

TOOLBOX TALK #20

TRENCHING AND EXCAVATIONS

Many workers die in trench, excavation, or ground collapse. Cave-ins pose the greatest risk and are much more likely than other excavation-related accidents to result in worker fatalities. An excavation is any man-made cut, cavity, trench or depression in the earth's surface formed by earth removal. A trench (or trench excavation) is 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 its bottom, is not greater than 15 feet.



In addition to cave-ins, other potential hazards include falls, falling loads, hazardous atmospheres and incidents involving mobile equipment. Two cubic yards of soil can weigh about 6000 lbs. or as much as a small car. An unprotected trench is an early grave. Do not enter an unprotected trench.

Trenches 5 feet deep or greater require a protective system unless the excavation is made entirely in stable rock. If the trench is fewer than five feet deep, a competent person may determine a protective system is not required. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer.

OSHA standards require employers ensure trenches (before worker entry) are inspected by a competent person daily and as conditions change, to ensure elimination of excavation hazards.

OSHA standards require safe access and egress to all excavations, including ladders, steps, ramps or other safe means of exit for employees working in trench excavations four feet deep or deeper. These devices must be located within 25 feet of all workers.

Some general trenching and excavation rules are:

- Keep heavy equipment away from trench edges.
- Identify other sources that might affect trench stability.
- Keep excavated soil (spoils) and other material at least 2 feet from trench edges.
- Know where underground utilities are located before digging.
- Test for atmospheric hazards, such as low oxygen, hazardous fumes, and toxic gases when greater than 4 feet deep.

- Inspect trenches at the start of each shift and following a rainstorm or other water intrusion.
- Do not work underneath suspended or raised loads and materials.
- Inspect trenches after any occurrence that could have changed conditions in the trench.
- Ensure personnel wear high-visibility or other suitable clothing when exposed to vehicular traffic or mobile earth-moving equipment.