

TRENCH SHIELD TABULATED DATA

4' High x 12' Long Shield Model Number MCB 4x1270

Max Side Pressure = 1270 psf - 20' Max. Width



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Drawing No.
MCB 4x1270
Sheet TD1 of 1
Date: 1/31/12

TABULATED DATA:

Soil Type (per OSHA)	Pa pcf	Maximum Depth** Including Slopes
Type "A"	25	49.9' *
Type "B"	45	28.6' *
Type "C-60"	60	22.0' *
Type "C"	80	17.0'

* Note: Depths over 20 feet require a site specific design by a registered professional engineer.

** Note: Maximum depth is total depth including adjacent slopes above, if any.

1. This shield data shall be implemented by a competent person as defined by Title 8, Chapter 4, Section 1504(a) of the State of California Safety Orders.
2. The maximum depth shall include any slopes above.
3. This trench shield shall be used in accordance with the "Guidelines for Shield Usage" below and all OSHA requirements.

GUIDELINES FOR TRENCH SHIELD USAGE

1. This shield and tabulated data shall only be implemented by a competent person as defined by Title 8, Chapter 4, Section 1504(a) of the State of California Safety Orders adopted 9/25/91.

2. This tabulated data has been prepared by a registered professional engineer in accordance with the provisions of Title 8, Chapter 4, Section 1541.1(c)(2) of the State of California Safety Orders adopted 9/25/91 and Federal OSHA Safety and Health Standard 29 CFR Part 1926, Subpart P.

3. This shield shall be used in accordance with the State of California Administrative Code, Title 8, Chapter 4, Section 1541.1(g) at all times.

4. The soil types "A", "B", and "C" are as defined in Appendix A of the OSHA Standard, Section 1541.1 "Soil Classification". Type "C" soils include soils which are saturated, wet, or submerged in water. For soils which are not saturated, wet, or submerged in water but would otherwise be classified as a Type "C" soil, use the soil classification of "C-60" or consult a registered professional engineer.

5. This shield is designed to withstand a uniform horizontal pressure as indicated above. Lateral pressure loads from sheeting or steel plates against the pipe spreaders is not permitted without further analysis by a licensed professional engineer.

6. The surcharge load included in this tabulated data is a normal traffic and construction surcharge of 72 psf. Spoil piles, large heavy equipment or other factors may produce higher surcharge pressures. Actual pressure surcharges should be investigated prior to use to ensure that the maximum capacity of the shield is not exceeded.

7. Trench shields will not provide stability to adjacent buildings or other structures susceptible to lateral movement of supporting soils.

8. No modifications shall be made to this shield design without written approval of the Design Engineer.

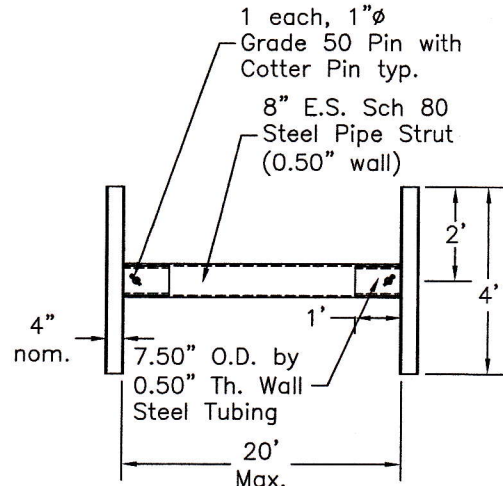
9. This shield tabulated data is for a shield installed in a continuous trench condition only. End plating or sheeting used to shore across the ends of the shield requires investigation by a registered professional engineer.

10. The maximum rated pressure for this shield is based upon the shield in structurally sound condition. The shield shall be inspected prior to use for damage or deterioration and repairs made if necessary.

11. When the shield(s) is used as part of a combined sloping and vertical excavation, the shield must extend a minimum of 18" above the toe of the slope.

12. No workman shall be in the trench unless protected within the confines of shields extending the full vertical height of the trench.

13. The shield base unit may be used alone or stacked with other shields and/or extensions. Shields shall be connected using the manufacturer supplied bolts as required to prevent relative movement between shields.



SECTION

Scale: 1/4" = 1'

Tabulated Data Calculation:

Without a site specific shoring plan prepared by a professional engineer, the active pressures given in the OSHA Construction Safety Orders are given as a guideline for calculating the shoring pressure at a given depth. The shield is designed for a uniform lateral pressure over the entire shield height H. The average pressure to the shield is calculated as $P = P_a \times H/1$. The total allowable depth is calculated as:

$$H_t = (\text{Capacity} - \text{Surcharge}) / P_a + H/2$$

For a surcharge of 72 psf and OSHA Type "C" soil with P_a of 80 pcf, the allowable depth is:

$$H_t = (1270 - 72) / 80 + 4' / 2$$

$$H_t = 17.0 \text{ feet.}$$

Calculations for other values of P_a are calculated similarly.

Note: The sketch at right is a diagram showing the method of calculation only. It is not a shoring installation plan. See shield usage guidelines for requirements of shoring installations.

