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EXCAVATION SAFETY News

www.trenchsafety.com

What's the True Cost of An Accident?

Monetary Losses

- Loss of skilled, experienced workers
- Loss of profit from such workers
- Loss of production
- Training expense for new personnel to take over for the injured party
- Re-training expense for the injured worker to handle another job
- Payment of compensation
- Legal costs
- Awards paid out for lawsuits
- Settlement awards
- Increased workman's compensation premiums
- Increased general liability insurance premiums
- Federal ADA or OSHA fines for-non-compliance
- State and local fines for non-compliance

Loss of Time

- Time investigating the cause of-the accident
- Time processing the accident reports
- Time preparing personnel reports
- Time attending depositions, hearings, and trials
- Time for additional training and supervision of new employees

See page 4 for some revealing NUCA statistics on trench cave-ins in the U.S.

Soil Classification Crucial to Safety

An important responsibility of the Competent Person is soils classification. OSHA's Subpart P, Appendix A, describes methods of classifying soils based on site and environmental conditions. The Competent Person is required to perform at least one visual and one manual test as a basis for classifying the soil. The soil type is then used to select the proper sloping, shoring, or shielding protective system. OSHA recognizes four types of soils:

Stable Rock

Difficult to determine without knowing if cracks slope into or away from the trench. Less than 2 percent of the soil in the U.S. is classified as stable rock.

A pocket penetrometer can be used in the field to check the approximate unconfined compressive strength of cohesive soils.

Type A Soil

Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsl) or greater. Examples include clay, silty clay, sandy clay, clay loam, hardpan, and cemented soils. No soil will be considered Type A if it is fissured, subject to vibration, previously disturbed, seeping water, or is part of a sloped layered system that slopes into the trench at an angle of 4H: 1V

Type B Soil

Cohesive soils with an unconfined compressive strength greater than .5 tsf, but less than 1.5 tsf. Examples include angular gravel, silt, silt loam, previously disturbed soils unless otherwise classified Type C, unstable dry rock, or sloped layered systems sloping into the trench at a slope less steep than 4H: 1V.

Type C Soil

Cohesive soils with an unconfined compressive strength of .5 tsf or less. Examples include granular soils, sand, loamy sand, submerged soil with freely seeping water, or any soil not otherwise classified.

A shearvane can be used to check the approximate unconfined compressive strength of cohesive soils.

Most of the soil in the Mid-South is either Type B or Type C. With the exception of a few parts

See "Soil Classification" on page 3…

BIG TrenchSafety Solutions…

How is this for a BIG Trench Shield? This configuration was used in a boring pit for a new water line running underneath I-40, in North Little Rock.

These "arch" spreaders were the ideal solution. The contractor needed lots of space beneath the spreaders for the crew, the boring equipment, and the pipe.

And Speaking of BIG…

Is the photo below of a big trench box, or a just a small truck? This trench box shows yet another way you can deal with large-diameter pipe — this time with tall sidewalls. We recently placed this box on a construction site in Memphis.

TrenchSafety can help with just about any shoring or shielding situation you come up against.

Call us with your next challenge, and together we'll find a solution. And check our web site for other TrenchSafety Solutions…

www.trenchsafety.com/JobPhotos/default.asp

Shale Will Cave In!

If you have any doubt about whether a trench cut into shale can cave in, the photo below should clear up your doubts.

These are Pro-Tec boxes, which TrenchSafety sold to a Little Rock-based construction company.

The company's Safety Director said that he fears shale more than any other type of material. The reason? Many construction people think it's safe.

Obviously it isn't.

Note that there is some deflection in one of the sidewalls of the bottom box due to the weight of the shale. Most of that deflection "popped back" when the pressure was relieved.

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"Soil Classification" from page 1

of Arkansas, there is very little "stable rock" here. And because of vibration, or soil being previously disturbed, there's little Type A soil.

The thump penetration test is the least accurate of all tests. However, it is an accepted method of determining approximate unconfined strength. Its accuracy relies on the experience of the person performing the test. Type A soils can be indented with difficulty. Type B soils can be indented with moderate effort. Type C soils can be penetrated easily, and can be molded with light finger pressure.

Visual Tests:

- Check samples of freshly excavated soil and soil in the sides of the excavation. Estimate the range and relative amounts of each particle size. Soil primarily composed of fine-grained material is cohesive. Soil composed of primarily coarse-grained sand or gravel is granular material.
- Check soil as it is excavated. Soil that remains in clumps is cohesive. Soil that breaks up easily or doesn't stay in clumps is granular.
- Check the sides of opened excavations and areas adjacent to the excavation. Crack-like openings could indicate fissured material. If chunks of soil fall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground, and are indications of potentially hazardous situations.
- Check for existing utility and other underground structures and to identify previously disturbed soil.
- Check the opened sides of the excavation to identify layered systems.
- Check for evidence of surface water, water seeping from the sides of the excavation, or the location of -the level of the water table.
- Check for sources of vibration that may affect the stability of the excavation face.

Manual Tests:

The pocket penetrometer, shearvane, thumb penetration test, ribbon test, and other recognized tests are listed in the standard.

The ribbon test is another test to determine whether a soil is cohesive or granular.

Alternatively, in many instances the Competent Person can classify the soil as Type C, not perform these tests, and slope, shore, or shield accordingly.

'Competent Persons' Must Adhere to Manufacturer's Tabulated Data

Once the Competent Person has classified the soil, he or she can use the Manufacturer's Tabulated Data to determine proper use of a shield. In this illustration, Efficiency Production Shield, model 816XLDF and serial number 111052, can be used to a depth of 47 feet in Type A soil, 26 feet in Type B soil and 20 feet in Type C soil.

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Work Smart...Save Lives

Plenty of Safety Training Available

With far too much regularity, news stories from across the U.S. tell of the senseless injuries and deaths of workers caught in collapsed trenches and in unsafe confined spaces, or those injured along road construction projects.

Don't let it happen to you and your employees. TrenchSafety and Supply provides the safety classes shown at right to help you and your crews to be aware of the dangers. Further, we show you how to take the correct steps to avoid a tragic accident on one of your job sites.

And, don't forget an often-overlooked benefit of safety: Real dollar savings. *See story on page 1.*

We scatter the classes throughout the Mid-South, to make it convenient for you to get your people in a class.

These classes often fill up quickly, so contact TrenchSafety today.

Classes start at $95. Each student receives a helpful instructional workbook, a wallet card, and certificate signifying completion of the course.

It's easy to register online at ***TrenchSafety.com/Training*** or call TrenchSafety toll-free — ***(800) 865-5801***.

Did you know...

Cave-In Facts

According to the National Utility Contractors Association...

- Between 100 and 400 people are killed, and 1,000 to 4,000 people are injured each year in trench cave-ins.
- The average worker killed is male, between 20 and 30 years of age, and ***has not had training***. Most deaths occur in trenches 5 to 15 feet deep.
- Workers are killed or injured by suffocation, being crushed, loss of circulation, or being struck by falling objects.
- One cubic yard of soil can weigh as much as a pickup truck — approximately 3,000 pounds!

Safety Training Class Schedule

"Competent Person" Training

2005

- Tuesday, Sept. 20 – Memphis
- Tuesday, Sept. 27 – North Little Rock
- Tuesday, Oct. 18 – Memphis
- Tuesday, Oct. 25 – North Little Rock
- Tuesday, Nov. 22 – Memphis
- Tuesday, Nov. 29 – North Little Rock
- Tuesday, Dec. 6 – Jackson, Tenn.
- Tuesday, Dec. 13 – Fort Smith, Ark.

2006

- Tuesday, Jan. 10 – Jackson, Miss.
- Tuesday, Jan. 17 – Memphis
- Tuesday, Jan. 24 – North Little Rock
- Tuesday, Feb. 7 – Fayetteville, Ark.
- Tuesday, Feb. 21 – Memphis
- Tuesday, Feb. 28 – North Little Rock
- Tuesday, Mar. 21 – Memphis
- Tuesday, Mar. 28 – North Little Rock
- Tuesday, May 2 – Memphis
- Tuesday, May 9 – North Little Rock

"Confined Space" Training

2005

- Tuesday, Oct. 11 – Memphis
- Tuesday, Nov. 15 – North Little Rock

2006

- Tuesday, Apr. 11 – North Little Rock
- Tuesday, May 16 – Memphis

"OSHA 10-hour Safety Program for Roadway Contractors"

2006

- Tuesday & Wednesday, Feb. 14-15 – Memphis
- Tuesday & Wednesday, Mar. 14-15 – North Little Rock
- Tuesday & Wednesday, Apr. 4-5 – Memphis
- Tuesday & Wednesday, Apr. 18-19 – North Little Rock

Space is limited! Contact us **today** to register and reserve classes for your staff.

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