

Confined Spaces

Before entering confined spaces it is important to recognize what constitutes a confined space, the potential hazards, and what precautions and procedures must be followed to safely enter them. Northwestern's [Confined Space Program](#) establishes a process for recognizing and controlling or eliminating the hazards associated with working in confined spaces.

What makes a space a 'confined space?'

A confined space has limited means for entry or exit, is large enough for entering and working, and is not designed for continuous worker occupancy. Northwestern has over 140 confined spaces between the Evanston and Chicago campuses, which include steam vaults, hot/chilled water vaults, manholes, tunnels, pits, boilers, lift stations, ventilation ducts, and elevator pits. No matter the size, it is important to remember that they are all dangerous and can cause serious injuries and even death if precautions are not followed.

Why are confined spaces different than other work areas?

Confined spaces are dangerous because they may contain hazards normally not found in open work locations (e.g., mechanical rooms) which may impede your ability to escape the space in an emergency. Examples of hazards in confined spaces include:

- Toxic atmospheres from breakdown of organic material and lack of ventilation
- Oxygen-deficient atmospheres from oxidation (i.e., rusting metal) and lack of ventilation
- Entrapment due to the configuration of the space (e.g., piping or equipment may trap you)
- Engulfment (i.e., suffocation) from flowable materials such as water or steam



Confined space entry requirements

In order to protect you and your colleagues from the dangers associated with confined spaces, a safe operating procedure (SOP) and entry permit are required for any entry into a confined space where serious hazards are present or may become present, such as steam or a dangerous atmosphere. The SOP will ensure:

- Steps are identified to control or eliminate the hazards and to perform the work safely
- Identification of personal protective equipment (PPE)
- Emergency rescue procedures are established
- Notifications to campus partners, such as Risk Management, University Police, and Fire Department

The entry permit must be completed prior to entry and verifies that all preparations, such as hazardous energy isolations (lockout/tagout), methods of communication, and forced-air ventilation, are complete. The permit must be authorized by the entry supervisor before any entry.

All personnel involved in confined space entries must be trained. If your job requires you to be involved in confined space entries and you have not received Northwestern's in-person training, please contact Chris Yohe at 847.467.6342 or chris.yohe@northwestern.edu.

Stay informed

Danger signs (pictured left) are intended to protect you and others from the hazards associated with confined spaces. It is important that everyone adheres to the sign requirements to stay safe.

Learn more: Confined Space [Awareness](#) and [Entry Supervisor](#) training
Report all injuries on the Risk Management [website](#) or 847.491.5084

Tips for Success When Talking to Your Team

Preparation is Key: Keep the topic relevant. Work with your team to review the various types of confined spaces in your workplace and discuss the potential hazards and control methods to stay safe when entry is necessary to perform work.

Stay Positive: Keep the focus on what can be done to create a safe workplace, instead of focusing on what has gone wrong in the past.

Share a Story, Ask for a Story: Storytelling is a powerful method to convey information. Stories from your employees make the topic even more relatable.

Confined space myths

There are many myths about confined spaces because not everyone understands the definition, potential hazards, and entry requirements. Here are some common myths and why they are incorrect:

- ❖ **Myth #1:** A space with two or more entry or exit points is not a confined space. *False.* The number of entry or exit points is not a consideration when determining if it is a confined space. In fact, many confined spaces have multiple entry or exit points.
- ❖ **Myth #2:** All confined spaces require a permit to enter. *False.* A permit is required when the confined space contains, or has the potential to contain, a serious safety hazard. Examples include moving parts where the entrant could get trapped or hazardous energy such as pressurized water or steam.
- ❖ **Myth #3:** The atmosphere within all areas of a confined space is the same. *False.* Toxic and flammable gases or oxygen-deficient atmospheres can occur at any level or area within a confined space because gases can be lighter or heavier than air.

For Additional Information

Contact Gwen Butler, Director, Environmental Health & Safety, at 847.491.4936.

Do you or your team have a safety story you'd like to share? Contact Risk Management at gwen.butler@northwestern.edu for details.