

Standard Interpretations

12/22/2003 - Registered professional engineer approval requirements for combination trench shield and sloping system trenches with a depth greater than 20 feet.



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- **Standard Number:** [1926.650\(b\)](#); [1926.652](#); [1926.652\(a\)](#); [1926.652\(b\)](#); [1926.652\(b\)\(3\)](#); [1926.652\(b\)\(4\)](#)
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OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

December 22, 2003

Mr. David V. Dow
Trench Safety and Supply, Inc.
3000 Ferrell Park Cove
Memphis, TN 38116

Re: Whether a sloping system used in conjunction with trench shields in an excavation that exceeds 20 feet in depth must be approved by a registered professional engineer; whether that engineer must be registered in the state where the excavation work is taking place.

Dear Mr. Dow:

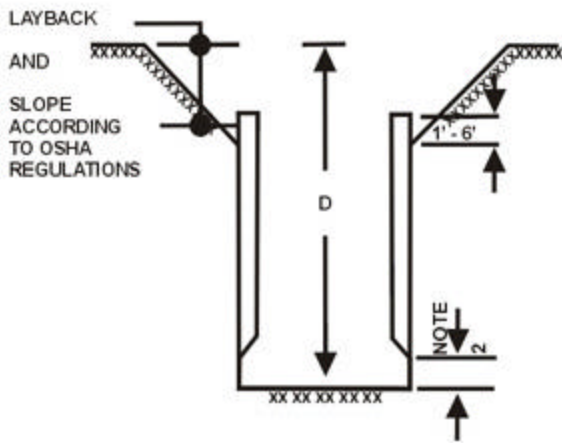
This is in response to your letter dated June 16, 2003, to the Occupational Safety and Health Administration (OSHA). You ask about the requirements in OSHA's excavation standard (29 CFR Part 1926 Subpart P). We apologize for the delay in responding.

We have paraphrased your questions as follows:

Question (1): *Scenario: A combination of trench shields and sloping is used, as follows:*

SCENARIO:

- D is greater than 20 feet
- Under the manufacturer's tabulated data ("MTD"), the trench shields have a depth rating equal to or greater than D
- MTD says to slope "in accordance with OSHA requirements" when sloping is used in conjunction with these shields



- MTD meets all Subpart P requirements
- The shield is used in accordance with the MTD.

specific sloping scheme for this particular project?

Answer

Title 29 CFR 1926.652(a) provides employers with the ability to choose from four options listed in §1926.652(b) in order to protect employees working in excavations. Those options not only include support systems drawn from tabulated data but using a sloping system designed by a registered professional engineer as well. Section 1926.652(b) states in part:

* * *

(b)(3) Option (3) - Designs Using Other Tabulated Data

(i) Design of sloping or benching systems shall be selected from and in accordance with tabulated data, such as tables and charts.

* * *

(b)(4) Option (4) - Design by a registered professional engineer

(i) Sloping and benching systems not utilizing Option (1) or Option (2) or Option (3) under paragraph (b) of this section shall be approved by a registered professional engineer.

Section 1926.650(b) defines "tabulated data" as:

Tabulated data means tables and charts approved by a registered professional engineer.

It is permissible to use manufacturer's tabulated data to create a sloping system so long as the system was approved by a registered professional engineer. Part 1926 Subpart P (Excavations) §1926.652(b)

Protection of employees in excavations (1) Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with paragraph (b) of this section...

In your scenario you state that Manufacturer's Tabulated Data (MTD) "says to slope in accordance with requirements" and that it "meets all Subpart P requirements." However, as illustrated in your scenario, the excavation (D) is greater than 20 feet deep. The sloping designs listed in the Appendices apply to excavations that are less than 20 feet. Appendix B, Table B-1 "Maximum Allowable Slopes" states in Note 1:

Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

Since the standard does not list specific sloping criteria for an excavation with a depth greater than 20 feet, the design must be approved by a registered professional engineer.

your MTD cannot meet all Subpart P requirements by simply stating that you must "slope in accordance with OSHA requirements." For an employer to use tabulated data for a sloping system for an excavation beyond the parameters listed in appendices A and B of Subpart P, a specific sloping design must be included and approved by a registered engineer. [\(1\)](#)

Question (2): *Same Scenario as above: If I rely on a RPE to design and approve a sloping and benching system, in what state must the RPE be registered?*

Answer

Section 1926.650(b) defines "registered professional engineer" as:

Registered professional engineer means a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

Under §1926.652(a) a professional engineer registered in any state who approves designs for tabulated data is considered as being "registered" within the meaning of §1926.650(b). As such, there is no requirement that a professional engineer be registered in any specific state, so long as they are approving manufacturer's tabulated data used in interstate commerce.

An employer also has the option to have its sloping system approved by a registered professional engineer under §1926.652(b)(4). If the employer chooses to rely on this option, then, under §1926.650(b), that engineer must be registered in the state where the work will be performed.

If you need additional information, please contact us by fax (202-693-1689) at: U.S. Department of Labor, OSHA, Office of Construction Standards and Guidance. You can also contact us by mail at U.S. Department of Labor, OSHA, Office of Construction Standards and Guidance, Room N3468, 200 Constitution Avenue, N.W., Washington, D.C. 20210, although there will be a delay in our receiving correspondence by mail.

Sincerely,

Russell B. Swanson, Director
Directorate of Construction