

Common Types of Confined Spaces

Introduction

Confined spaces can be complicated and anyone, in any industry, can be exposed to working in and around them. Confined spaces should be considered as some of the most dangerous hazards at the workplace. The potentially fatal consequences of entering a confined space cannot be overstated. Simply put, working within a confined space can be very dangerous. Even common tasks, such as performing routine inspections, can be potentially fatal if the proper precautions are not taken.

Confined spaces come in different sizes, in different locations of a facility or job site, some may be obvious and others less so, and there may be different hazards in each one.

As with any workplace hazard, confined spaces need to be treated with a high level of respect in order for workers to remain safe. It is easy for workers at a job site to become complacent about this hazard if not all these locations are identified. Therefore, the first step in this process is to understand what constitutes a confined space, then identify confined spaces within the workplace.

Definition of Confined Spaces

A review of different workplace confined space programs and applicable regulations finds that throughout the diverse regions of the world confined space are not all defined in the exact same fashion. Despite the differences in wording, there are commonalities to most of the various definitions for confined spaces.

Generally speaking, a confined space is a partially or fully enclosed space which contains the following five characteristics:

Characteristic #1 – Is large enough and configured such that a person can bodily enter & perform work.

In order for this space to present a danger to a person, it must be big enough to allow the person to enter fully or partially into the space. For example, the fuel tanks located in the wings of a passenger aircraft are large enough to permit a worker to partially enter the space, but in some cases are not large enough to allow

a complete entry due to the instrumentation within the tank.

Characteristic #2 – Has limited or impeded openings for entry and exit

This is generally taken to mean that there are limited ways in and out of the area, or that getting in and out is unusually difficult. For example, entering a vessel through a hatch may require squeezing or crawling through a tight space or small opening.

Characteristic #3 – Is not designed for continuous human occupancy.

If a space was never designed for people to work inside of it for long periods of time, it might not possess the conditions necessary to support human life. For example, a worker could enter and remain within a well-ventilated sewer system for several hours safely, but the sewer system is not designed to support human life for several consecutive days of occupancy.

Characteristic #4 – The provision of emergency response services is compromised.

This describes spaces in which the internal configuration of that space could impede or delay the provision of first aid and rescue services. For example, a worker rendered unconscious inside of an air duct system may require a complex and lengthy rescue system to be extracted from the maze-like structure before first aid can be administered.

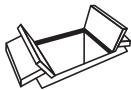







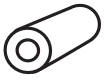


Characteristic #5 – Contains a hazard which may pose an illness or injury.

This relates to spaces which have a hazard, or may have a hazard introduced, based on its location, design, construction, contents or atmosphere. These hazards may also be caused by materials or substances present in the space before entry or by ones brought into the space by a worker completing a task. For example, the sparks generated from grinding work completed within a vessel can cause an explosion if an oxygen-enriched atmosphere exists within the vessel.

Examples of Confined Spaces

The following are examples of confined spaces that are found commonly in many industries. This a guide only. These examples should not be used as a the only means of identifying and risk assessing confined spaces in the workplace. This list is not exhaustive. Specific country

legislation must be followed during the evaluation, planning and access of a confined space. The evaluation and assessment of confined spaces should be made only by a competent person knowledgeable and experienced with confined spaces.

Types of Confined Space	Frequency of Entrance (# of on-site spaces and entrance frequency)	Complexity	Number of spaces	Common vs Industry Specific Variation
 Utility Vault, Sub-cellars and Inspection Chambers	Monthly	Easy	Many	Common
 Manhole	Monthly	Easy	Many	Common
 Elevator Pit/Shaft	Annual	Moderate	Several	Common
 HVAC Duct Work	Annual	Complex	Many	Common
 Storage Tank	Annual	Complex	Many	Industry Specific
 Reaction Vessels	Monthly	Complex	Many	Industry Specific
 Trench Box	Quarterly	Easy	Several	Industry Specific
 Culverts	Monthly	Moderate	Several	Common
 Tunnels	Quarterly	Complex	Several	Common
 Waste Water Treatment	Daily	Moderate	Few	Industry Specific
 Alkylation unit	Annual	Very Complex	Many	Industry Specific



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