

Confined Space

The purpose of The University of Alabama in Huntsville Confined Space Program is to establish procedures and methods for safe entry into confined spaces. This program covers employees and students who may enter confined spaces in the course of their academic work. A confined space is any location that has limited openings for entry and egress, is not intended for continuous occupancy, and is so enclosed that natural ventilation may not reduce contaminant levels to below acceptable values. Examples may include: manholes, stacks, pipes, storage tanks, boilers, tank cars, pits, sumps, etc. Entry into confined spaces without proper procedures could result in injury or death due to such things as: lack of oxygen; flammable or explosive atmosphere; toxic materials; or other hazards such as steam or high pressure (National Fire Protection Association, 2016).

Types of Confined Spaces

There are two basic types of confined spaces; those that require a written permit to enter and those that do not. There are procedural similarities to enter each type but those requiring a written permit necessitate more stringent controls.

Entry Permit Required Spaces

Entry permit required spaces meet the definition of a confined space plus any one of the following four characteristics:

- Contains or has a reasonable potential to contain a hazardous atmosphere.
- May contain a material with the potential to engulf someone in the area.
- Has an internal configuration such that a person could be trapped or asphyxiated?
- Has other safety or health hazards that could harm a person.

Examples of permit required spaces on campus include:

- Inside boilers
- Sanitary sewer manholes
- Storage tanks
- Air tunnel vessel
- Inside pipes or tunnels
- Energized electrical manholes
- Active steam manholes

Entry Procedures (Permit Required Spaces)

Entry procedures for permit required confined spaces are very specific and necessary to prevent serious injury or possible death.

- Complete the confined space entry permit.
- Ventilate the space with a positive pressure blower for 30 minutes.

- Check the space with a four function (LEL, H₂S, CO, O₂) gas meter. If oxygen is below 19.5%, meter will NOT WORK.
- If four function gas meter reads safe levels of all four categories (Below 10% LEL, CO 35ppm, H₂S 10ppm, Minimum 19.5% O₂, and Maximum 22% O₂) Prepare to enter the space.
- Prior to entering the space established an emergency evacuation system and designate an outside attendant.
- Continuously ventilate and monitor the space while occupied.
- If after 30 minutes of ventilation the space shows any level of LEL, CO, and H₂S other than zero; an O₂ % less than 19.5 do not enter and contact EHS.
- If at any time during occupancy of the space the meter goes into alarm mode exit immediately and contact EHS.

Non Permit Required Spaces

Non permit required confined spaces meet the definition of a confined space but do not have any of the four additional characteristics. Examples of non-permit spaces on campus include:

- Telecommunication manholes
- Storm sewers
- Elevator pits
- Mechanical pits
- Non energized electrical manholes
- Non active steam manholes

Entry Procedures (Non Permit Required Spaces)

Entry procedures for non-permit required spaces are not as stringent as those for spaces requiring a permit. However, they are just as important to protect the health and safety of persons who enter the space.

- Ventilate the space with a positive pressure blower for 10 minutes.
- Check the space with a four function (LEL, CO, H₂S, O₂) gas meter.
- If four function gas meter reads safe levels of all four categories (Below 10% LEL, CO 35ppm, H₂S 10ppm, Minimum 19.5% O₂, and Maximum 22% O₂) Prepare to enter the space.
- Continuously ventilate and monitor the space while occupied.
- If at any time during occupancy of the space the meter goes into alarm mode exit immediately and contact OEHS.

The [Confined Space Entry Permit](#) form is available from OSHA.