

## 10 Trench Excavation Safety Rules

An average of two workers are killed every month in trench collapses. Trenching and excavation work present many safety issues. Workers in trenches can be subject to entrapment from a cave in, or hazardous atmospheres. Workers outside of the area must be protected from falls into the excavation.

Employers must ensure that trenches are safe for workers to avoid fines, serious injuries, and deaths. Here are ten basic rules that both employers and workers need to be aware of when working in trenches and excavations.

### **Rule #1 - Exits**

Any excavation that is 4 feet or more in depth must have an egress method. Egress may be provided by ramps, [ladders](#) or other safe ways for workers to exit. A method of exit must be located within 25 feet of any worker. In the event of a cave in or environmental change, workers must be able to exit quickly.

### **Rule #2 - Sloping or shoring**

Any trench equal to, or greater than, 5 feet in depth must have a protective system. The only exception is trenches created in solid, stable rock. Sloping involves cutting trench walls at an angle away from the bottom of the excavation. Other methods may be used, depending on the soil, depth, climate and water content. Failure to protect a trench in this manner can result in cave-ins.

### **Rule #3 - Keep heavy equipment away from trench edges**

Heavy equipment must be kept, and operated, a minimum of 2 feet from any excavation edge. This reduces the potential for an operator to misjudge the distance and fall into the trench or for the weight of the equipment to collapse the wall.

### **Rule #4 - Keep excavated soil and other materials at least 2 feet from trench edges**

Placing any excavated material or working supplies near the edge can result in wall collapse. Materials can also be knocked down on top of workers. The area must also be inspected for any other sources that could affect the stability of the trench.

### **Rule #5 - Know where underground utilities are located before digging**

The location of any underground utilities must be known and marked before any digging begins. Cutting into electric or gas utilities can be deadly. Breaking a water main can quickly collapse the excavation.

### **Rule #6 - Atmospheric hazard testing**

In any trench, 4 feet or greater in depth, an atmosphere test must be performed. Testing is designed to determine the oxygen content and presence of any toxic gases or hazardous fumes - 1926.651(g) (1). Low oxygen content or gases can cause workers to faint or have other ill effects on their health.

### **Rule #7 - Inspect trenches at the start of each shift.**

A competent employee must inspect all trenches or excavations at the beginning of each shift. Inspection must include the condition of the walls or shoring system, placement of egress methods and environmental conditions.

### **Rule #8 - Inspect trenches following a rainstorm or other event**

Trenches must be inspected after a rainstorm or any event that could alter the stability of the walls or change the environmental hazards. Excess water absorption can cause a slide.

### **Rule #9 - Do not work under suspended or raised loads and materials.**

Workers must never be allowed to be underneath any raised load. An accidental drop of materials could injure those below.

### **Rule #10 - Personnel must wear high visibility or other suitable clothing when exposed to vehicular traffic**

All workers in the excavation area must wear visible clothing or vests to alert machine operators of their presence. Spotters for equipment operators are beneficial in high activity areas.

At your safety meeting, discuss miss or near miss situations. Ask workers to identify ways to provide pre-work safety checks when working around trenches.

Sign the safety sign in sheets. Encourage all employees to look out for one another as they perform their jobs.