

1. EXCAVATIONS

An excavation means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Excavation and unguarded openings are one of the most dangerous hazards during construction. Often excavations and trenching may temporarily remain unguarded or un-barricaded, causing additional hazards.

a. Competent Person

All excavation jobs require the presence of a "competent person". A "competent person" means one who is:

- Capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees.**
- Has authorization to take prompt corrective measures to eliminate them.**

Where the competent person finds evidence of a situation that could result in a possible cave-in; indicate failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

b. Protective Systems and Spoil Banks

- Protective systems must be employed to protect employees from cave-ins, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.**
- Excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations must be placed and kept not less than 2 feet from the edge of excavations and maintained, if necessary, by the use of retaining devices.**
- Loose rock or soil that could pose a hazard by falling or rolling from an excavation face must be established by scaling to remove loose material; installing protective barricades as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.**

- **A stairway, ladder, ramp or other safe means of egress must be located in trench excavations that are 4 feet or more in depth and must require no more than 25 feet of lateral travel for workers.**
- **Caution must be exercised if there is any heavy equipment (pile drivers, tampers, etc.), working nearby. The vibrations from this type of equipment can cause slides.**

c. Protection around Openings

- **Excavations must be barricaded to prevent workers and others from falling into them.**
- **Floor openings must be covered or guarded at all times. If covers are used, hatchways must have hinged covers. Covers for manholes, pits, and trapdoor openings do not have to be hinged.**
- **Floor holes (floor openings less than 12 inches in diameter) must be protected. If less than one inch, no protection is required.**
- **Floor openings must be guarded by a standard railing and toe boards or a cover.**
- **Temporary openings shall have standard railings.**
- **A standard railing must consist of top rail, intermediate rail, toe board, and posts, and must have a vertical height of approximately 42 inches from upper surface of top rail to floor. The top rail must be smooth-surfaced throughout the length of the railing. The intermediate rail must be halfway between the top rail and the floor. The railing must be capable of withstanding a load of at least 200 pounds applied in any direction.**