

Confined Spaces in Construction Information for Employees

Confined spaces can present many workplace hazards. They can poison, render unconscious, or even kill people. Examples of hazards in confined spaces:

- Low oxygen levels
- Toxic gases or vapors, such as hydrogen sulfide
- Explosive atmosphere
- Corrosive chemicals
- Electrical hazards, such as exposed wires
- Mechanical hazards, such as machinery with pinch points

What is a confined space?

A confined space is a space that has all the following characteristics:

- Large enough and configured so that an employee can enter it.
- Limited or restricted means for entry and exit.
- Not designed for continuous employee occupancy.

The space is a permit-required confined space (also called a permit space) if it also has any of these characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material that could engulf an entrant.
- Could trap or asphyxiate (choke) an entrant with:
 - walls that converge inward or
 - a floor that slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.



Examples of confined spaces

- Pits (elevator, escalator, pump, valve, or other)
- Manholes (sewer, storm drain, electrical, communication, or other utility)
- Tanks (fuel; chemical; water; or other liquid, solid, or gas)
- Concrete pier columns
- Sewers
- Storm drains
- Vessels
- Cesspools
- Turbines

How to stay safe

Do not enter a confined space if you are not trained in entry or rescue. If someone is in trouble inside a confined space, tell a supervisor. The hazard that sickened or killed the first worker could do the same to you if you try to enter to rescue them.

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Whenever possible, do not enter confined spaces. Instead, use equipment that allows work to be done from the outside. However, if workers must enter, the employer must provide safety measures, such as:

- Your employer must train you on the confined space hazards you may be exposed to.
- Before entry, the employer must test the air inside the confined space using a gas meter. You have the right to watch and know the test results.
- The entry supervisor must complete a permit for each permit-required confined space and post it outside the confined space. Read the permit for details about the confined space, such as:
 - Hazards in the space.
 - Pre-entry air test results.
 - Acceptable entry conditions.
 - Methods used to control the hazards during entry.

Entrants. If your employer authorizes you to enter a permit space:

- Wear a gas meter while inside the confined space. It must measure for:
 - Oxygen levels – below 19.5% causes difficulty breathing; above 23.5% increases risk of explosion.
 - Flammable gas (% LFL) – certain levels could cause explosions in the presence of flame, a spark, or static electricity.
 - Toxic gas, if appropriate for the confined space.
- Get out if a gas meter alarm sounds, you notice a dangerous situation, or the attendant tells you to get out.
- Wear any required personal protective equipment (PPE).

- Wear a supplied-air respirator or SCBA if the atmosphere in the space is immediately dangerous to life and health (IDLH).
- Communicate with the attendant.

Attendants. If you are assigned to be an attendant:

- Stay near enough to the confined space you are assigned to, so that you can perform all duties effectively.
- Communicate with the entrants and watch for signs or symptoms that they may be in trouble.
- Alert entrants to evacuate if you notice something inside or outside the space that could endanger the entrants.
- Alert the rescue team if entrants may need help getting out.
- Do not be distracted, for example, by other work duties or your phone.

Rescue team. If you are assigned to be on the rescue team:

- Practice at least annually on the actual permit spaces or identical spaces.
- Do not enter the space for rescue unless necessary.

More information

This fact sheet only provides a brief overview of hazards and requirements. For more information, see the resources below:

- [Cal/OSHA Confined Space Hazard Alert](#)
- [OSHA - Confined Spaces in Construction](#)
- [Title 8, Article 37 -Confined Spaces in Construction regulations](#)

This document is available with active links at www.dir.ca.gov/dosh/dosh_publications

For questions, employees can contact their nearest Cal/OSHA Enforcement office. Find contact information at www.dir.ca.gov/dosh/DistrictOffices.htm.

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