Excavation, Trenching, and Shoring Safety



Key Takeaways:

– Acknowledging safety requirements when setting up an excavation site.
– Learning about the hazards in and around an excavation, trenching, and shoring site.
– Acknowledging precautions, protective measures, and the types of support systems used at an excavation site.
– Understanding cave-in protection requirements and identify proper procedures to keep employees safe on an excavation.

Course Description

Excavation cave-in deaths account for almost 1% of all annual occupational deaths in the North America.

Prior to starting any excavation, trenching, and shoring activities, you must take specific steps to setup the site to avoid the accidental disruption of utilities, and assure the stability of adjacent structures – you must engineer some controls and implement precautionary measures. On any job, you must ensure your safe access into and out of the excavation and avoid the hazards of contaminated atmospheres, falling materials, and the collapse of excavation walls, through the use of protective systems. There’s lots in these scenarios that can go horrifically wrong, so awareness and preparedness are, as usual, crucial priorities for shielding the workforce.

Before opening an excavation, you need to take the proper steps to protect yourself, other employees, and any underground equipment. Firstly, your employer must determine the location of utility installations, such as sewer, telephone, fuel, electric, and water lines, or any other underground installations. Majority of areas have a ‘call before you dig’ local resource for locating problem dig areas. Utilize that number and share it with your team; especially if excavation work is a daily part of your business, that number should be memorized.

To guarantee your safety, an excavation needs to have a proper method of access

and escape. The size of the excavation determines if the necessary means include structural ramps, stairs, or ladders, used only by authorized employees. As well, it is fundamental that areas are clearly marked to keep non-participants, like other contractors on a job site, out and away for excavation operations.

The following are basic safety precautions for your use in excavation work:
– Excavations less than four feet deep are not required to have a stairway, anchored ladder, or ramp. Conversely, excavations four or more feet deep are required to have at least one of these structures, or other safe means of access and egress. This way, employees are prevented from having to travel more than 25 feet to exit an excavation from any point within.
– As well, walkways need to be provided everywhere employees or equipment are allowed to cross over excavations. Guardrails, fulfilling OSHA requirements, need to be provided anywhere walkways are six or more feet above lower levels. Always stay aware of your surroundings and never go beneath loads carried by lifting or digging equipment.
– Keep away from vehicles in the process of being loaded or unloaded, to avoid being struck by all spillage or falling materials. However, operators can remain in vehicle cabs that are being loaded or unloaded whenever vehicles are equipped to provide adequate protection.
– It is required that warning devices are in place when mobile equipment is operated around the edge of an excavation and the operator is unable to see the edge of the excavation. Such warning systems may be barricades, stop logs, and hand or mechanical signals. When feasible, any grade is best sloped away from the excavation.
– Have emergency rescue equipment readily available. There needs to be a breathing apparatus on site, in addition to a safety harness and lifeline, which are both required in confined spaces, and a basket stretcher.
– To restrict surface water from filling the excavation and to supply adequate drainage of the area next to the excavation, use diversion ditches, dikes, or other suitable methods.
– In circumstances where the stability of nearby buildings, walls, or other structures is jeopardized by excavation operations, then support systems are required. Such systems can be shoring, bracing, and underpinning, to ensure stability and protect employees.
– Within an excavation, you need to be shielded from cave-ins by a protective system. Examples of protective systems include sloping, bench, and support systems, such as aluminum hydraulic shoring. As well, these systems need to have the capacity to resist any reasonably expected load which could be applied to the system.