

What defines a trench from an excavation? What are some of the hazards associated with digging excavations and trenches? When does a trench or excavation become a confined space?

Excavation and Trenches

An excavation is defined as any dug-out area of ground other than a trench, tunnel or excavated shaft as a result of removing material.

A trench is an elongated, dug-out area of land in which its depth exceeds its width. Trenches can be extremely dangerous with significant hazards that must be controlled in order to perform work safely.

Hazards

Proper planning is important when a groundbreaking operation is going to take place. Many hazards can be eliminated or mitigated properly when identified in the planning stage of digging operations.

Common hazards associated with this work include location of site, surrounding property, structures and people in and near the site, overhead clearance for machinery, weather conditions, ground conditions and amount of time the trench or excavation will be exposed.

One of the biggest risks of working in a trench is the potential for a cave-in. When the walls of a trench suddenly collapse, soil can quickly fill the excavated space, exerting tremendous pressure on anything in its path.

How to Protect Workers

Before you dig, know your soil type and the appropriate sloping and shoring to use. Soil type identification by a competent person is necessary to determine soil stability.

Structural integrity of the edges of an excavation or trench can be maintained by sloping and/or shoring.

Preplan the location of the spoil pile as well as any new material on site.

The spoil pile material needs to remain one metre from the edge of the excavation and not have a slope greater than 45 degrees.

Watch for overhead power lines and ensure that all underground facilities, utilities and pipelines have been properly located.

Be proactive when safeguarding trenches and excavations so workers and site visitors are aware of the hazard. Use barricades, flagging and guardrails where appropriate.

Proper housekeeping is very important due to the narrow confines of the trench. Ensure no debris or materials block exit points in case of an emergency.

Use spotters when appropriate and barricade the hazard at the end of the day.

Know if Your Trench or Excavation is Considered a Confined Space

A confined space is defined as an enclosed or partially enclosed space that is not primarily designed or intended for human occupancy, except for the purpose of performing work, and has restricted means of entrance and exit.

A trench is considered a confined space when it is deeper than 1.2 metres because it has limited access and egress, and is not designed for continuous human occupancy.

As a result, safety precautions that apply to confined space entry, such as air monitoring and ventilation, apply to trenching operations.

Also, when a worker is working in or around a trench greater than 1.2 metres, the employer must ensure that protection measures against cave-ins or sliding material are installed, and a competent employee acting as a safety monitor must be used.