



ALABAMA MUNICIPAL INSURANCE CORPORATION MUNICIPAL WORKERS COMPENSATION FUND, INC.



Loss Control Division

SAFETY IN CONFINED SPACES

Date: _____ Time: _____
Department: _____ Person Conducting: _____

Meeting Objective: To educate employees as to the characteristics of a confined space, the hazards of working in a confined space and protection procedures to be used in a confined space.

Confined spaces are areas in the workplace that are difficult to get into and out of. Examples include storage tanks, bins, crawl spaces, tunnels, wells, vaults, and any underground areas. Working in confined spaces can be extremely dangerous. Thousands of confined space injuries and more than 60 deaths occur each year. That is why OSHA developed a strict standard to protect employees working in confined spaces. The information below should be used to help employees recognize, and take proper precautions when entering confined spaces.

DEFINITION

A confined space is defined as any enclosure which has these characteristics:

- a. It is large enough for a person to enter, either partially or completely, and perform work.
- b. It restricts a person's ability to enter or exit.
- c. It is not designed for continuous occupancy.

Once it has been determined that a confined space exist, a further determination has to made if it is also to be classified as a Permit Required Confined Space. Only one of the four characteristics listed below is necessary for this designation:

- a. It contains or has the potential to contain a hazardous atmosphere.
- b. It contains material (s) that could engulf the entrant.
- c. The internal space is configured in such a way that the entrant could fall, (sloping walls/floors) become wedged and/or asphyxiated.
- d. It contains any recognized serious safety or health hazard.

CHARACTERISTICS OF A CONFINED SPACE

Confined spaces have three main characteristics,

1. They have limited openings for entry and exit:
 - a. These openings are limited by size and location, making it difficult to move equipment in and out of the space.
 - b. Small openings restrict or limit the use of hose mask and self contained breathing apparatus.

- c. In some cases the openings may actually be quite large (pits, excavations, degreasers, etc.) and require a ladder, hoist, or other device to gain access.
2. They have unfavorable ventilation:
 - a. If the air cannot easily move in and out of the confined space freely the inside atmosphere of a confined space can be very different from the outside atmosphere.
 - b. Deadly gasses may be inside the space if it has been used to store chemicals or if organic substances have decomposed in the confined space.
 - c. Hazards may exist if the atmosphere is either oxygen deficient or oxygen rich. An oxygen deficient atmosphere cannot support life and an oxygen rich atmosphere can contribute to increased fire or explosion hazards if an ignition source is present.
3. They are not designed for continuous worker occupancy:
 - a. Confined spaces are not designed or fabricated for workers to enter and exit on a regular basis.
 - b. Confined spaces are designed for product or material storage and to process or transport products and substances.
 - c. Workers may be exposed to chemical or physical hazards within the space.

HAZARDS OF ENTERING AND WORKING IN CONFINED SPACES

- 1 Oxygen Deficient Atmospheres:
 - a. The atmosphere must contain at least 19.5% oxygen to support human life
 - b. Any atmosphere with less than 19.5% oxygen *must not be entered without* either a Supplied Air Respirator (SAR) or a Self Contained Breathing Apparatus (SCBA)
 - c. Can be created by welding, cutting or brazing. They can also be created by chemical reactions (rusting), Bacterial action (fermentation) and by steam cleaning (oxygen displacement and oxidation and also by painting or simple oxygen intake of the occupant).
2. Flammable Atmospheres
 - a. Are created by having an oxygen content above 23.5% or by using pure oxygen to ventilate a confined space.
 - b. Can be created by having a gas, vapor or dust in the proper mixture. If a source of ignition is introduced a fire or explosion can result.
3. Toxic Atmospheres
 - a. The product or material stored in the space may be absorbed into the walls and give off a toxic gas when it is being emptied or when the residue of the stored product is being cleaned out.
 - b. The vapors from cleaning solvents in and of themselves can be very toxic in a confined space.
 - c. Cutting, welding, brazing, painting, scraping, sanding and degreasing can also contribute to creating airborne toxic particles.

PROTECTION AND PROTECTIVE EQUIPMENT FOR CONFINED SPACES.

1. NEVER enter a confined space until all hazards (atmospheric, engulfment, and mechanical) have been identified and the correct procedures initiated.
2. ALWAYS isolate the confined space from unwanted energy sources such or introduction of hazardous substances by using lockout/tag out, blanking, blinding, double block and bleed methods.
3. ALWAYS maintain proper mechanical ventilation in the confined space and make sure the ventilation equipment does not interfere with entry, exit or rescue procedures.
4. NEVER introduce hazards such as welding, cutting, brazing, cleaning solvents, etc. without notifying the area supervisor and making provisions for these hazards.
5. ALWAYS monitor for atmospheric conditions such as oxygen, combustibles, and toxins prior to and during entry.
6. ALWAYS provide barriers to warn unauthorized personnel and to keep entrants safe from external hazards.
7. NEVER re-enter a Permit Required Confined Space once the permit has been revoked until the conditions causing the revocation are eliminated.
8. ALWAYS provide immediate unrestricted communication between entrants and outside attendants remembering to have back up communication if using two way radios.
9. ALWAYS wear the appropriate personal protective equipment, be familiar with its use, operation, and limitations of such equipment and be sure it has been properly maintained and is in correct operating condition.
10. NEVER attempt the rescue of confined space entrants unless you are part of a designated rescue team and have the proper knowledge, skills, and equipment to affect a safe rescue.

At this time, review the types of confined spaces workers may be exposed to and the hazards associated with these spaces. Discuss the correct procedures (atmospheric testing, personal protective equipment needed, etc.) for working in these spaces. Show the warning signs and barriers that keep untrained workers away from confined spaces and review a confined space permit.

SIGNATURES OF ALL THOSE IN ATTENDANCE:

NOTE: This document is not intended to be legal advice. It does not identify all the issues surrounding the particular topic. Public agencies are encouraged to review their procedures with an expert or an attorney who is knowledgeable about the topic. Reliance on this information is at the sole risk of the user.