

CONNER STRONG & BUCKELEW

UTILITY & TRANSPORTATION CONTRACTORS ASSOCIATION
UTCA
Constructing a Better New Jersey
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PLAYINGITSAFE

SAFETY SOLUTIONS FOR YOUR BUSINESS

TRENCHING AND EXCAVATING RULES BY THE NUMBERS

To ensure your health and safety, it's important for employees to have an understanding of various rules related to trenching safety.

Let's examine some of the trenching and excavating rules by the numbers:

1

THE 18-INCH RULE

In situations where sloping is being used in combination with protective systems, but the protective system does not reach ground level, shoring or shielding must extend a minimum of 18 inches above the vertical side of the trench.

2

THE 2-FOOT RULE

Those working around a trench must keep soil piles and heavy equipment at least 2 feet away from the edge of trenches. This helps to prevent cave-ins and crushing injuries.

3

THE 4-FOOT RULE

For your safety, access and egress to all excavations will be provided, including ladders, steps, ramps or other safe means of exit for employees working in trench excavations 4 feet or deeper. Additionally, atmospheric testing is required before workers enter an excavation greater than 4 feet in depth where an oxygen deficiency or a hazardous atmosphere is present or could reasonably be expected.

4

THE 5-FOOT RULE

Trenches 5 feet deep or greater require a protective system, unless the excavation is made entirely in stable rock. Protective systems are determined by the designated competent person and refer to sloping, shoring and shielding. If the trench is less than 5 feet deep, a competent person may determine that a protective system is not required. If you have questions regarding who the employer-designated competent person is, ask your supervisor.

5

THE 20-FOOT RULE

Trenches 20 feet deep or greater require protective systems designed by a registered professional engineer.

UNDERSTANDING PROTECTIVE SYSTEMS IN TRENCHING AND EXCAVATING

Excavations are any man-made cuts, cavities, trenches or depressions formed by earth removal. Of these, trenches—narrow excavations made below the surface of the ground—create the most significant workplace hazards, particularly as they relate to:

- Cave-ins
- Hazardous atmospheres (e.g., carbon monoxide, noxious gas, vapors or a lack of oxygen)
- Falls (e.g., a worker accidently falls into a trench and injures themselves)
- Floods or water accumulation
- Mobile equipment (e.g., equipment operated or stored too close to the excavation site falls into the trench)

Even with the proper protections in place, trenches naturally want to refill themselves, which can create major cave-in hazards for those unprepared. As such, it's important to have an understanding of the different protective systems used to safeguard workers.

SHORING

Shoring involves installing aluminum, hydraulic or other types of supports to prevent soil movement and cave-ins. Shoring systems typically consist of posts, wales, struts and sheeting.

Shoring can help prevent the movement of excavated walls, soil, underground utilities, roadways and foundations, improving worker safety in trenches.

There are several kinds of these systems, with hydraulic and timber shoring systems being the most common.

BENCHING AND SLOPING

Benching and sloping refers to excavating the sides of an excavation to form one (sloping) or a series (benching) of horizontal levels or steps.

Sloping, if done correctly, removes the risk of cave-ins by sloping the soil of the trench back from the trench bottom. Slope angles will vary depending on the type of soil around the trench.

SHIELDING

Shielding refers to the use trench boxes or other types of supports to prevent soil cave-ins. These shields and supports are typically designed or approved by a registered professional.

Trench boxes are different from shoring because, instead of supporting the trench face, they are intended primarily to protect workers from cave-ins and similar incidents.

Shields can be permanent structures or can be designed to be portable and moved along as work progresses.

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