



# Confined Space Entry Safety

## WHAT IS A CONFINED SPACE

A confined space is any enclosed or partially enclosed space with restricted entry or exit that is not designed or intended for continuous human occupancy. The word 'confined' may suggest 'small,' but not all confined spaces are. Some examples of confined spaces include tanks, access shafts, utility vaults, sewers, pipes, truck or rail tank cars, boilers, manholes, silos and storage bins. Ditches and trenches may also be a confined space when access or egress is limited.

Some of the defining features of a confined space include:

- It is not primarily designed or intended for humans except for the purpose of work.
- It is enclosed or partially enclosed.
- It has a restricted means of entrance and exit by way of location, size, or means.
- It has poor natural ventilation or hazardous atmosphere.
- It may become hazardous due to design, materials, or substances inside, or the work/activities being carried out inside.

## WHAT ARE THE RISKS

Many confined spaces contain hazardous substances or dangerous conditions. Hazards and threats could include:

**Poor Air Quality.** Atmospheres with an oxygen content less than 19.5% (deficient) or more than 23% (enriched) are not safe.

**Toxic Gases.** Hydrogen sulphide, carbon dioxide, carbon monoxide, smoke, ammonia, chlorine, etc. are all potentially deadly.

**Flammable Atmospheres.** A highly explosive atmosphere can be created when finely ground combustible materials, such as grain, carbon, cellulose, fibers, plastics or flammable liquids, are present.

**Mechanical, Electrical, or Physical Hazards.** Examples include moving parts, structural hazards, noise, temperature, and visibility.

**Loose Materials that may Engulf or Smother.** Shifting or collapse of bulk material, barrier failures, etc.

## WHAT CAN WE DO TO PROTECT OURSELVES

The dangers and risks associated with confined spaces are not always obvious. All hazards must be identified and either eliminated prior to entry, or all precautions are taken for the safety of the person entering the confined space. Before entering into any confined space:

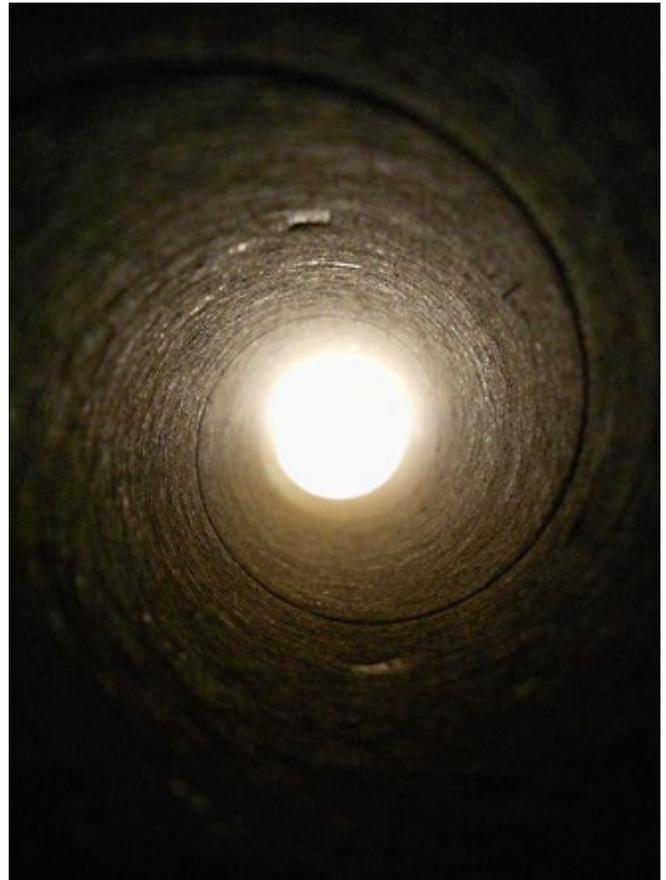
- Conduct a risk assessment and know the practices and procedures.
- Ensure that adequate atmospheric testing and monitoring is being conducted with an approved air quality monitor. Additionally:
  - Ensure that the air monitor is recently calibrated.
  - User must be trained on its operation.
  - Remember that if you are using tubing to extend the reach of the monitor that the operator must wait patiently at each point of the measurement so that the small pump inside the monitor has enough time to draw the sample up the tube to the device so it can be measured.
  - Since the weight of gases are different measurements must be taken at several levels of the space.

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**SAFETY: FIRST. LAST. ALWAYS!**

- Determine the proper Personal Protective Equipment required.
- Ensure a competent attendant is present with an effective emergency response plan. The attendant must have communication with the emergency response team and the person in the confined space at all times.

Above all else, ensure that all personnel involved in the confined space process are competent to do the job safely. Many workers are injured and killed each year while working in confined spaces. An estimated 60% of the fatalities have been among the would-be rescuers. Unless you are trained in confined space hazards and how to control them, never enter a confined space.

Nicole (2020) Toolbox talk: Confined space - GARCO construction - general contractor for commercial construction, General Contractor, Construction Management, Design Build, In-House Design, Garco, Washington. Available at: <https://www.garco.com/toolbox-talk-confined-space/> (Accessed: January 30, 2023).



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Lead. Make a difference. Build a better future!

## OUR VALUES

**Safety:** First. Last. Always!

**Steadfast Integrity:** Be honest. Treat other with respect.

**Exceptional Service:** Align goals. Add value. Develop lasting relationships.

**Commitment to Excellence:** Take ownership. Constantly improve.

**Focus on Team:** Listen. Collaborate. Communicate. Execute.

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