

Question, Question, Question

Before entering a confined space, ask yourself:

- Where is the hazard assessment for my review?
- Do I have the proper training?
- Is the confined space isolated?
- Is it ventilated?
- Has it been tested for contaminants and for low or high oxygen levels? When was it last tested?
- What personal protective equipment do I need?
- What other hazards may be present in the confined space?
- Who is the confined space monitor?
- Where is the permit so I can sign in?
- Are tags and signs needed?
- 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?



What is a Restricted Space?

Restricted Space means an enclosed or partially enclosed space, not designed or intended for continuous human occupancy that has a restricted, limited, or impeded means of entry or exit because of its construction. Some examples of a restricted space include:

- An electrical or communication utility vault
- A building's crawl space
- A trench with a temporary protective structure
- A deep excavation requiring ladder or lift access

Working in a restricted space requires:

- A hazard assessment
- Training
- Safety/personal protective equipment
- Emergency equipment
- A communications system

Competent workers must be capable of carrying out each of the activities.

Don't forget—A safe means of entry and exit must be available to all workers required to work in the restricted space.

The restricted space **does not** require a confined space Code of Practice, Confined Space Entry permit, or a confined space monitor.

A restricted space **does** require a hazard assessment, and a competent person in communication with workers.

For more information, refer to current applicable Occupational Health and Safety Legislation.

The Alberta Construction Safety Association's mission is to



provide quality advice and education for the construction industry that will reduce human suffering and financial costs associated with workplace incidents. This brochure is part of a series, **The Toolbox Brochures**, which are available on a variety of safety topics. If you have any questions or comments please contact:

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Confined Spaces



Making Safety A Way Of Life



The Alberta Construction Safety Association

What is a Confined Space?

“Confined space” means a restricted space which may become hazardous to a worker entering it due to:

- An atmosphere that is or may be injurious by reason of oxygen deficiency or enrichment, flammability, explosivity, or toxicity.
- A condition or changing set of circumstances within the space that presents a potential for injury or illness.
- The potential or inherent characteristics of an activity which can produce adverse or harmful consequences within the space.



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/friends

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 they also have limited entry or exit. Some of these areas include pump stations, storm drains and unprotected excavations.

Invisible Killers

Do you know what an area low in oxygen looks like? Of course not—it doesn't look like anything unusual. It looks just as safe as any other area. That's why you have tools (detection and protection).

Even 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.

Creation of Deadly Atmospheres

Deadly atmospheres in confined spaces can be created by:

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

What's in There?

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 23.0%. 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 carbon, cellulose, fibers, plastics and wood.
- **Combustible gases**—explosive concentrations can be produced.
- **Toxic gases**—such as Hydrogen Sulfide (H₂S), Carbon Dioxide, Carbon Monoxide, Smoke, Ammonia, Chlorine, Sulfur Dioxide—are all potentially deadly.

Know the Limits

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

Testing

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



Plan Your Code of Practice

- **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 confined space 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 additional safe work practices and procedures for confined space entry. A Code of Practice for Respiratory Protective Equipment may be required. You need to know all of the information **before** you enter a confined space.

