not accidentally struck.

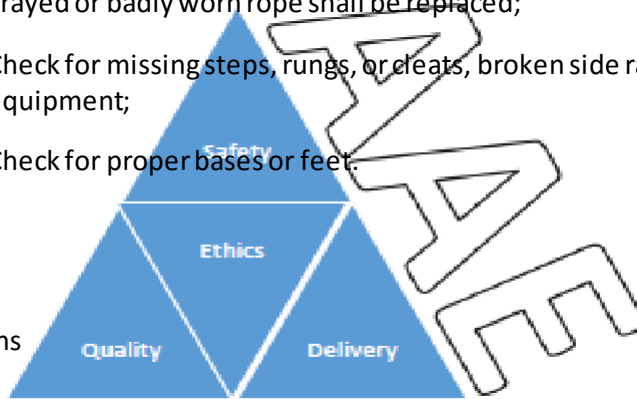


**LADDER SAFETY**

**A. Inspections**

1. Ladders shall be maintained in good condition at all times.
  
2. All ladders must be inspected prior to each use. The inspection shall include, but not be limited to:
  - a. The joint between the steps and side rails shall be tight;
  - b. All hardware and fittings should be securely attached;
  - c. Movable parts shall operate freely without binding or undue play;
  - d. Frayed or badly worn rope shall be replaced;
  - e. Check for missing steps, rungs, or cleats, broken side rails, or other faulty equipment;
  - f. Check for proper bases or feet.

**B. Safety Precautions**



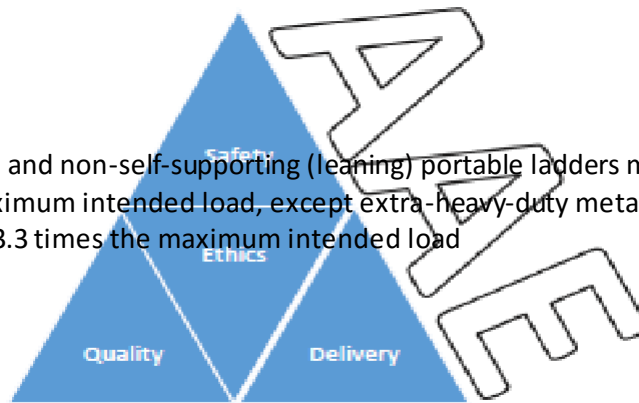
1. The following safety precautions shall be observed in connection with the use of ladders;
  - a. Portable rung and cleat ladders shall be used at such a pitch that the horizontal distance from the support to the foot of the ladder is one-quarter (1/4) of the working length of the ladder;
  - b. The ladder shall be placed as to prevent slipping;
  - c. Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height;
  - d. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded;
  - e. Ladders shall be tied off at the top;

- f. Ladders used to gain access to roof shall extend at least three (3) feet above the point of support;
- g. While climbing a ladder, both hands should be used to hold onto the side rails;
- h. Do not carry tools or other objects in your hands. Use a hand line, if necessary to raise or lower tools;
- i. Do not work from the top three rungs of single or extension rung ladders;
- j. Do not stand on the top two rails of step ladders;
- k. When working from a ladder, both feet must be kept on the ladder rungs or steps;
- l. Your waist must be kept within the boundary of the side rails;

C. Loads

Self-supporting (foldout) and non-self-supporting (leaning) portable ladders must be able to support at least four times the maximum intended load, except extra-heavy-duty metal or plastic ladders, which must be able to sustain 3.3 times the maximum intended load

D. Angle



1. Non-self-supporting ladders, which must lean against a wall or other support, are to be positioned at such an angle that the horizontal distance from the top support to the foot of the ladder is about 1/4 the working length of the ladder.
2. In the case of job-made wooden ladders, that angle should equal about 1/8 the working length. This minimizes the strain of the load on ladder joints that may not be as strong as on commercially manufactured ladders.

E. Rungs



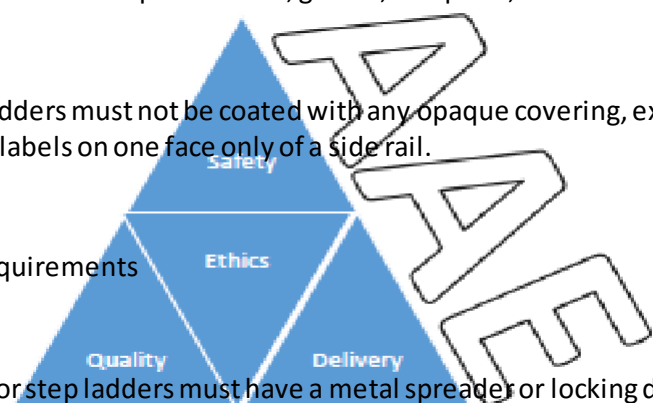
1. Ladder rungs, cleats, or steps must be parallel, level, and uniformly spaced when the ladder is in position for use. Rungs must be spaced between 10 and 14 inches apart.
2. For extension trestle ladders, the spacing must be 8-18 inches for the base, and 6-12 inches on the extension section.
3. Rungs must be so shaped that an employee's foot cannot slide off, and must be skid-resistant.

F. Slipping

1. Ladders are to be kept free of oil, grease, wet paint, and other slipping hazards.
2. Wood ladders must not be coated with any opaque covering, except identification or warning labels on one face only of a side rail.

G. Other Ladder Requirements

1. Foldout or step ladders must have a metal spreader or locking device to hold the front and back sections in an open position when in use.
2. When two or more ladders are used to reach a work area, they must be offset with a landing or platform between the ladders.
3. The area around the top and bottom of ladder must be kept clear.
4. Ladders must not be tied or fastened together to provide longer sections, unless they are specifically designed for such use.
5. Never use a ladder for any purpose other than the one for which it was designed.



## SCAFFOLD SAFETY

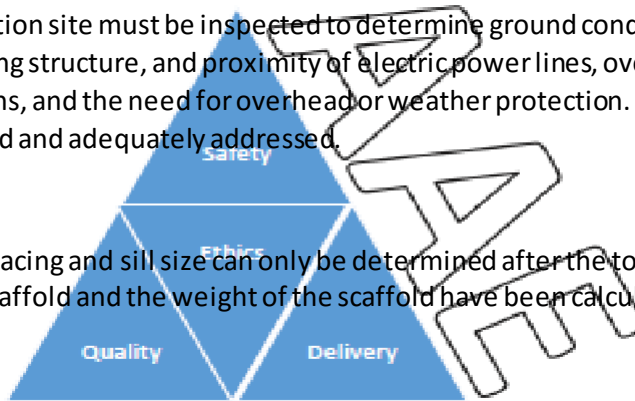
A: Prior to Erection of All Scaffolding Assemblies

Everyone’s safety depends upon the design, erection use, and dismantling of scaffolding by **COMPETENT PERSONS ONLY**. Inspect scaffolding before each use to see that the assembly has not been altered and is safe for use.

Manufacturers and Rental Dealers of Scaffolding issue detailed instructions concerning the erection, use and dismantling of Scaffolding Structures, follow these instructions closely.

As a minimum, observe the following guidelines when using scaffolding;

1. The erection site must be inspected to determine ground conditions, strength of supporting structure, and proximity of electric power lines, overhead obstructions, wind conditions, and the need for overhead or weather protection. These conditions must be evaluated and adequately addressed.
2. Frame spacing and sill size can only be determined after the total loads to be imposed on the scaffold and the weight of the scaffold have been calculated.
3. Stationary scaffolds over 125 feet in height must be designed by a professional engineer.
4. All equipment must be inspected to see that it is good condition and is serviceable. Damaged or deteriorated equipment must not be used.



**WARNING:** Not all species and grades of lumber can be used as scaffold plank. Wood planks used for scaffolding must be graded as scaffold plank by an approved grading agency, or specifically manufactured for scaffold use.

5. Scaffold plank must be inspected to see that it is graded as scaffold plank, is sound and in good condition, and is free from saw cuts, cracks, notches, splits, delaminations and holes.

6. A fully qualified and competent person can deviate from these guidelines only if it can be shown that the resulting scaffold design complies with applicable codes and generally accepted scaffold engineering practices.

## B. Erection Of Scaffold.

WARNING: FALL ARREST equipment attached to scaffold MAY NOT

Prevent serious INJURY or DEATH if a fall occurs.

Scaffold must be erected, moved, or disassembled only under the supervision of competent persons. Safety equipment including safety glasses and hard hats must be worn by all persons erecting, moving, dismantling or using scaffolding.

1. Base plates must be centered on the sills, and be in firm contact with both sills and frame legs. Be especially careful when scaffolds are to be erected on soft or frozen ground. Any part of a building or structure used to support the scaffolding must be capable of supporting the load to be applied.
2. Compensate for uneven ground by using screw jacks and base plates, and sills if required by ground conditions. **DO NOT USE** unstable objects such as blocks, loose bricks, and similar objects or materials.
3. Plumb and level scaffolding. Be sure scaffold stays plumb and level as erection progresses.
4. Ties, guys, bracing, and/or outriggers may be needed to assure a safe, stable scaffold assembly. The height of the scaffold in relation to the minimum base width, wind loads, the use of brackets or cantilevered platforms, and imposed scaffold loads determine the need for sway and stability bracing. The following general guidelines apply:
  - a. A scaffold must always be secured when the height of the scaffold exceeds four (4) times the minimum base width.

Note: California and some other states require a height-to-minimum base width ratio of three to one (3:1). Refer to the governing codes for your job location.

WARNING - Outriggers, or other means, may be used to increase the minimum base dimension of a scaffold tower. The resulting base dimension, however, may NO LONGER BE THE MINIMUM (or limiting) BASE DIMENSION.

- b. Ties must be placed as near as possible to horizontal members. The bottom tie must be placed no higher than four (4) times the minimum scaffold base width. Subsequent vertical tie placement will depend upon the scaffold width. Scaffolds three (3) feet and narrower must be tied at vertical intervals no more than 20 feet apart. Scaffolds wider than three (3) feet must be tied at vertical intervals no more than 26 feet apart. The uppermost tie should be placed as close to the top as possible and, in no case, more than four (4) times the minimum base width from the top.
- c. Vertical ties must be placed at the ends of the scaffold runs and at no more than 30 feet horizontal intervals in between.
- d. Ties must be installed as the erection progresses, and not removed until scaffold is dismantled to that height.
- e. Side brackets, cantilevered platforms, pulleys, hoist arms, enclosed scaffolds, sloped surfaces, and windy conditions introduce overturning and uplift forces which must be considered and compensated for. These situations require additional bracing, tying, or guying.
- f. Circular scaffold erected completely around or within a structure may be restrained from tipping by use of "stand off" bracing members.
- g. A free standing tower must be guyed at the intervals outlined above or otherwise restrained to prevent tipping or overturning.

5. Outrigger frames or outrigger units can be used to increase the minimum base width. If used, they must be installed on both sides of the tower.
  
6. Work platforms must be fully decked with platform units in good, sound condition. Platform units may be individual scaffold grade wood planks, fabricated planks, fabricated scaffold decks or fabricated scaffold platforms.
  - a. Scaffold platforms and walkways must be at least 18 inches wide.
  
  - b. Each end of each plank must overlap its support by a minimum of 6 inches or be cleated.
  
  - c. Each end of each platform 10 feet long or less must overhang its supports by no more than 12 inches. Each end of each platform longer than 10 feet must overhang its supports by no more than 18 inches. Larger overhangs must be guarded to prevent access to the overhang.  
 Materials must not be stored on overhangs. Do not stand on overhangs.
  
  - d. Each plank on a continuous run scaffold must extend over its supports by at least 6 inches and overlap each other by at least 12 inches.
  
  - e. Spans of 2 inch by 10 inch nominal scaffold grade plank must never exceed 10 feet. No more than one person must stand on an individual plank at one time. Loads on planks must be evenly distributed and not exceed the allowable loads for type of plank being used.
  
  - f. Secure platform units to scaffolding to prevent uplift caused by high winds or other job site conditions. Use latches, if supplied by platform manufacturer or other suitable means.
  
7. Guardrails must be used on all open sides and ends of scaffold platforms. Both top and midrails are required. Local codes specify minimum heights where guardrails are required. Use at lower heights if falls can cause injury.

8. To boards must be installed whenever people are required to work or pass under a scaffold platform. When materials are to be stacked higher than the to board, screening is required from the to board or platform to the top guardrail.
9. Access must be provided to all work platforms. If access is not available from the structure, access ladder units, or stairways must be provided. When access ladder units are provided; a rest platform must be installed at vertical intervals of 35 feet or less. Attachable ladder units must extend at least three (3) feet above platforms. Install access ladder units as scaffold erection progresses.
10. Use fabricated decks or cleated planks to minimize platform interference in access areas.
11. DO NOT store materials on side or end bracket platforms.
12. Cantilevered platforms must be specifically designed for that purpose, the frames pinned to prevent uplift and adequate ties provided to prevent overturning.
13. Materials must never be placed on cantilevered platforms unless the assembly has been designed to support material loads by a qualified person. These types of platforms cause overturning and uplift forces which must be compensated for.
14. After erecting scaffold, be sure screw jacks are in firm contact with frame legs.
15. Special care must be taken when putlogs are used:
  - a. Putlogs must only be mounted using putlog hangers, with all bolts and nuts installed and tightened.
  - b. Putlogs must overhang their supports by at least 6 inches.

- c. Lateral bracing and knee bracing are both required for putlog spans greater than 10 feet.
  - d. Putlogs used as side or end brackets require special mountings and special bracing.
16. DO NOT install platforms between free standing towers.
  17. Material hoists and derricks should not be mounted on a scaffold unless the scaffold is specifically designed for that purpose.
  18. CHECK THE ENTIRE SCAFFOLD ASSEMBLY BEFORE USE. Thoroughly inspect the completed assembly to see that it complies with all safety codes, all fasteners are in place and tightened, it is level and plumb, work platforms are fully decked, guardrails are in place, and safe access is provided.

C. Erection of Rolling Scaffolds

The following additional precautions apply to the erection of rolling towers:

1. The height of the rolling tower must not exceed four (4) times its minimum base width, or 40 feet, whichever is lower.

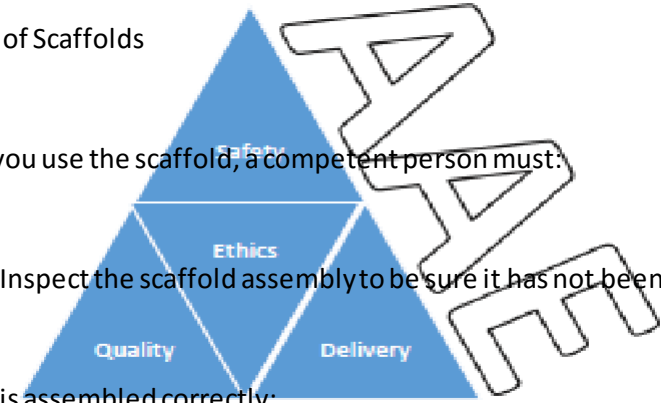
WARNING: The load rating of the casters used will limit the size, configuration, and load capacity of the rolling tower.

2. Secure all casters to frame legs or screw jacks with a nut and bolt or other secure means.
3. Screw jacks must not increase the height of the scaffold by more than 12 inches. Towers must be kept level and plumb at all times.

4. Horizontal diagonal bracing must be used at the bottom and top of rolling towers where the top work platform is more than 9 feet above the surface.
5. When rolling towers are to be erected higher than 9 feet, the first brace must be no more than 2 feet above the casters, the others at no greater than 21 foot intervals above. Fabricated planks with hooks may be used as diagonal braces.
6. All frames must be fully cross-braced.
7. Platform units with hooks, or cleated planks, must be used on rolling towers.

D. Use of All Types of Scaffolds

1. Before you use the scaffold, a competent person must:
  - a. Inspect the scaffold assembly to be sure it has not been altered;
  - b. is assembled correctly;
  - c. is level and plumb;
  - d. all base plates are in firm contact with sills;
  - e. all bracing is in place and securely tightened
  - f. all platforms are fully decked;
  - g. all guardrails are in place;



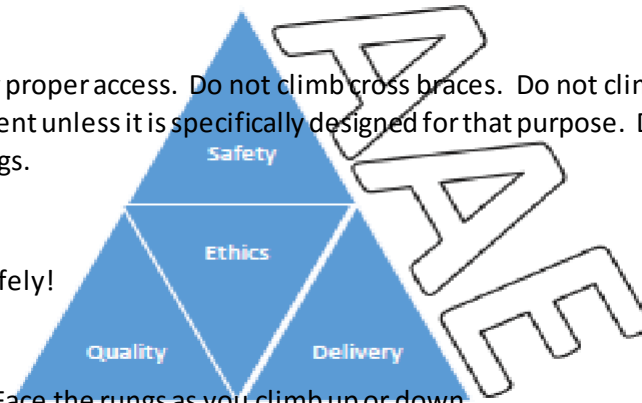


- h. safe access is provided;
- i. it is properly tied and/or guyed;
- j. there are no overhead obstructions;
- k. there are no energized electric power lines within 12 feet of the scaffold assembly and;
- l. Any deficiencies found are corrected prior to use.

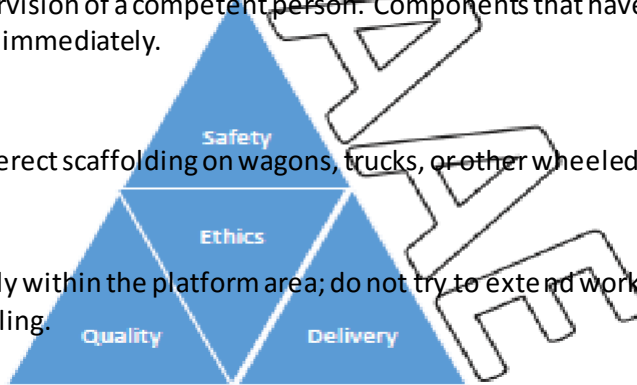
2. Use only proper access. Do not climb cross braces. Do not climb any scaffold component unless it is specifically designed for that purpose. Do not stand on platform overhangs.

3. Climb safely!

- a. Face the rungs as you climb up or down.
- b. Use both hands.
- c. Do not try to carry materials while you climb.
- d. Be sure of your footing and balance before you let go with your hands. Keep one hand firmly on frame or ladder at all times.
- e. Clean shoes and rungs to avoid slipping.

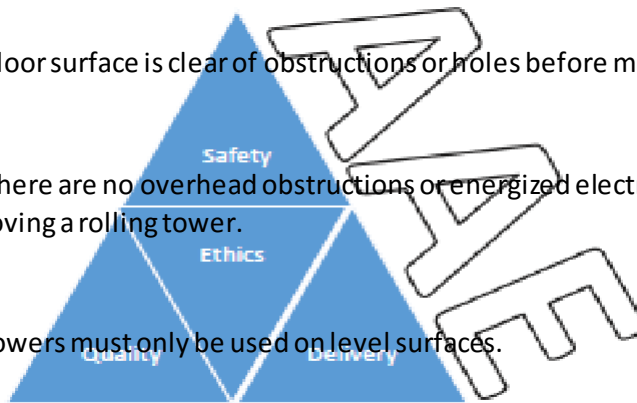


4. DO NOT work on slippery platforms.
  
5. DO NOT overload platforms with materials. Special care must be taken when putlogs are used.
  
6. DO NOT store materials on platforms supported by putlogs. They are designed for personnel ONLY.
  
7. DO NOT extend working heights by standing on planked guardrails, boxes, ladders or other materials on scaffold platforms.
  
8. DO NOT loosen, detach, or remove any component of a scaffold assembly except under the supervision of a competent person. Components that have been removed must be replaced immediately.
  
9. DO NOT erect scaffolding on wagons, trucks, or other wheeled vehicles.
  
10. Stand only within the platform area; do not try to extend work area by leaning out over guard railing.



**E. Additional Precautions When Using Rolling Towers**

1. DO NOT RIDE MANUALLY PROPELLED ROLLING SCAFFOLD. NO ONE MUST BE ON A ROLLING TOWER WHILE IT IS BEING MOVED.
2. Lock all casters before getting on a rolling tower. Casters must be locked at all times the scaffold is not being moved.
3. DO NOT bridge between rolling towers.
4. Remove all materials from scaffolding before moving a rolling tower.
5. Be sure floor surface is clear of obstructions or holes before moving scaffold.
6. Be sure there are no overhead obstructions or energized electric power lines in the path when moving a rolling tower.
7. Rolling towers must only be used on level surfaces.
8. Move rolling towers from the base level only. DO NOT PULL OR PUSH from the top.

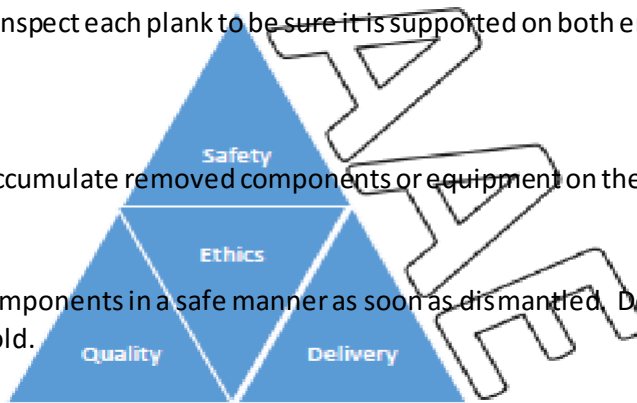


**F. Dismantling Scaffolds**

The following additional precautions apply when dismantling scaffolding:

**WARNING: IT MAY BE NECESSARY TO ADD PARTS TO A SCAFFOLD BEFORE IT CAN BE DISMANTLED SAFELY.**

1. PRIOR TO REMOVAL OR LOOSENING of any component, consider the effect the removal of the component, or the loosening of a joint, will have on the strength of the remaining assembly.
2. Check to see if scaffolding has been altered in any way which would make it unsafe. If so, reconstruct where necessary before beginning the dismantling process.
3. Use only proper access. Do not climb braces or vertical members. Do not climb scaffold components unless they are specifically designed for that purpose.
4. Do not remove ties until scaffold above has been removed.
5. Visually inspect each plank to be sure it is supported on both ends and is safe to work on.
6. Do not accumulate removed components or equipment on the scaffold.
7. Lower components in a safe manner as soon as dismantled. Do not throw components off scaffold.
8. Stockpile dismantled equipment in an orderly manner.
9. Remove scaffold components immediately after detaching from scaffold.
10. Understanding and following these safety guidelines will increase your personal safety and the safety of your fellow workers.



**MULTI-GAS DETECTORS**

**A. Usage**

1. When necessary, as in the case of Confined Space Entry, Multi-gas Detectors should be used to check for oxygen, hydrogen sulfide (hydrochloric acid), and L.E.L. of combustible gas.
2. Prior to usage, the instrument will be checked by the Job Site Safety Coordinator and/or the Area Operator or "A" Gauger and readings will be compared to those taken by the Area Operator or "A" Gauger.
3. In the event of a discrepancy, a third instrument will be used and the apparently defective instrument will be taken out of service and returned to the Job Site Safety Coordinator for calibration or other service.
4. The Employee's designated Confined Space Attendant or other person responsible for monitoring the instrument must be able to demonstrate knowledge of its operation and usage.
5. When the use of a multi-gas detector is necessary, the Employee is to record the meter's readings every hour on forms to be supplied by the Job Site Safety Coordinator.
6. The completed forms are to be attached to the Confined Space Entry Permit or other permit and returned to the Job Site Safety Coordinator.

TOOLS - HAND AND POWER

A. General Requirements

1. All hand and power tools and similar equipment shall be maintained in a safe condition.
2. When power operated tools are designated to accommodate guards, they shall be equipped with such guards when in use.
3. Sufficient forms of personal protective equipment shall be worn when necessary to protect one from hazards.

B. Hand Tools

1. The use of unsafe hand tools is strictly prohibited.
2. Wrenches, including adjustable, pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.
3. Wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

C. Power-Operated Hand Tools

1. Electric power operated tools shall either be of the approved double insulated type or grounded in accordance with state regulations.
2. Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.

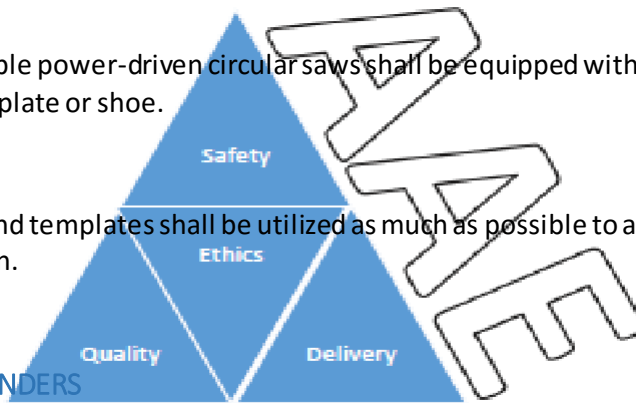
**D. Abrasive Wheels and Tools**

1. All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation.
2. Grinding machines shall be equipped with appropriate safety guards.
3. All abrasive wheels shall be closely inspected and ring-tested before mounting to ensure that they are free from cracks or defects.

**E. Woodworking Tools**

1. All portable power-driven circular saws shall be equipped with guards above and below the base plate or shoe.
2. Guides and templates shall be utilized as much as possible to aid operator in safe operation.

**COMPRESSED GAS CYLINDERS**



**A. General Requirements**

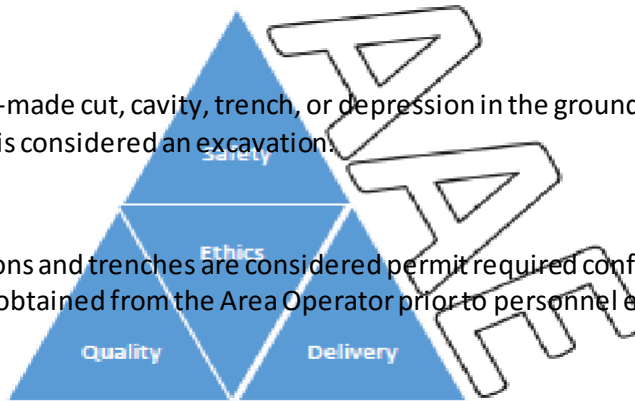
1. Valve protection caps shall be in place when compressed gas cylinders are transported, moved, or stored.
2. Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved.
3. Compressed gas cylinders shall be secured in an upright position at all times, except, if necessary, for short periods of time when cylinders are actually being hoisted or carried.

4. Cylinders shall be kept at a safe distance or shielded from welding or cutting operations. Cylinders shall be placed where they cannot become part of an electrical circuit.
5. Oxygen and fuel gas regulators shall be in proper working order while in use.
6. Valve protection caps shall be installed immediately after use by the operator using the cylinder.

## EXCAVATION AND TRENCHES

### A. Definitions

1. Any man-made cut, cavity, trench, or depression in the ground, formed by earth removal is considered an excavation.
2. Excavations and trenches are considered permit required confined spaces. A permit must be obtained from the Area Operator prior to personnel entry.



### B. General Requirements

1. Excavations must be barricaded to protect pedestrians and vehicles.
2. All excavated material must be piled at least three feet back from the edge of the excavation.
3. All walls and faces of excavations that are greater than four (4) feet deep must be shored or sloped in accordance with HSE standards to eliminate the hazards of cave-in.
4. A ladder for Employee exit must be provided. An Employee working in the trench must not have to walk more than 25 feet to gain access to the ladder.



5. Personnel are not permitted to work beneath suspended or moving loads of earth during the excavation.

## HOUSEKEEPING

### A. Housekeeping – Safety Factor

1. Housekeeping is the responsibility of every individual on the site.
2. Housekeeping is one of the most important factors in accident prevention and is an integral part of safety.
3. Keep all work areas in a neat and orderly manner.
4. Keep all aisles, exits and emergency escape routes unobstructed and otherwise free of debris and other possible tripping hazards.
5. Floors and stairways are to remain free of spills and other slipping hazards at all times.
6. Materials are to be stored only in designated areas and should never block emergency equipment, i.e. fire extinguishers, breathing apparatus, etc.
7. Dispose of cigarette butts in cans provided. Smoke only in designated areas.
8. Put trash in trash containers.

LEAD ABATEMENT

A. Establishment of Exclusion Zones

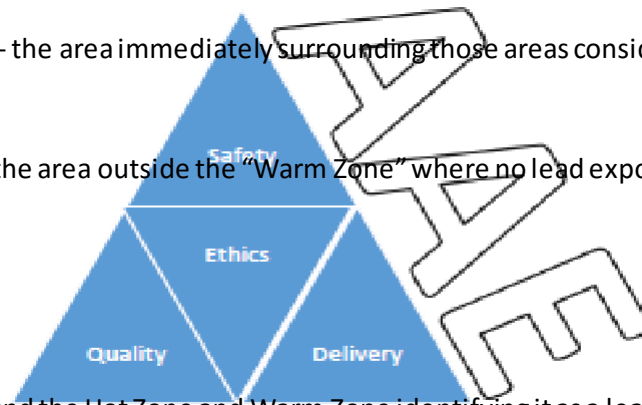
1. All areas shall be checked for lead containing materials by a properly trained person.
2. Prior to any operations where there is a potential for possible lead exposure, the Job Site Safety Coordinator will designate exclusion zones as follows:

a. The Hot Zone - any area, vessel or exchanger determined to pose a significant threat of lead exposure greater than those levels deemed permissible by HSE.

b. The Warm Zone - the area immediately surrounding those areas considered a "Hot Zone."

c. The Cold Zone - the area outside the "Warm Zone" where no lead exposure threat exists.

B. Signs



Signs will be posted around the Hot Zone and Warm Zone identifying it as a lead work area.

C. Personal Protective Equipment

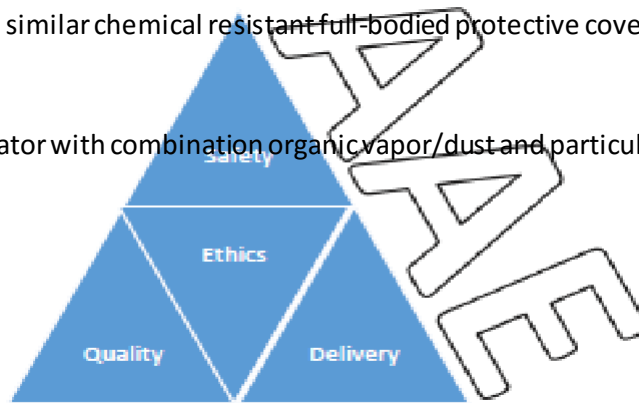
1. Any person entering a Hot Zone shall, at a minimum, avail themselves of the following personal protective equipment:

- a. Hooded Tyvek or similar chemical resistant full-bodied protective cover all;
- b. Supplied-air respirator with full face piece;

- c. Gloves;
- d. Hard hats;
- e. Safety Goggles; and
- f. Boot coverlets.

2. Any person entering the Warm Zone shall, at a minimum, avail themselves of the following personal protective equipment:

- a. Hooded Tyvek or similar chemical resistant full-bodied protective cover all;
- b. Half-mask respirator with combination organic vapor/dust and particulate cartridges;
- c. Gloves;
- d. Hard hats
- e. Safety Goggles; and
- f. Boot coverlets.



D. Decontamination Facilities

1. A station will be set up outside of the Warm Zone to deposit protective clothing and tools and equipment.

2. Protective clothing and tools will either be cleaned or disposed of in accordance with applicable regulations.

3. When needed, shower facilities will be designated to be used for personal hygiene.

E. Hygiene facilities and practices

1. Any person entering a Hot Zone shall adhere to the following practices when leaving the warm Zone:

a. All protective gear, including coveralls, respirators, bootlets, etc. must be removed and deposited in the appropriate containers for cleaning or disposal.

b. All tools and equipment used will be deposited in appropriate containers for cleaning.

b. Garments worn under protective clothing will be removed at the shower facilities and stored in designated containers for cleaning.

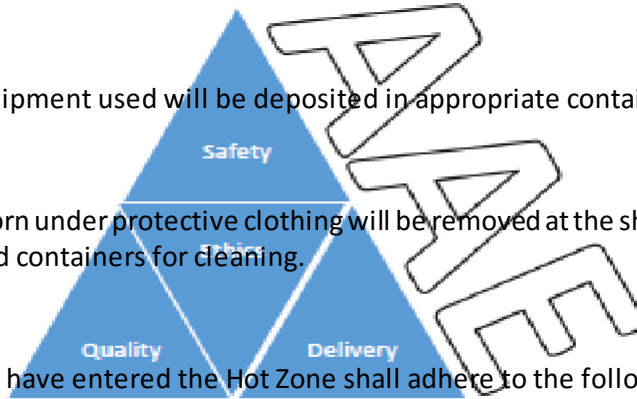
2. Persons who have entered the Hot Zone shall adhere to the following personal hygiene practices:

a. Prior to eating or smoking, which is to be done only in designated areas outside of the Warm Zone, all personnel must wash their hands and face.

b. At the end of the work day, all personnel shall shower at the designated shower facilities.

b. After the shower, personnel must change to fresh clothing to be worn home. No clothing worn in a Hot Zone shall be worn home, this includes underwear and shoes.

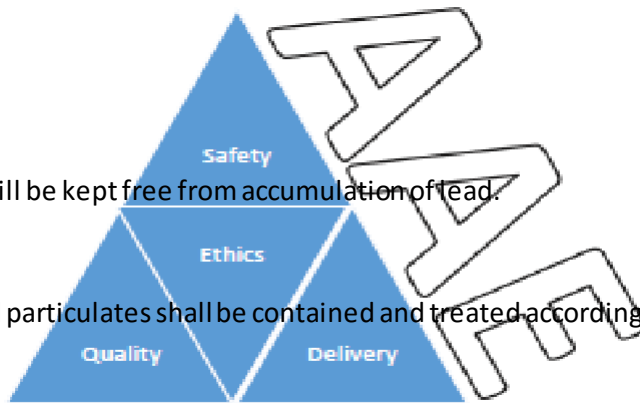
3. Any person entering a Warm Zone shall adhere to the following practices when leaving the Warm Zone:



- a. All protective gear, including coveralls, respirators, bootlets, etc. must be removed and deposited in the appropriate containers for cleaning or disposal.
- b. All tools and equipment used will be deposited in appropriate containers for cleaning.
- b. Prior to eating or smoking, which is to be done only in designated areas outside the Warm Zone Persons who have entered the Warm Zone shall wash their hands and face:

F. Housekeeping

- 1. The workplace will be kept free from accumulation of lead.
- 2. Waterborne lead particulates shall be contained and treated accordingly entering the site's sewer system.
- 3. Remaining accumulations of lead, primarily contained with water will be vacuumed to the extent possible and the area flushed with water to the closed sewers and treated as above.

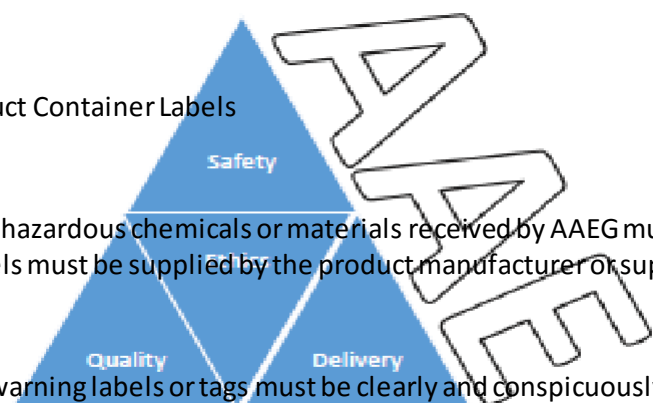


## HAZARD COMMUNICATION

## A. Material Safety Data Sheets (MSDS)

1. All applicable MSDS will be made available for review by Employees when requests for such information are made.
2. The Job Site Safety Coordinator or Contract Coordinator shall provide or otherwise make available to the Employee, the identity and location of potentially hazardous chemicals to which their Employees may be exposed and will supply the Employee the location of a MSDS for those products.

## B. Hazardous Product Container Labels

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1. All containers of hazardous chemicals or materials received by AAEG must display a hazard warning label. Such labels must be supplied by the product manufacturer or supplier.
  2. Product hazard warning labels or tags must be clearly and conspicuously displayed on each container and shall indicate the identity of the hazardous chemical(s), appropriate hazard warnings; and the name and address of the chemical manufacturer, supplier or other responsible party.
  3. The Job Site Safety Coordinator shall be immediately notified of any potentially hazardous material container that has a missing, incomplete or illegible label. A hazard warning label or tag (e.g. NFPA 704M Hazardous Material Labels) shall be placed on such containers. The information for these labels is to be obtained from the product MSDS or from the manufacturer or supplier.
  4. Employees are strictly prohibited from removing or defacing any hazardous material label without expressed written permission of AAEG.
  5. Portable or other containers into which hazardous chemicals or materials are transferred from the labeled containers shall be labeled with the same identity and hazard warning found on the original

container. Such labeling of transfer containers is not required if the contents are intended for immediate use (i.e. same shift).

C. Hazard Communication Program Information

1. All Employees will ensure that their Employees have received formal hazard communication training. All supervisory personnel shall participate in all available Client hazard communication training and shall supply its personnel with the information and instruction received from the client.
2. All Employees will receive information relative to the Job Site's Hazard Communication Program as part of their Job Site Safety Orientation, including:
  - a. The location and availability of the MSDS files and the chemical inventory;
  - b. Personal protective equipment and work practices to be used and followed when working with potentially hazardous chemicals or materials; and,
  - c. The methods and observations that are used to detect the presence or release of a hazardous chemical in the work area (i.e. chemical monitoring conducted, continuous air monitoring devices, visual inspection of Job Site operations to detect chemical releases, etc.).

## CHEMICAL HAZARDS

There are numerous chemicals found on typical industrial and commercial Job Sites. The majority of them pose some potential harm. Most of these substances are flammable, ignitable, combustible, or explosive. Others are considered toxic. If used correctly, however, and with the proper protective equipment, chemical hazards can be reduced to a safe level. Listed below are some of the chemicals most commonly encountered on a typical Job Site, their characteristics, and the minimum personal protective equipment required when working with each chemical.

A. Ammonia

1. Ammonia will typically be found in its gaseous state. It is easily detected by a strong, pungent, suffocating odor.
2. Ammonia may cause severe skin, eye, and respiratory irritation if exposed to high concentrations.
3. If exposure to skin or eyes occurs, flush with large amounts of water for 15 minutes. Seek medical attention immediately.

4. Air-purifying ammonia cartridge respirator and goggles are required if low concentrations are encountered. For higher concentrations, chemical protective (slicker) suits and a self-contained breathing apparatus is required.
5. If an ammonia cloud is released, spray water into the cloud to dissipate the cloud.

B. Benzene

1. Benzene is a naturally occurring component of crude oil and some of its derivatives such as gasoline and naphtha. It may be encountered in a liquid state or as a vapor. It can be inhaled, ingested, or absorbed through the skin. It is not easily detected by sense of smell or sight.
2. Benzene is a known carcinogen.
3. If inhalation occurs, the victim must be removed from the vapors as soon as possible. Anyone who comes in contact with Benzene must undergo periodic physical examinations.

4. In low vapor concentrations, an air-purifying organic vapor cartridge respirator shall be worn. In higher concentrations, self-contained breathing apparatus shall be worn.

C. Caustic Soda (Sodium Hydroxide, Potassium Hydroxide)

1. Caustic soda will most likely be encountered in its liquid state.
2. Caustic Soda produces severe skin, eye, and upper respiratory irritation.
3. If exposure to skin or eyes occurs, remove contaminated clothing and flush the exposed area with copious amounts of water for at least 15 minutes. Vinegar, asetic acid, or an acid neutralizing solution may provide relief. Seek medical attention if necessary.
4. Rubber gloves, slicker suits, face shields, and goggles should be worn when handling caustic soda.

D. Chlorine



1. Chlorine will most likely be encountered in its gaseous state. It is easily recognized by its highly irritating odor. In its liquid state, it has a greenish yellow color.
2. Chlorine gas is a potent irritant of the eyes, upper respiratory tract, and skin.
3. If inhalation occurs, the victim must be removed from the vapors. If exposure to eyes or skin occurs, flush with large amounts of water for at least 15 minutes. Seek medical attention when necessary.
4. Goggles, Rubber Gloves, and in low concentrations, air-purifying acid gas cartridge respirators should be worn.
5. Water spray may be used to direct or reduce vapors.

E. Hydrogen Sulfide

1. Hydrogen Sulfide is often encountered in the processing of crude oil. It is colorless and in low concentrations has a foul, rotten egg odor. In high concentrations, however, Hydrogen Sulfide immediately paralyzes our sense of smell, so it cannot be relied upon to warn us of danger. Hydrogen Sulfide is heavier than air and will have a tendency to collect in low places.
2. Exposure to high concentrations of Hydrogen Sulfide causes death by paralysis of the respiratory system. In low doses it irritates the eyes, nose and throat. At slightly higher concentrations, breathing will become more and more difficult.
3. If exposed to Hydrogen Sulfide, the victim must be immediately removed to fresh air and, if necessary, breathing must be stimulated by artificial respiration.
4. When there is danger of exposure to Hydrogen Sulfide do not take chances. Wear supplied air, self-contained breathing apparatus.

**EMERGENCY RESPONSE PROCEDURES**

**A. If an Emergency Alarm Sounds**

At the first sound of an emergency alarm, all Employees should immediately cease their operations and evacuate to a designated area of safe refuge.

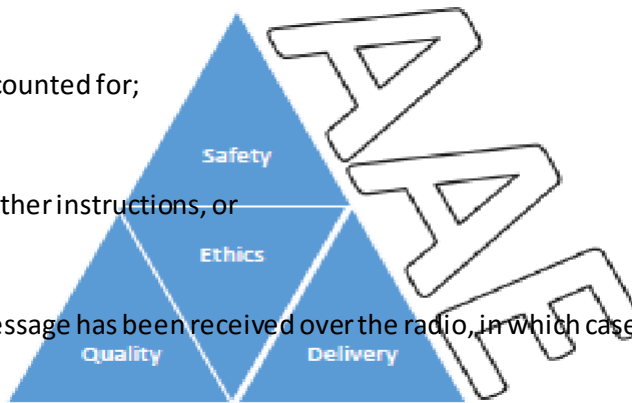
1. Employees should walk to safe refuge via perimeter roads and pathways as shown on the Job Site evacuation route map. Do not walk through the Job Site. To the maximum extent possible, choose a route and area of refuge that will take you upwind of the emergency.

2. Employees are to remain at the designated safe refuge areas until:

a. All have been accounted for;

b. You are given further instructions, or

c. An “All Clear” message has been received over the radio, in which case you may return to work.



**B. Turn of all Possible Sources of Ignition**

All equipment, tools, vehicles, and other possible sources of ignition should be turned off or otherwise extinguished.

**C. Evacuate on Foot in an orderly Fashion**

Evacuation should be accomplished on foot. All vehicles should be turned off. Typically no one is allowed to operate a vehicle for any reason during an emergency. The Work Crew Leader is responsible for ensuring that everyone in his/her crew knows the specific Job Site Evacuation Procedures.

D. All Clear Signals

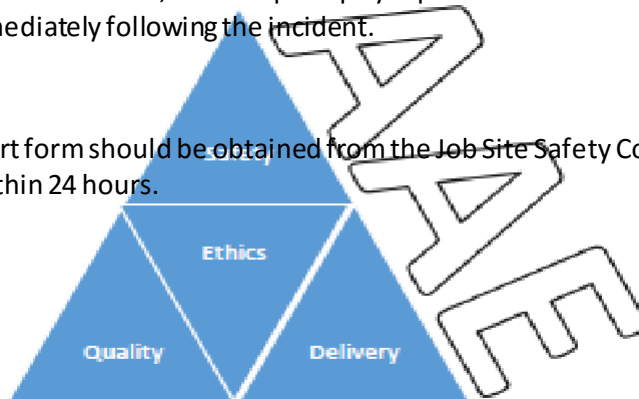
An “All Clear” signal will be sounded to notify everyone when the emergency has been stabilized and clear. At that time, return to your assigned job area or follow the directions of the Work Crew Leader.

INCIDENT/ACCIDENTS

A. Reporting

1. All incidents that resulted in or could reasonably have resulted in injury, damage to equipment, or release to the environment, must be promptly reported to the AAEG Job Site Safety Coordinator immediately following the incident.
2. An incident report form should be obtained from the Job Site Safety Coordinator, completed, and turned in within 24 hours.

B. Investigation

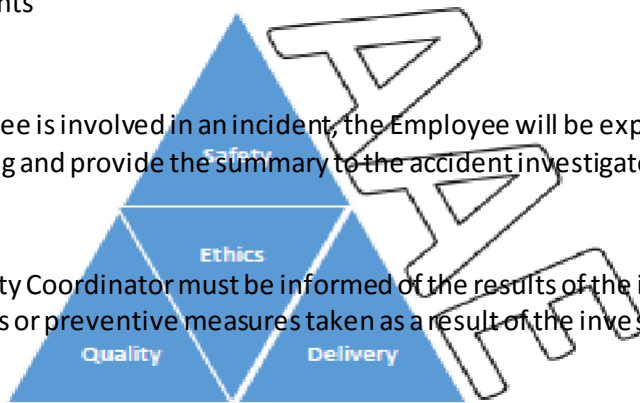


1. At the request of the AAEG Management Team, the following incidents will be investigated to obtain facts relative to the probable cause of the incident and to identify corrective actions to minimize recurrence:
  - a. All incidents that resulted in injury;
  - b. All incidents that resulted in or could reasonably have resulted in a injury or major damage;
  - c. Any other incident for which an investigation is deemed desirable.

2. Any other incident of such magnitude that management deems it necessary will be investigated by an investigation team.
  
3. Any incident investigation that does not require a team effort will be investigated by at least one of the following:
  - a. Job Site Safety Coordinator;
  - b. Branch Safety Officer;
  - c. Corporate Safety Officer; or
  - d. Other designated person(s).

C. Employee Incidents

1. When an Employee is involved in an incident, the Employee will be expected to summarize the incident in writing and provide the summary to the accident investigator.
  
2. The Job Site Safety Coordinator must be informed of the results of the investigation and any corrective actions or preventive measures taken as a result of the investigation.



**ENFORCEMENT BRGITY**

A. Expressed AAEG

All AAEG Employees have the expressed AAEG, right and responsibility to actively enforce all of the programs and procedures described herein. If given instructions that you believe may be contrary to or in conflict with your own best judgment, you should solicit the input of:

1. Your supervisor or designated Job Site Safety Coordinator, and/or
  
2. The Client Contract Coordinator assigned to supervise your work,

- 3. The AAEG Job Site Safety Coordinator or
  - 4. The Area Operator in the unit in which you are working.
- B. No Unsafe Work

No one will be allowed to work in violation of the safe work practices, programs, and procedures described herein as well as other generally accepted safe work practices.

- C. Question Questionable Conditions

When you have a question or are unsure of the level of safety relative to a task that you have been asked to perform, or the conditions under which you are expected to perform those tasks, you are expected to ask your supervisor, your designated Job Site Safety Coordinator, the AAEG Contract Coordinator or a member of the Job Site Safety Coordinator until you are satisfied that the work can be performed safely.

- D. AAEG WILL NOT COMPROMISE YOUR SAFETY OR THE SAFETY OF THOSE AROUND YOU FOR ANY REASON.



## CONCLUSION

This booklet contains minimal safety procedures that should be adhered to while working at an AAEG Job Site. By following the safe work practices outlined in this booklet, you will contribute significantly to the successful and safe execution of work completed at AAEG Job Sites.

The Safety Policies and Procedures of AAEG are a collection of safety requirements adopted over an extended time of continuous safety improvement. AAEG will continue to observe the activities of its workers and those of others in comparable working conditions. When better safety policies and procedures are discovered and proven, they will be adopted.

When arriving at a Client's Job Site, AAEG's Employees will always adhere to the most stringent requirements specified by either the Client's safety procedures or AAEG's safety procedures.

**EMPLOYEE ACKNOWLEDGMENT**

I hereby acknowledge receipt of the AAEG Job Site Safety Handbook.

I have reviewed its contents and agree to abide by all of the rules, safe work practices, programs and procedures described therein, as well as all other Safety and Health and Environmental rules and regulations of a specific AAEG Job Site.

I further agree to perform all tasks which may be assigned to me in a safe manner, using generally accepted safe work practices and keeping the safety of myself and those around me foremost in my thoughts.

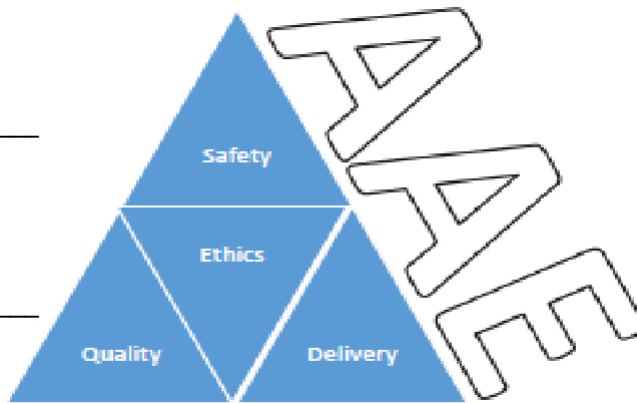
NAME (Please Print)

\_\_\_\_\_

SIGNATURE

\_\_\_\_\_

Printed Name



\_\_\_\_\_

Date

\_\_\_\_\_

Job Site Safety Coordinator Certification