

# TOOLBOXTOPICS

Company Name \_\_\_\_\_  
Job Name \_\_\_\_\_

Date \_\_\_\_\_

## ARE TRENCH EXCAVATIONS CONFINED SPACES?

The answer to this question is not as obvious as you may think. Let's review some terminology. By OSHA definition, a *confined space* means the space is:

large enough and so configured that an employee can enter and perform assigned work;  
has limited or restricted means for entry or exit;  
is not designed for continuous employee occupancy.

A trench excavation would certainly seem to meet the confined space criteria. By OSHA definition, a *trench excavation* means;

a narrow excavation (in relation to its length) made below the surface of the ground;  
in general, the depth is greater than the width;  
but the width of a trench (measured at the bottom) is not greater than 15 feet.

How Does a *Permit-Required Confined Space* relate to a trench excavation? A *permit-required confined space* has one or more of the following characteristics:

(1) Contains or has the potential to contain a hazardous atmosphere.

Oxygen deficient, toxic, or flammable atmospheres can occur in trenches, displacing the normal air. Some of the most common gases of concern are carbon monoxide, methane, and hydrogen sulfide. These gases should be suspected whenever trenches are near combustion engines, sewage lines, landfills, swamps, leaking underground storage tanks, or when decomposing organic matter is nearby. Hydrogen sulfide is heavier than air and may fill the trench starting from the bottom. OSHA law states that if hazardous atmospheres could reasonably be expected to exist, the atmospheres shall be tested before employees enter excavations greater than 4 feet in depth.

(2) Contains a material that has the potential for engulfing an entrant.

(3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.

Trenches without adequate sloping, or other protection from collapse, create potential for entrants to be engulfed in a cave-in of the surrounding earth. Excessive rain water, ground water, or liquid from leaking or damaged pipes also may create conditions for engulfing trench entrants, which meets the criteria for both 2 and 3 above.

(4) Contains any other recognized serious safety or health hazard.

In addition, access into trenches over 4 feet in depth can usually be accomplished only by ladder, which poses known risks of slipping and falling. Entrants could also be struck by excavation machinery or by falling materials from overhead.

By now you realize that a trench excavation may indeed present many of the hazards of a permit-required confined space. In general practice, all trench excavations over 4 feet in depth should be considered as confined spaces until all of the potential, associated hazards have been ruled out by a competent person.

Safety Recommendations: \_\_\_\_\_

Job Specific: \_\_\_\_\_

Topics: \_\_\_\_\_

Attended by: