

## EXCAVATIONS

Excavation and trenching cave-ins result in more than 100 fatalities annually in the United States. Too often an improperly protected trench or excavation wall will collapse, trapping workers. These accidents can be eliminated if we follow proper excavation and trenching procedures. OSHA Construction Standards for Excavation can be found in Subpart P 1926.650-.652.

An excavation is any mechanically-made cavity or depression in the earth's surface, from cellars to highways. A shoring system, sloping of ground, or some other equivalent means must be used to protect all employees exposed to danger from moving ground in all excavations. In addition, all trenches over 5 feet deep in either hard and compact, or soft and unstable soil must be sloped, shored, sheeted, braced or otherwise supported. Trenches less than 5 feet in depth must also be effectively protected when hazardous ground movement may be expected.

Any surface encumbrances which may create a hazard to employees shall be removed or supported, as necessary, to safeguard employees. The presence of all underground installations such as sewer, telephone, fuel, electric, or water lines shall be determined prior to opening an excavation.

There are three ways to protect against accidents. Protective systems include shoring, sloping, and a trench shield or box. Shoring is a structure such as a metal hydraulic, mechanical, or timber bracing system that supports the sides of an excavation. A shoring system may include sheeting, bracing or jacks. Sloping is accomplished by cutting the banks of the excavation back to the angle of repose. At this angle the soil won't slide. This angle varies, and depends on the soil type. A trench shield or box is a heavy metal box designed to be placed in a trench; it prevents the sides of the trench from caving in. Trench boxes are used in many types of sewer and pipeline work.

A competent person must inspect the excavation and adjacent areas daily for possible cave-ins, failure of protective systems, hazardous atmospheres, or any other condition which may present a hazard.

**Excavations 4 feet deep or more must have sufficient means of exit and these must be within 25 feet of lateral travel.**