

## Working Safely in Trenches

Over a five-year period, 26 California workers died, and 207 others were injured in trench related accidents. This Safety Talk provides a basic overview of Cal/OSHA requirements that keep you safe when working inside trenches.

### Before the Job Begins

Assess the worksite before the start of the project to determine:

- Will surface encumbrances (sprinklers, utilities, etc.), sidewalks, or buildings require support during the excavation?
- Will the trench be at least five feet? If yes, obtain either a project or annual permit through [Cal/OSHA](http://Cal/OSHA).
- Have underground utilities been identified in the area being excavated? Call 811 (national call-before-you-dig number) at least two business days before your project begins. Use white spray paint to mark the proposed excavation. Underground utilities will then indicate if and where utility lines are located using the below color code.

<b>PROPOSED EXCAVATION</b>	<b>TEMPORARY SURVEY MARKINGS</b>
<b>ELECTRIC</b>	<b>GAS-OIL-STEAM CHEMICAL</b>
<b>COMMUNICATION CATV</b>	<b>WATER</b>
<b>RECLAIMED WATER IRRIGATION SLURRY</b>	<b>SEWER STORM DRAIN</b>



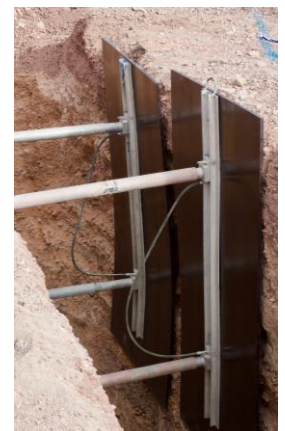
### Cave-In Protection

Cave-ins are the biggest hazard to life when working inside a trench. A cave-in occurs when the wall(s) of a trench collapse burying the worker(s). One cubic yard of soil can weigh as much as a small car! Workers have died in trenches as little as three feet because the weight of the soil impeded their ability to expand their lungs even though their head was well above the trench's opening.

All trenches deeper than five feet *must* have protective systems such as shoring or trench boxes. In shallower trenches the competent person at your site will determine if protective systems should be installed.



Trench Box/Shield



Hydraulic Shoring

# Working Safely in Trenches

## General Requirements

- Only authorized/trained employees are allowed in trenches.
- The competent person must perform an inspection before each shift, after a rainstorm/earthquake, or if there is standing water to inspect for cave-in hazards, atmospheric hazards, or other conditions that could result in an injury.
- When locating buried utilities, use hand tools such as shovels and pickaxes instead of heavy equipment.
- Barriers or a warning system should be employed to prevent mobile equipment or vehicles from falling into the trench.
- Use signage to alert workers of any overhead powerlines that could strike equipment or vehicles.



## Falling Loads

Do not work directly underneath loads handled by equipment. Stand away from any vehicle being loaded or unloaded to avoid being struck by spillage of falling materials. Drivers may remain inside the cabs of vehicles being loaded or unloaded, but only if vehicles are equipped with adequate protection from falling objects.

Any excavated materials or equipment that could fall into an excavation must be kept at least two feet from the edge of the excavation. If the site does not permit a two-foot setback, spoils may need to be temporarily hauled to another location.

## Access/Egress

Employees working in trenches four feet or more in depth must have an entry/exit at least every twenty-five feet. Usually, this consists of ladders that extend at least 3 feet outside the trench.

## Fall Protection

Guardrails or other forms of fall protection are not required **unless** a walkway or bridge is used to cross over an excavation more than six feet deep, **and** the trench is wider than thirty inches.

## Atmospheric Hazards

Your District's competent person will determine if there is a potential for a hazardous atmosphere while working inside the trench. This typically happens when the trench is located next to a busy highway as carbon monoxide which is heavier than air sinks to the bottom of the trench displacing oxygen. This also occurs when tasks involve a lot of welding, brazing, or use of products with toxic fumes.

While technically a trench is a confined space, it is exempt from the traditional confined space program requirements unless there is a secondary confined space inside the trench such as pipe. Your District's competent person will make that determination.

## Report Unsafe Conditions

Follow these safe work practices and those outlined in your Injury, Illness and Prevention Plan. Immediately report unsafe conditions and hazards to your supervisor or the competent person.

### More Resources:

- [Cal/OSHA §1540](#)
- [Cal/OSHA Pocket Guide for Construction](#)
- [Cal/OSHA Excavation Permit Webpage](#)
- [SDRMA Risk Control Team](#)

This *Safety Talk* provides awareness level training on Trench Safety.

If this information is unclear or if you have any additional questions, please talk to your supervisor.