2023 TRENCHING & EXCAVATION STAND DOWN

SUPPORTING OSHA'S NATIONAL EMPHASIS PROGRAM TO PREVENT FATALITIES IN TRENCHING

Top OSHA Inspection Data

OSHA OIS Inspection Data #1

Top 10 Construction Violations (10/1/22 - 4/30/23)

Standard	Total Violations	Serious Violations	Willful Violations	Repeat Violations
1926.501 - Fall Protection	4,109	3,259	140	625
1926.1053 - Ladders	1,701	1,483	11	118
1926.451 - Scaffolding	1,557	1,449	8	56
1926.102 - Eye & Face Protection	1,223	1,076	19	109
1926.503 - Fall Protection Training	1,204	806	12	91
1925.100 - Head Protection	593	526	3	29
1926.20 - General S & H Provisions	551	434	3	44
1926.651 - Excavation Requirements	486	361	10	35
1926.453 - Aerial Lifts	466	417	1	20
1926.652 - Requirements for Cave-in Protective Systems	362	251	21	46

OSHA SAFE + SOUND VPPPA

OSHA Statistics on Trenching Fatalities & Inspections

Trench Cave-In Fatalities

- 2017: 24 fatalities
- 2018: 13 fatalities
- 2019: 21 fatalities
- 2020: 18 fatalities
- 2021: 15 fatalities
- 2022: 39 fatalities
- 2023: 6 fatalities (as of 6/1/23)

Source: OIS Calendar Year, Fed and State

- FY2017: 1,033 total inspections
- FY2018: 1,156 total inspections
- FY2019: 1,554 total inspections
- FY2020: 1,002 total inspections
- FY2021: 922 total inspections
- FY2022: 1,280 total inspections

Source: OIS Fiscal Years, Oct 1 – Sept 31*

Trenches vs. Excavations

- The difference between a trench and an excavation comes down to the size, shape and depth of the cut.
  - **Excavation** - is the ***umbrella term*** that encompasses any man-made cut in an earth surface, including trenches.
  - **Trench** – is a **narrow excavation** made below the ground's surface. Trench width can't exceed 15 feet, and it is usually much less than the length of the trench. The trench depth is more than its width in most cases.

OSC
Oklahoma Safety Council
Champions of Safety and Health

Five Key Trench Safety Tips

- **Ensure** there is a safe way to enter & exit
- **Ensure** trenches are provided with cave-in protection
- **Look** for standing water and **test** for atmospheric hazards
- **Keep** materials and spoil pile away from the edge of a trench
- **Never** enter a trench that hasn't been inspected by a **competent person** and isn't protected.

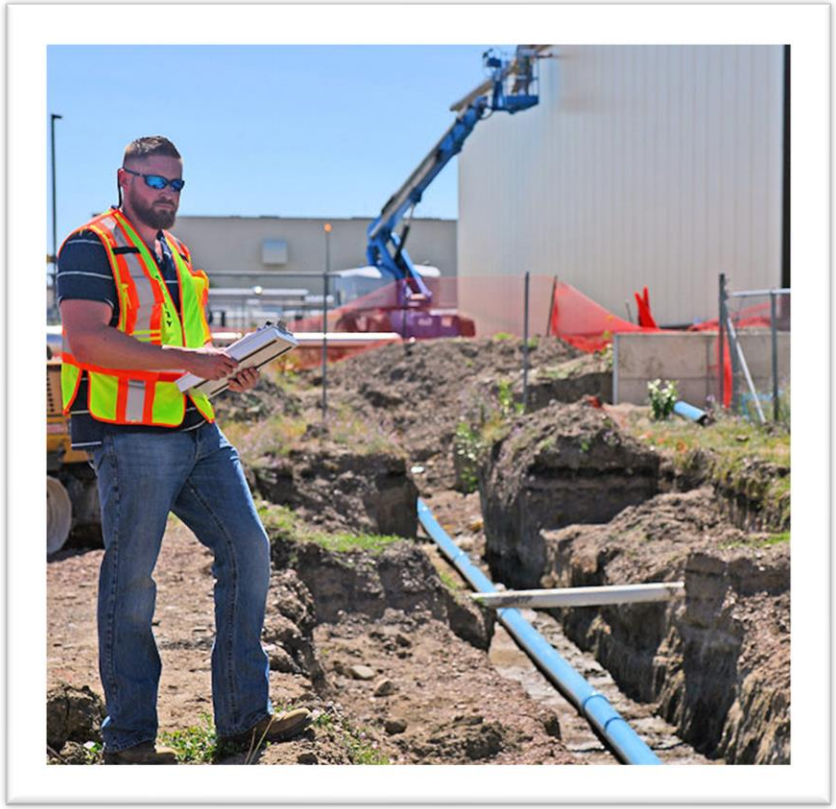
Competent Person

- An OSHA "*competent person*" is defined as:

*"…One who is capable of identifying **existing and predictable hazards** in the surroundings or working conditions which are **unsanitary**, **hazardous**, or **dangerous** to employees, and who has **authorization** to take **prompt corrective** measures to **eliminate** them."*

[29 CFR 1926.32(f)].

Competent Person for Trenching



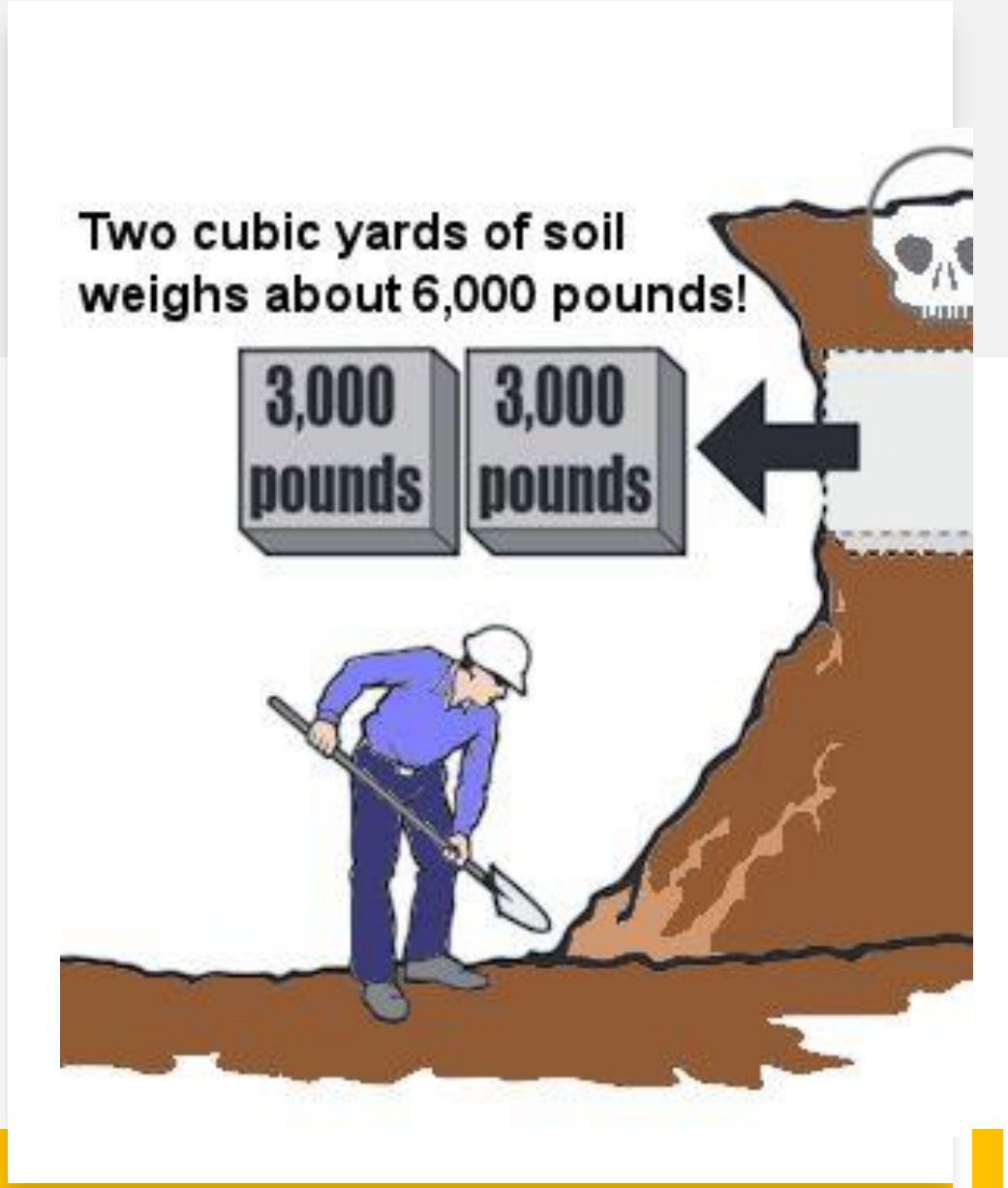
- The designated **competent person** should have and be able to demonstrate the following:
  - **Training**, experience, and knowledge of
    - Soil analysis
    - Use of protective systems
    - Requirements of 29 CFR 1926, Subpart P
  - **Ability** to detect:
    - Conditions that could result in cave-ins
    - Failures in protective systems
    - Hazardous atmospheres, and
    - Other hazards associated with confined spaces
  - **Authority** to take prompt corrective measure to eliminate existing and predictable hazards and to stop work when required.

Safe Means of Entry & Exit

- Employers must provide ladders, stairways, ramps or other safe means of entry and egress for any excavation greater than 4’ deep.
- The ladder must be located within 25 lateral feet of workers.
- The means of entering and exiting the trench must be within the protective system.
- Structural ramps must be designed by a competent person and have a nonslip surface.
- When two or more components make up a ramp or runway, they must be connected to prevent displacement.
- Use earthen ramps as a means of egress only if a worker can walk them in an upright position, and only if they have been evaluated by a competent person.

The Dangers of Cave-Ins

- Cave-ins pose the greatest risk and are much more likely than other excavation-related accidents to result in worker fatalities.
- The longer the excavation is open, the more likely it is to collapse.
- There are generally warning signs before a collapse occurs (but not always).
- Traffic and other sources of vibration increase the likelihood of a collapse.



NEVER ENTER AN UNPROTECTED TRENCH!

Ensure Adequate Cave-In Protection

- Pre-job planning is vital. The following concerns must be addressed by a competent person:
  - Evaluate soil conditions and select appropriate protective systems
  - Construct protective systems in accordance with the standard requirements in 29 CFR 1926.652,
  - Ensure excavation is protected from traffic and workers are protected from falling into excavation.
  - **Plan Ahead!** – call Okie 811 **before you dig**. Plan for traffic control, be prepared to support utilities (pipes, conduits, etc.). Conduct pre-job hazard assessment. Check the weather forecast for the day.
  - Maintain safe access in and out of the excavation. Inspect ladders prior to use, and ensure ladders are used in accordance with listing/labeling.
  - Inspect the excavation, protective systems and adjacent areas daily at the start of the shift, after rainstorms, or any other hazard-increasing event.
  - Keep excavations open only as long as they are needed.

Slope It, Shore It, Shield It

- **Sloping** means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.
- **Shoring** means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.
- **Shield** means a structure that can withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Trench boxes are considered a “shield”.

Water Accumulation

- Excavations may present risks of water accumulation.
- Workers are not allowed to work in excavations where water is accumulating, unless adequate precautions have been taken to protect them.
- If any of these conditions exist, workers could be exposed to the possibility of suffocating, inhaling toxic materials, being burned or engulfed by fire, or drowning.
- Competent person must ensure the excavation is safe for workers to enter.
- Daily inspections required before entry and periodically (as needed) through the day, especially after rain or other hazard-increasing events.

Confined Space Entry

- Atmospheric testing is required before workers enter an excavation greater than 4 feet (1.22 meters) in depth where an oxygen deficiency or a hazardous atmosphere is present, or likely to be present, such
  - excavations in landfill areas or
  - excavations in areas where hazardous substances are stored nearby.

Best Practice – treating an excavation as a confined space, at least at the beginning, ensures atmospheres are safe for entry!

Is it a confined space? Remember

S.A.D.

Size, Access, Duration

Confined Space Entry

(continued)

- If there are any hazardous conditions present, the employer must ensure that adequate precautions are taken to prevent employee exposure to those conditions.
- Such precautions include:
  - providing workers with proper respiratory protection or ventilation.
  - In addition, when controls are used to reduce the level of atmospheric contaminants to acceptable levels, testing must be conducted as often as necessary to ensure that the atmosphere remains safe.

Rescue Equipment

- If hazardous atmospheric conditions exist or may reasonably be expected to develop in an excavation, the employer must ensure the ready availability of emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher. This equipment must be attended when in use.
- You must have a rescue plan. **You cannot rely on 911 alone**.
  - Not every EMS department is trained or equipped to conducted trench/confined space rescues.
- Any emergency services you are working with should be familiar with the exact site location, types of permit-required confined spaces and the necessary rescue equipment and be able to respond in accordance with 29 CFR 1926.1211
- If your employees are designated as rescue providers, they must also be trained and equipped to respond, including basic first aid and CPR in accordance with 29 CFR 1926.1211.

Emergency service workers perform a practice rescue inside a manhole.

Keeping Materials Away from the Edge

- Spoil piles must be set back at least 2’ from the edge of the excavation.
- In tight spaces, spoil may need to be temporarily hauled to another location.
- Ensure retaining walls or trench boxes extend above the top of the trench to keep materials from rolling in.
- Keep motor vehicle traffic away from the excavation. Install barriers where traffic control is an issue.

Continuous Monitoring/Inspection

- Conditions can change in an **instant**.
- Even a properly protected trench can be compromised.
- Even if all requirements are met, workers may still be in danger due to changing conditions.

Employee Training

- All workers must be trained to **report changes** to the competent person.
- Employees must also be trained to **recognize** and **avoid** unsafe conditions and the **regulations** applicable to the work being done, and the methods to control or eliminate hazards or other exposures to injury or illness.

Workers' Rights

- Workers have the **right** to:
  - **A safe and healthful workplace** that is free from recognized hazards that are causing – or likely to cause – death or serious physical injury,
  - **To receive training** and **information** – in a language/vocabulary they understand – about hazards, methods to prevent them and OSHA standards that apply to their workplace,
  - **To review records** of work-related injuries and illnesses
  - **File a complaint** asking OSHA to inspect their workplace if they believe there is a serous hazard,
  - **Exercise their rights** under the law **without fear of retaliation**.

For more information on Trenching & Excavation Safety:

- www.osha.gov
- www.labor.ok.gov
- www.oksafety.org

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