



Trench collapses can occur without warning, regardless of the depth. Most trenching fatalities occurs in trenches 4- to 15-feet deep. These depths invite taking chances, and often it is the good, safe-looking soil that turns out to be the unsuspecting killer. But trench cave-ins are avoidable. The following information can help you eliminate these potentially deadly accidents. Make sure you know and follow the requirements:

General Requirements

Before beginning excavation, establish the locations of underground and overhead utilities and services (**call 811 in Washington State**). Contact utility companies and advise them prior to the start of excavation.

Remove or support all surface encumbrances, as necessary, to safeguard employees.

Employees working in trenches **4 feet deep (OR and WA) or more** should have an adequate and safe means of exit, such as ladders, steps, or ramps available at no more than 25 feet of lateral travel.

Employees exposed to public vehicular traffic **must wear suitable garments** marked with or made of reflectorized or high-visibility material.

Do not permit employees to go underneath the loads of lifting or digging equipment.

When hazardous atmospheric conditions exist or you can reasonably expect them to exist, test and

control the atmosphere to prevent exposure to harmful levels.

Employees must not work in excavations in which there is **accumulated water** unless they follow necessary safety precautions.

Store spoils, equipment and other materials that can pose a hazard at least 2 feet away.

Mobile equipment working close to excavation edges, require extra sheet piling, shoring, or bracing. Mobile equipment near excavations also requires substantial barricades or stop logs.

Have a competent person on-site who can identify existing and predictable hazards and has the authority to take prompt corrective action.

A competent person should be able to identify **soil classifications** and the protective systems to use in accordance with the OSHA/WISHA excavation standards.

A competent person must make ongoing **daily inspections of excavations**, adjacent areas, and protective systems, including after every rainfall or other hazard-producing occurrence.

Barricade or cover all wells, pits, or shafts.

Back fill excavations upon completion.

Requirements For Protective Systems:

When employees work in trenches more than (4 feet WA) or (5 feet OR) deep, the employer must protect them from cave-ins by using an adequate protective system, such as **sloping, benching, shoring, trench box, etc.**

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Determine maximum allowable slopes for soil or rock deposits in accordance with OSHA/WISHA standard.

Have a registered professional engineer design sloping or benching for excavations greater than 20 feet deep.

Qualified personnel must design and install piling, sheeting, shoring, shields and support systems. The shoring system must be capable of withstanding all loads imposed upon it.

Make sure material and equipment used for sheeting, sheet piling, bracing, shoring, and underpinning is **in good serviceable condition**. Use timbers that are sound and free of defects.

Progress from the bottom of the trench when removing support-system members. Slowly release jacks and supports.

Remove support systems as you backfill the trench.

Extend trench boxes and shields to the bottom of the trench and no less than 18 inches above the vertical part of the trench face, except in certain cases.

Do not allow employees in shields during their installation, removal, or relocation.

When portable trench boxes are stacked, **provide attaching means** to prevent them from separating.

Do not work outside of trench shields or shoring protection in unprotected trenches.