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TIPS FROM THE TRENCH

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SEPARATING FACT FROM FICTION: SEVEN TRENCHING AND EXCAVATION SAFETY MYTHS

By Miles Wilson

Trenching and excavation safety is likely more misunderstood than any other OSHA requirement. Here are seven common myths and what OSHA's construction standards under 29 CFR Part 1926, Subpart P, actually require.

Myth 1: "It's under 5 feet, so we don't need protection."

Under §1926.652(a)(1), employees in excavations must be protected from cave-ins unless a specific exception applies.

One exception covers excavations made entirely in stable rock. Another applies to excavations less than 5 feet deep when a competent person examines the ground and finds no indication of a potential cave-in.

That second exception is not an automatic exemption for every shallow trench. Ground conditions matter, and a competent person's examination is required. If the excavation is 5 feet deep or more, cave-in protection is generally required unless the excavation is made entirely in stable rock.

Myth 2: "It's a short trench, so it doesn't really count as an excavation."

OSHA does not establish a minimum excavation length before its excavation standards apply.

Under §1926.650(b), an excavation is any man-made cut, cavity, trench, or depression in the earth's surface formed by removing earth. The definition does not exclude small excavations or those created for a single pipe fitting.

A short trench can still present a serious cave-in hazard, and its limited length does not automatically exempt it from OSHA's requirements.

Myth 3: "Shoring only needs to be engineered once you go past 20 feet."

This one is repeated constantly, and it's backwards. The 20-foot line in Appendix F does trigger a requirement for a registered professional engineer, but manufactured shoring and shields (trench boxes, hydraulic shores, aluminum hydraulic systems) are already engineered from the very first foot.

Under Option 2 of 1926.652(c), that equipment is used in accordance with tabulated data or manufacturer's specifications that a registered professional engineer has already approved.

What changes at 20 feet is that you can no longer rely on the standard tabulated data that manufacturers publish for typical depths. Past that point, OSHA has been explicit that the manufacturer's own tabulated data can still be used if it's rated for that depth and used within its limitations. Otherwise, you need a site-specific "engineered plan" from an RPE. So, the rule isn't "20 feet means an engineer gets involved for the first time." It's "20 feet means the off-the-shelf engineering may no longer cover you."



Photo from ilt.safetynow.com

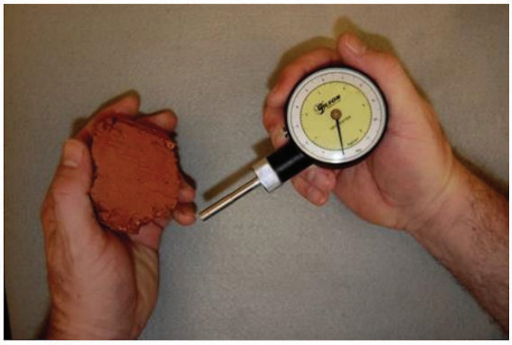
Myth 4: "Soil classification is basically eyeballing it."

Visual observation is an important part of soil classification, but it is not the whole process when OSHA's Appendix A classification method applies.

Appendix A, §(c)(2), requires at least one visual analysis and at least one manual analysis to classify soil under that method. Visual analysis may include examining soil layers, cracks, water seepage, and evidence of previous disturbance. Manual analysis may involve tests of soil strength or plasticity.

A pocket penetrometer is one possible tool, but OSHA does not require that specific instrument for every classification. Other manual tests and recognized classification methods may be appropriate.

Soil classification is also not a one-time assumption that remains valid regardless of changing conditions. Water, vibration, weather, and previously disturbed ground can affect soil stability.



Flat face of sample ready for testing.



Testing with a penetrometer.

Photo from OSHAcademy.com

Myth 5: "Our most experienced guy can be the competent person. He's done this for 20 years."

A person responsible for excavation safety must be able to recognize the hazards relevant to the work and take action when conditions become unsafe. Experience operating equipment or supervising crews is not, by itself, proof that someone can fulfill those responsibilities.

Section 1926.650(b) defines a competent person as someone capable of identifying existing and

predictable hazards in the surroundings or working conditions that are hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Subpart P also assigns specific responsibilities to competent persons. For example, §1926.651(k) requires inspections of excavations, adjacent areas, and protective systems by a competent person before work begins, as needed throughout the shift, and after rainstorms or other hazard-increasing events.

Myth 6: "A trench box protects against bad air, too."

A trench box is designed to provide cave-in protection. It does not eliminate hazardous atmospheric conditions.

Under §1926.651(g), atmospheric testing is required before employees enter excavations greater than 4 feet deep when oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist. OSHA specifically identifies landfill areas and areas where hazardous substances are stored nearby as examples, but other potential sources can include sewer lines, buried tanks, or areas with heavy clay that traps gas. The actual hazards depend on the site.

When hazardous atmospheres are present or reasonably expected, employers must take appropriate precautions. Depending on the circumstances, these may include ventilation, respiratory protection, repeated atmospheric testing, and readily available emergency rescue equipment.

Myth 7: "OSHA standards are more like guidelines, and enforcement is rare and lenient."

OSHA's excavation requirements are enforceable construction safety standards, not optional recommendations.

Trenching and excavation have also been the subject of OSHA's National Emphasis Program, which directs enforcement and outreach efforts toward these hazards. OSHA has used this program to prioritize inspections of trenching and excavation operations, including situations where inspectors encounter excavation hazards while performing other duties.

That does not mean every unrelated site visit automatically becomes a trenching inspection. It does mean employers should not assume excavation hazards will go unnoticed simply because an inspection began for another reason.

The consequences of a cave-in can be catastrophic, which is why appropriate protective systems, competent-person inspections, and compliance with the applicable standards are so important.

Disclaimer: This document does not provide or address all information, laws, standards, regulations, codes, requirements, and safety procedures applicable to excavations, trench protection, and shoring options. Readers should comply with all such measures.

Tips from the Trench is a recurring safety column. Got a topic you'd like covered in a future issue? Let us know.

