



Between 2011 and 2018, more than 1,000 U.S. employees died due to permit-required confined space incidents, with Illinois having the 6th highest rate. Occupations of the fallen workers range from construction laborers and farmers to truck drivers and maintenance personnel. OSHA standards 1926.1203 (Construction) and 1910.146 (General Industry) regulate the hazards associated with permit-required confined spaces. The most common hazards involve an oxygen-deficient atmosphere and toxic gases. However, engulfment from flowable materials (grain, flour, liquid), entrapment caused by sloping edges, electricity, high-pressure fluids and gases, or mechanical energy, may also pose Immediately Dangerous to Life and Health (IDLH) conditions. OSHA's Lock-out Tag-out standard 29 CFR 1910.147 addresses most hazards that frequently occur in parallel with permit-required confined space hazards.

OSHA's permitted spaces post-incident reports, available on their website, read like horror stories with victims burned, ground up by augers, crushed, or battered by industrial mixers. These tragic incidents could be prevented by properly assessing the worksite, restricting unauthorized access, and implementing an effective safety rescue plan.

All permit-required spaces are confined spaces, but most confined spaces do not require permits to access. A confined space is an area large enough for employees to enter, has limited means of entry or exit, and is not intended for continuous occupancy. Typical confined spaces include tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment housings, ductwork, and pipelines. OSHA clarified that entering a confined space involves inserting any extremity or part of the body past the threshold of the space. An access port or opening large enough for a worker to insert their hand is considered an opportunity to enter the space. A building's basement, attic, and crawlspace often do not meet the definition of having limited means of entry or egress, while elevator pits do. The key point in the human occupancy section is whether employees can safely occupy the space under normal operating conditions.

Environments that are classified as Immediately Dangerous to Life or Health (IDLH), or that contain recognized serious hazards, elevate the classification of a confined space to a permit-required space. As indicated, employees must complete a permit in accordance with the company's written program prior to entering such hazardous spaces. While it is beyond the scope of this informational article to delineate all the specific requirements for a permit-required confined space, there are certain fundamental OSHA requirements that all employers are obliged to adhere to.



Employers are required to conduct a thorough assessment of their worksite to determine whether specific spaces qualify as permit-required confined spaces. If a space is classified as such, the employer must notify all potentially exposed workers of its existence, location, and associated hazards. This notification can be effectively accomplished through the posting of appropriate warning signs. In instances where employees are not expected to enter or perform work within these permit spaces, measures must be implemented to prevent unauthorized entry.

Furthermore, all contractors hired to perform work on the site must be informed of the locations of permit spaces. Contractors that are required to enter these spaces must be briefed on specific work practices, including any previous experiences and potential hazardous conditions associated with the spaces. This requirement aligns with the standards set forth by OSHA's Lock-out Tag-out standard.

If an employer requires workers to enter permitted confined spaces, a panoply of administrative and engineering controls must be implemented. These measures include, but are not limited to, the development of a written program, extensive training of personnel, procurement of specialized equipment with continuous calibration, and the establishment of a rescue plan. If a rescue plan merely involves contacting emergency services (911), such a plan is considered inadequate and may significantly increase the risk of fatalities or severe injuries. Prior to relying on public emergency response services for rescue, employers must carefully assess prospective responders to ensure they can provide timely assistance and possess the necessary skills and equipment to execute the rescue effectively.

This article is meant to help identify confined spaces and bring awareness to the hazards of permit-required spaces. If you believe your worksite might have confined spaces or need help evaluating or addressing the hazards posed by permitted confined spaces, contact the Illinois Department of Labor's On-Site program. We exist to assist small and medium-sized employers in recognizing and eliminating hazards both big and small. This free program provides the support and guidance needed to identify hazards, implement hierarchy of controls, and establish a lasting safety and health program. Visit <https://worksafe.illinois.gov/> or contact Harry (Hap) Hileman at the Illinois Department of Labor by phone at 217-993-2111 or email harry.hileman@illinois.gov for more information.



* The 21(d) On-Site Consultation Cooperative Agreement is funded by a federal grant, constituting ninety percent of the overall budget. State funds finance ten percent.



Source:

OSHA Fact Sheet – Is 911 your Confined Space Rescue Plan?

OSHA Fact Sheet – Confined Spaces in Residential Construction

OSHA Pub 3138-01R – Permit-Required Confined Spaces

DOL eLaws Advisors - <https://webapps.dol.gov/elaws/confined.htm>