EXCAVATION AND TRENCHING FACT SHEET

What is the difference between an excavation and a trench?

OSHA defines an excavation as any man-made cut, cavity, trench or depression in the earth's surface formed by earth removal. This can include excavations for anything from cellars to highways. A trench is defined as a narrow underground excavation that is deeper than it is wide, and no wider than 15 feet (4.5 meters).

What are the dangers of trenching and excavation operations?

Trenching and excavation work presents serious hazards to all workers involved. Cave-ins pose the greatest risk and are much more likely than other excavation-related accidents to result in worker fatalities. Other potential hazards include falls, falling loads, hazardous atmospheres and incidents involving mobile equipment.

What standard applies and what does the standard cover?

The Excavations Standard is found at 29 CFR 1926 Subpart P. The rule applies to all open excavations made in the earth's surface, including trenches. Strict compliance with all sections of the standard will prevent or greatly reduce the risk of cave-ins as well as other excavation-related accidents.

What kinds of excavations and trenches are not covered?

The standard does not apply to house foundation/ basement excavations, including those that become trenches by definition when constructing formwork, foundations or walls. For this exemption to apply, all the following conditions must exist:

- The excavation is less than 7½ feet (2.5 meters) deep or is benched for at least 2 feet (.61 meters) horizontally for every 5 feet (1.52 meters) or less of vertical height;
- The bottom of the excavation, from the excavation face to the formwork or wall, is at least 2 feet (.61 meters) wide, and wider if possible;
- No water, surface tension cracks or other environmental conditions reduce the excavation's stability;
- No heavy equipment is vibrating the excavation while employees are in it;
- Soil, equipment and material surcharge loads are no closer to the top edge of the excavation than the excavation is deep. When you use front-end loaders to dig the excavations, place the soil surcharge load as far back from the edge of the excavation as possible, but never closer than 2 feet (.61 meters);
- The fewest crew members possible are performing the work; and
- Workers spend the minimum time possible in the excavation.

This exemption does **not** apply to utility excavations or trenches, which are covered by 29 CFR 1926.652.

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1101 Mail Service Center, Raleigh, NC 27699-1101
(919) 807-2796 or 1-800-625-2267

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What hazards should be considered when assessing an excavation?

A safety checklist may prove helpful when you consider specific site conditions such as the following:

- Traffic
- Proximity and physical conditions of nearby structures
- Type of soil
- Surface and ground water
- Location of the water table
- Overhead and underground utilities
- Weather

You can determine these and other conditions through jobsite studies, observations, test borings for soil type or conditions, and consultations with local officials and utility companies. This information will help you determine the amount, kind and cost of safety equipment you will need to perform the work in the safest manner possible.

How can you prevent cave-ins?

OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by

- Sloping or benching the sides of the excavation,
- Supporting the sides of the excavation, or
- Placing a shield between the side of the excavation and the work area.

Designing a protective system can be complex because you must consider many factors: soil classification, depth of cut, water content of soil, changes due to weather and climate, or other operations in the vicinity. You are free to choose the most practical design approach for any particular circumstance. Once you have selected an approach, however, the system must meet the performance criteria in the standard.

Where can I find more information?

Please review our Excavation and Trenching Subject Index.

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