What are the Most Important Excavation and Trenching Safety Factors?

1. Inspection guideline; vibrations; training.
2. Protective systems; pre-planning; soil types
3. Protective systems; pre-planning; inspection guidelines
4. Competent person; regulatory; training.

ANSWER

Protective systems; pre-planning; inspection guidelines

WHY IS IT RIGHT

An excavation is any man-made cut, cavity, hole, trench, or depression made in the earth’s surface by the removal of soil. Workers in excavations can be exposed to cave-ins, engulfment, hazardous atmospheres, and falls.

Cave-ins are the greatest risk to workers in an excavation or trench. Other hazards include falling loads, moving equipment, falls, confined space hazards, and hazardous atmospheric conditions.

Prevention

There are procedures and protocols that must be followed by excavation and trench workers. Too often tragedy occurs when these protocols and procedures are not followed. The answer **protective systems.**

Designing a protective system requires consideration of many factors, including: soil classification, depth of cut, water content of soil, weather and climate, and other operations in the vicinity. Choose the most practical design that will provide the necessary protections. The most common protective systems are:

- Sloping – cutting back the trench wall at an angle away from excavation.
- Shoring – supporting the walls of the trench by installing wood or metal cross-braces to prevent the soil from caving in.
- Shielding – using trench boxes placed in the excavation to prevent the sides from collapsing.

Pre-planning

Waiting until after the work starts to correct mistakes in shoring or sloping slows down the operation, adds to the cost of the project, and makes a cave-in or other excavation failure more likely.

Before preparing a bid, you should know as much as possible about the jobsite and materials needed to perform work safely and in compliance with safety standards. Factors to consider:

- Traffic
- Proximity and physical condition of nearby structures
- Soil classification
- Surface and ground water
- Location of the water table
- Overhead and underground utilities
- Weather
- Quantity of shoring or protective systems that may be required
- Fall protection needs
- Number of ladders that may be needed
- Other equipment needs

Inspections

A competent person must inspect excavations, adjacent areas, and protective systems daily for possible cave-ins, indications of failures in protective systems and equipment, hazardous atmosphere, and other hazardous conditions.

Inspections must be done prior to the start of work and as needed throughout the shift and are required after natural events, such

as rainstorms, or other hazard-increasing occurrences, such as blasting work.

If unsafe conditions are found during an inspection, workers must be moved away from the hazardous area until the necessary safety precautions have been taken.

WHY IS EVERYTHING ELSE WRONG

There are few activities as risky as excavation and trench work. Though **Protective Systems, Pre-Planning** and **Inspections** are the core of excavation and trench work, **training** is also vital.

Any workers who has a part in any excavation work must be trained on the procedures and responsibilities they have for working safely in excavations and trenches. This includes the competent person, supervisors, equipment operators, and the workers down in the excavations. Training must cover hazards, protective measures and PPE required, how to identify potential and existing hazards and report dangerous conditions.