

Introduction

A confined space is any space that:

- Is enclosed or partially enclosed
- It is not designed or intended for continuous human occupancy, except for the purpose of performing work
- Has restricted entry and exit
- Due to its design, construction or atmosphere it may become hazardous
- Has poor natural ventilation

Source: <http://doshtihome.blogspot.com/2015/10/>

Risks

Never assume a confined space is safe. Some of the risks are:

- Lifetime respiratory damage
- Brain damage
- Your death and/or loss of co-workers and friends

Cautions

Not Always Easy to Recognize

The first step is to identify confined spaces at your work site. Obviously, such things as tanks and vessels are confined spaces, but so is any area that has limited entry or exit. Some of these areas include open-topped water and degreaser tanks, open pits, and deep trenches.

Know the Limits

An Occupational Exposure Limit (OEL) tells you how long you can work in a specific atmosphere for a certain amount of time. Know the limits. Check the MSDS or the OH&S Legislation.

Testing

Atmospheres can only be detected by careful initial and on-going testing with proper equipment. Remember - an atmosphere can become potentially fatal at a moment's notice.

Before entering a confined space, ask yourself

- Do I have the proper training to do the job?
- Do I know what to do if someone sounds the alarm?
- What are the communication and rescue procedures?
- Is all the necessary rescue equipment available?
- Is the confined space isolated?
- Is the confined space ventilated?
- Has it been tested for contaminants and for low or high oxygen levels? When was the last time it was tested?
- What personal protective equipment do I need?
- Has your employer appointed a competent person to assess the hazards?

Plan Your Entry

Before entering a confined space:

- Ensure there is adequate atmospheric testing and monitoring
- Know the procedures - the code of practice governs the practices and procedures to be followed when workers enter and work in a confined space
- Prepare - use the entry permit system, isolate and lockout, clean and ventilate, obtain special equipment
- Choose your safety equipment and clothing - head, hearing, and body protection. Include respiratory protection and rescue equipment such as tripods, lines, and harnesses, and ensure there is a competent worker who undertakes rescue operations.

There are many extra safe work practices and procedures for confined space entry. As well, there are often entry permit systems and Codes of Practice for Respiratory Protective Equipment needed. You need to know all the information BEFORE you enter a confined space.

Invisible Killers

Do you know what an area low in oxygen looks like? Of course not - it doesn't look like anything. It looks just as safe as any other area. That's why you have tools (detection and protection). Even the hazards that you do see are often made worse by a confined space. Rescue is made much more difficult - and rescuers are exposed to the danger too.

Deadly atmospheres in confined spaces can be created by:

- Seeping gases and liquids
- Decaying organic matter
- Nitrogen purging and blanketing
- Improper blanking off of oxygen lines (can produce oxygen enrichment)
- Hot work or oxidation
- Some cold work such as cleaning

Confined spaces can hold many deadly atmospheres:

- Oxygen deficiency - the minimum oxygen content is 19.5%. Atmospheres under this level are not safe.
- Oxygen enrichment - too much oxygen can also be a danger. The maximum oxygen concentration is 23%. In addition, errors in combustible gas detection readings can be caused by oxygen enrichment
- Airborne combustible dust levels - a highly explosive atmosphere can be created with finely ground combustible materials such as grain, carbon, cellulose, fibers, and plastics
- Combustible gases - explosive concentrations can be produced
- Toxic gases - Hydrogen sulphide, carbon dioxide, carbon monoxide, smoke, ammonia, chlorine, sulfur dioxide - all are potentially deadly