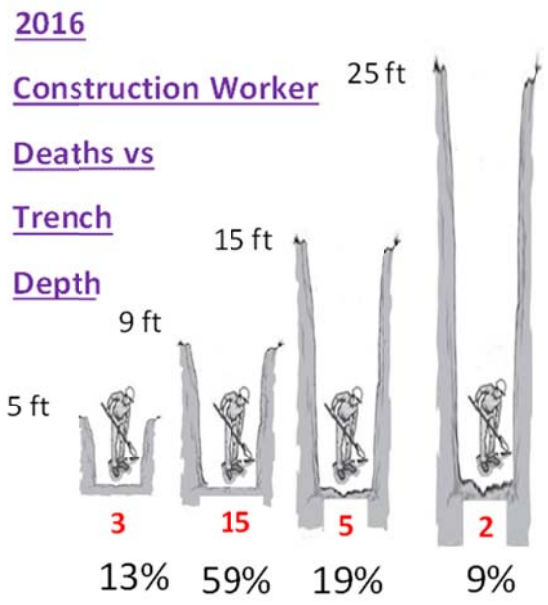
Tailgate Topic Review

[PP 03/17/2019 - 03/30/2019]
Excavation Safety Training

Six Most Prevalent Myths About OSHA's Excavation Standard

MYTH #1 – "A protective system is not required to be utilized in an excavation unless it is at least five (5) feet deep."

FALSE - Many times I have heard people say that OSHA's excavation standard only requires employers to utilize some sort of protective system (trench box, shoring, sloping or benching . . .) whenever a worker is going to enter an excavation five feet or deeper (unless made in stable rock). But what Cal-OSHA §1541.1. Requirements for Protective Systems requires is that a protective system be utilized in all excavations, even those less than five feet deep, except when "an examination of the ground by a competent person provides no indication of a potential cave-in". Many of you have probably excavated at sites with dry fine sand that actually flows as you are digging, or perhaps you've had the headache of digging a trench in soupy mud. In those cases, cave-ins can occur in trenches much less than five feet deep. So regardless of the fact that you might not be digging to five feet or more in depth, the competent person for the excavation site must still evaluate the excavation area and then determine whether or not some sort of protective system is needed to protect workers in that excavation.



MYTH #2 – "Our employees are automatically protected from cave-ins in a trench whenever we install a trench box."

FALSE - Merely installing a trench box (or shield system) in your excavation does not automatically mean your employees are adequately protected. That is because all trench boxes are not created equally. In fact, I am shocked by how many people utilize a trench box for protection of workers in a trench without having any idea whether or not that trench box is actually strong enough to withstand the weight of a collapsing trench wall.

Cal-OSHA §1541.1. Requirements for Protective Systems states that shield systems "shall not be subjected to loads exceeding those which the system was designed to withstand". While the trench box you are using may look strong, one must refer to the manufacturer's tabulated data for the particular brand and model of trench box being utilized (as well as its configuration) to determine how deep it can be used. And that, in turn, depends on the type of soil you are digging in, as demonstrated in the sample table below.

Using a trench box in an excavation that is deeper than it is rated for in a particular type of soil can cause the box to become overloaded and collapse.
One more reason some workers still get killed or injured when using a standard trench box is because, while they offer protection from cave-ins on the sides of the trench, they do not necessarily protect from cave-ins at the ends of the trench. In those situations where soil could slid or collapse into one or both ends of a trench box, some form of approved protection must also be provided to protect workers. This could include, but is not limited to, the installation of approved end plates, sloping of the soil per the OSHA sloping charts, or the use of specially designed trench boxes that incorporate end protection into their design.

MYTH #3 – "The competent person must conduct one inspection of our work-site before we start work, and then we are good for the day."

FALSE - A lot of people probably believe the competent person must only make one inspection of the excavation site each morning before work begins because Cal-OSHA §1541.1. § 1541. General Requirements. (k) Inspection starts off by saying "Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions." But the standard also says that "an inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift". The standard then goes on to say that "inspections shall also be made after every rainstorm or other hazard increasing occurrence".
So as you can see above, there are many cases where additional inspections by the competent person might be needed as work progresses throughout the day.

MYTH #4 – "OSHA requires a walkway be installed over all excavations over which employees are allowed to cross."

FALSE - This belief is understandable because Cal-OSHA §1541.1. § 1541. General Requirements. (l) Fall protection addresses this situation but actually says that "walkways shall be provided where employees or equipment are required or permitted to cross over excavations". But what if a worker wants to cross over a trench that is only three inches wide? Do you think that a walkway is really necessary? And what if it only six inches wide? Thankfully, this issue is cleared up by federal OSHA in one of their letters of interpretation. In that letter, OSHA states that they consider crossing narrow trenches 30 inches or less in width to be a de minimum condition. Therefore, they go on to say, walkways or bridges must be provided when employees or equipment are required or permitted to cross over excavations only when the excavation is wider than 30 inches at the top.
So while you can certainly provide walkways for narrower trenches, at least now you know where OSHA draws the line.

MYTH #5 – "Cal-OSHA regulates excavations as permit-required confined spaces."

FALSE - The scope and application section of Cal-OSHA§5156. Scope, Application and Definitions exclude excavations from coverage by the confined space standard. However, Cal-OSHA § 1541. General Requirements. (g) Hazardous atmospheres still requires employers to take certain precautions in certain excavations where there is a potential for a hazardous atmosphere.

MYTH #6 – Cal-OSHA understands that some excavation work can be done in less than one hour so that it is not necessary to provide protective systems as long as the excavation is less than 8 feet deep.

FALSE – Cal-OSHA requires that whenever man entry is required in trenches deeper than 4 feet that a protective system is provided. At 4 feet deep, you need to provide a means of egress, at 5 feet deep you need proper protective systems (***and may be less if the competent person determines that the soil will not support itself***), and keep soil and other materials 2 feet away from the edge of the trench. Those are the basics; everyone should know them and must be enforced even if the work can be done quickly.

Trenches and Excavations

Trench fatalities are a serious problem in construction. Bureau of Labor Statistics data show that about 25 workers are killed each year in trench-related mishaps. Cave-ins cause about three out of every four fatalities; the remainder are commonly due to struck-bys or electrocutions.

The results of OSHA's 2003 investigation are useful in understanding why trench fatalities occur and how they can be avoided. The main reason trenches collapse is that they are **not properly protected**. Protective systems were properly employed in only 24 percent of the trenches. In the remainder, a protective system was either improperly used (24%), available but not in use (12%) or simply unavailable (64%).

Further, despite the fact that environmental conditions were a contributing factor in 68 percent of the fatalities, the competent person **was not onsite** when the fatality occurred 86 percent of the time. Most of the time (65%) the employer had not identified the soil type even though soil type is a factor in trench cave-ins.

Also, a disproportionate number of fatalities (36%) occurred on Mondays, probably because rain or other factors changed conditions over the weekend. Under OSHA regulations, the competent person must inspect trench work in progress before each shift and after any changes in conditions.

The OSHA investigations showed that schedule time was more important than safety in 88 percent of the incidents. Seventy-two percent of the fatalities occurred in trenches less than nine feet deep. Only nine percent occurred deeper than 15 feet.

The most commonly killed employees were construction laborers (53%), with plumbers and pipe fitters following next at nine percent. Most (58%) were killed while installing pipe.

Fifty-six percent of these fatalities were Hispanics, and 52 percent were foreign-born. For 44 percent, Spanish was their primary language. At least 30 percent had been working for their employer for less than a year, and most (59%) worked for a subcontractor.

Only six percent were union members. Since, nationwide, about 20 percent of construction work is union, the expected rate of union fatalities would be near 20 percent. The lower rate suggests that union jobs are safer, that supervisors and workers on union sites are better trained and that the union offers the kind of protection that workers need to speak up about safety issues on the worksite.

Just over half the employers had a written safety and health program, but, of these, only 40 percent covered trenching. Sixty-five percent provided no trench safety training. Most employers (71%) had

never been inspected by OSHA, but 21 percent had been previously cited by OSHA for trench safety violations.

About three in every four fatalities occurred at residential worksites. Most companies were small; 42 percent had fewer than ten employees. Though, typically, five or less workers were present on the site when the incident occurred, most of the projects (52%) involved contracts worth $100,000 or more.

Although trench and excavation work can be very dangerous, injuries and fatalities are completely preventable. For LIUNA signatory contractors that participate in the LHSFNA, the OSH Division can provide assistance in the development and implementation of trench safety programs. For help, call the OSH Division.

SPECIAL NOTES TO INSPECTORS

1. At the start of any trench project the inspector shall verify that the contractor has an approved IIPP on file and that it has a specific section referring to excavations.
2. Shoring submittals are required for all projects. On T&M projects the inspector shall meet with the contractor and the assigned competent person to verify they have the knowledge to provide a protective system.
3. The inspector shall verify that the contractor has a valid excavation permit (annual or project).
4. Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of 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. If the CP is unavailable the BCA inspector is to ensure the safety of the workers in the trench by ordering them out of the trench and away from the sides.
5. The BCA inspector shall possess a measuring device that the inspector can use to determine the rail and pistons of the protective system.