

Tools for Life – Weekly Health & Safety Meeting



Home Healthy - Home Safe

Date: June 2022

Trenching and Excavation Safety

An excavation is a cavity in the earth's surface, intentionally formed via earth removal. A trench is a specific kind of excavation. In general, the depth of a trench is greater than the width. Work that involves trenching and excavation can be extremely dangerous and without proper precautions they can prove to be deadly. In fact, according to OSHA, two workers are killed every month in trench collapses. Trenching and excavation activities pose risks for various reasons. Please reach out to your safety manager for help evaluating this type of work and refer to Apollo Industrial Health and Safety Procedure 26 when working in or around excavations.

Common Trench Safety Measures

- Trenches with a depth of five feet (four feet in WA St.) or more require a protective system unless the excavation is made entirely of stable rock.
- Soil types can be determined by a competent person and are classified as A, B, and C. C being the most unstable soil.
- Trenches with a depth of twenty feet or more require a protective system that is designed or approved by a professional engineer.
- All excavation operations require a competent person that is a trained individual who can identify existing and predictable hazards within a work site. A competent person is also authorized to make changes that correct and eliminate any found hazards.
- A competent person must inspect all trenches at the beginning of every workday, and whenever the condition of the trench changes.
- Excavations require safe access (including ladders, steps, ramps, or other means of exit) for employees and must be located within twenty-five feet of all workers.

General Trenching and Excavation Rules

- Keep heavy equipment away from the edges of the trench. Also, keep excavated soil (spoils) and other materials at least 2 feet from trench edges. This is crucial to preventing cave-ins.
- Be aware of the space surrounding the trench, and any objects or environmental fixtures that could affect trench stability.
- Call 811 before digging to identify underground utilities before digging begins.
- Test for atmospheric hazards (such as low oxygen and toxic gases) when the trench is deeper than four feet.

Protective Systems:

- Benching is a protective system that involves excavating the sides of the trench that results in a step-like appearance along the sides of a trench. This is only approved in Type B or Type A soil.
- Sloping is a protective system that cuts back the trench wall at an angle inclined away from the excavation.
- Shoring is a protective system that requires the installation of supports (typically aluminum hydraulic) to prevent soil movement and cave-ins.
- Shielding is a protective system that uses trench boxes or other types of supports to prevent soil movement and cave-ins.

To determine the appropriate protective system for a trench, one must consider the soil classification, trench depth, climate, surcharge loads, and other operations in the vicinity.

Discussion Points/Quiz Questions:

1. Can anyone be identified as a competent person for trenching and shoring excavations?
2. On average how many individuals are killed every month in trench collapse?
3. Are all soil types the same? What is the most unstable?