NAXSA
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Excavation Shoring Association

TIPS FROM THE TRENCH

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UNDERSTANDING THE REQUIREMENTS FOR TABULATED DATA

Within OSHA Subpart P 1926.652 - *Protection of employees in excavations*, the use of tabulated data is referenced through:

> 1926.652(a)(1) Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with paragraph (b) or (c).

Paragraph (b) refers to open cut systems and paragraph (c) refers to manufactured shoring systems.

> 1926.652(b)(3)(i) Designs of sloping or benching systems shall be selected from and be in accordance with tabulated data, such as tables and charts.

> 1926.652(c)(2) Option (2)-Designs Using Manufacturer's Tabulated Data.

Tabulated data comes in many different forms and formats. It is important to understand the basic elements and why they are there. All manufactured products that are sold for purpose and customer use come with manufacturer's tabulated data.

Three Major Elements of Tabulated Data

1. **Tabulation:** Tables and charts utilized to achieve a resulting number. For example, given OSHA Type B soil at 12 ft deep, what psf rating does the shoring shield need to have?

   OSHA requires these calculated tables to be developed and stamped by a registered engineer.

2. **Notes to the tabulation table:** Additional requirements or key information. For example: "In order to use these tables, the competent person must first determine the soil type in accordance with OSHA Appendix A soil identification."

   Notes to tables are every bit as important as the tables themselves, and must be read and understood by the person using the table. The registered engineer develops the notes and they become part of what the stamp covers.

3. **Manufacturer's product information:** Important details, such as a description of the product, its features, purpose and appropriate use; the tabular form of various equipment sizes and weights; assembly, installation, and removal of the product; maintenance instructions; etc.

   This information is developed by the manufacturer and not necessarily stamped by an engineer.

The Purpose of Manufacturer's Tabulated Data (MFTD)

- Manufacturer's Tabulated Data is used by the contractor to select the equipment, make sure the equipment is not being used outside its limitations, install the product, and maintain all safety precautions related to it while in use.

- The engineering staff reviewing submittals use the MFTD to make sure the equipment will meet the intent of the excavation and safety requirements of the project.

- Project inspection personnel and OSHA use the MFTD to make sure the equipment is properly installed and used. Without it, they have no way to determine it is. This is why the MFTD has to be on hand during the life of its use on the project.

Other OSHA requirements relate to trenching, but inspection personnel should confine their requirements for the product use to what is given in the MFTD. If they wish to set other requirements outside of the data, it should be clearly stated in the contract documents so the contractor can incorporate the cost of those additional requirements into the bid.

Manufacturer's Tabulated Data Legal Considerations

1. Federal OSHA requires that the tabulated part of the MFTD be stamped by a registered engineer. It does not require that it be stamped in every state in the USA. Without getting into depth, interstate commerce regulations require that the singular state stamp be accepted for use across the United States.

   If the project for which you are using the MFTD requires that it be stamped by an engineer in that state, it should be clearly stated in the contract documents so that the bidding contractors can cover the cost of getting a local engineer to review and stamp the data. Reasons for requiring a local stamp include:

   - It assures that lawsuits regarding the product can be litigated in the state the project occurs.

   - It assures that the engineering work has been performed in accordance with state engineering standards.

   - It promotes full employment for engineers registered in that state .

   These are reasonable and appropriate concerns, and they are advantages the owner is entitled to specify in his contract.

2. If a document shows an engineer's stamp has expired, it does not mean that the equipment that is being certified is any less safe. To be clear:

   - An expired PE stamp on a document does not reduce the quality or safety aspects of the product in any way.

   - OSHA does not require the stamp to be current.

The reason for requiring a current stamp is to ensure that an engineer and engineering firm are still available to engage with, should there be questions, or in the event of a lawsuit.

In the past, most states required an expiration date on the engineer's stamp. Today, the typical requirement is to include the date the stamp and signature were placed on the document. It is also possible to determine if a stamp is current by checking with the state engineers' board.

Tabulated Data Source is Limitless

Tabulated data development does not have to be limited to manufacturers. Contractors that develop their own shoring tools, methods, or procedures can have an engineer develop and stamp tabulated data for it. As long as the stamped data is backed up by solid engineering principals, it is acceptable for use under the two OSHA sections cited above.

Be aware of the following restrictions:

> 1926.652(g)(2) Additional requirement for shield systems used in trench excavations. Excavations of earth material to a level not greater than 2 feet (.61 m) below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

The tabulated data or a design by an engineer cannot override this requirement. The restriction says it is in "addition to" those requirements.