

Confined spaces—Definition

Explain dangers

The hazards of working in confined spaces are often not recognized until it's too late. For example:

- Four workers died from hydrogen sulphide poisoning in a sewage holding tank.
- A worker was killed by carbon monoxide gas from a gasoline-powered pump used to drain a pit.
- A worker was caught in a mixing tank that was accidentally started while he was inside.

Identify controls

A “confined space” is defined as a place

- a. that is **fully or partially enclosed**
- b. that is not both designed and constructed for **continuous human occupancy**
- c. in which **atmospheric hazards** may occur because of its construction, location, or contents, or because of work that is done in it.

(O. Reg. 632/05)

All three conditions must be met before a space is defined as a confined space.

It must be **fully or partially enclosed** because air does not move in and out of this type of space in sufficient quantities, so there is potential for a hazardous atmosphere to be generated inside it.

It must not be designed or constructed for **continuous human occupancy**, meaning that the space is not for people to work in on a regular basis. It is usually meant to store material, transport products, or enclose a process. But occasionally, some work must be done inside it.

Atmospheric hazards may occur in it, which means that one of the following conditions apply:

- An accumulation of flammable, combustible, or explosive agents
- Less than 19.5% or more than 23% oxygen
- An accumulation of contaminants that could result in short-term health effects that pose an immediate threat to life, or interfere with a person's ability to escape unaided.

Typical locations include the following:

- In chemical and petrochemical plants, confined spaces include tanks, vessels, pipes, sumps, and pits.
- Confined spaces in heavy industrial plants can be roasters, digesters, mixers, bins, and conveyors.
- Sewage-handling and water-treatment plants include various kinds of confined spaces, from settling and holding tanks to maintenance holes and wells below floor level.
- For utility workers, confined spaces include cable chambers, hydro vaults, sewer systems, water towers, excavations, trenches, and storage tanks.
- In general construction, confined spaces include vaults, maintenance holes, tanks, and other spaces that meet the definition.

Physical hazards such as energized electrical conductors, operating equipment, stored energy, pressurized pipes, noise, and heat sources must be controlled in confined spaces through lockout and tagging.

You must also control other dangers, including those you may introduce into the space by the work being performed. Such hazards include hazardous dusts, chemical vapours, engine exhaust, and welding fumes.

Other spaces that don't fall under the definition of confined space but need to be assessed and controlled include

- Trenches and excavations
- Basements
- Halls
- Small rooms.

These spaces must be adequately ventilated to ensure hazardous materials and atmospheres are not present and do not accumulate from the work being performed. Workers have been overcome and killed by solvent and adhesive vapours in small, poorly ventilated rooms.

Demonstrate

Identify confined spaces on the project with the crew and discuss potential dangers.