EFFICIENCY PRODUCTIONS, INC. — America's Trench Box Builder™

685 HULL ROAD, MASON, MI 48854
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MODEL	HDXLAPSF-816-12	SERIAL NUMBER	146191

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTATION RULES AND REGULATIONS, VOL. 54, NO.209, PART 1926 SUBPART P

SOIL TYPE TO BE EXCAVATED

STATE OF MICHIGAN — ALEXANDRE NEDELTCHEV — ENGINEER No. 6201082065 — LICENSED PROFESSIONAL ENGINEER

01.29.2013
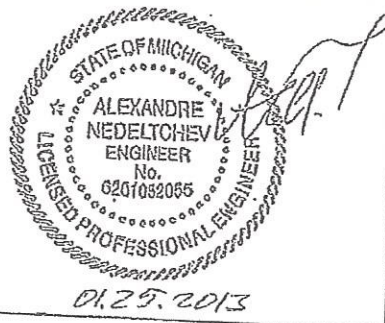
CERTIFIED BY: EFFICIENCY PRODUCTION INC.

PSF RATING MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT

			TYPE B MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FOOT OF DEPTH	TYPE C-COHESIVE SOFT COHESIVE TO SUBMERGED CLAY SOIL. 60 PSF PER FOOT OF DEPTH	TYPE C-60 SOFT NON COHESIVE TO SUBMERGED SANDY SOIL. 60 PSF PER FOOT OF DEPTH
			DESCRIPTION: CLAY, WITH UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TSF BUT LESS THAN 1.5 TSF COHESIONLESS GRAVEL, SILT, SILT LOAM OR SANDY LOAM	DESCRIPTION: SOFT COHESIVE SOIL UNCONFINED COMPRESSIVE STRENGTH EQUAL TO 0.5 TSF CLAY, SAND AND LOAMY SAND; SUBMERGED SOIL THAT IS STABLE	DESCRIPTION: SOFT COHESIONLESS SOIL UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.5 TSF GRAVEL, SAND AND LOAMY SAND; SUBMERGED SOIL OR FRACTURED ROCK THAT IS NOT STABLE

SHIELD SIZE

HEIGHT	LENGTH	PSF	MAX. ALLOWABLE DEPTH OF CUT	MAX. ALLOWABLE DEPTH OF CUT	MAX. ALLOWABLE DEPTH OF CUT
8	16	720	16	14	12

LIMITATIONS

1. XLAP Trench Shield to be assembled and installed as shown on the reverse side and in accordance with manufacturers instructions.

2. Shield to be used with manufacturer's spreader system or approved equivalent. All spreaders must be pinned at the selected width prior to installing in the excavation.

3. excavation 2 feet below bottom of shield in permitted when no loss of soil from behind or below the bottom of the shield is encountered. See paragraph 1926.652 (e)(2)(i). The competent person shall make the determination for compliance. Sudden shifting of the shield vertically shall be avoided.

4. Additional shields may be stacked with no penalty in depth rating. Stacked shields must only be rated to depth installed. Stacked shields must be pinned in alignment with manufacturer's stacking system or approved equivalent.

5. Contractor's competent person shall be responsible for monitoring soil conditions and shall be responsible for compliance with all federal, state and local rules and regulations.

6. Depth certification indicated, is based on the assumption that no surcharge loads from structures, equipment or stored material are adjacent to the excavation. Consult the manufacturer should such loads be present.

7. Previously disturbed soils may be Type B unless they would be classified Type C. (See Appendix A to Subpart P of part 1926 for soil descriptions. Type "C-60" represents a more stable condition than Type "C-80" described in Appendix A). Soil that meets requirements for Type A, but is fissured or subject to vibration may be Type B. Dry rock that is unstable and material that is part of a layered system where layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V) are Type B, but only if the material would otherwise be classified Type B.

8. When excavations in Type "C-60" solid are made with near vertical side walls, soil must be able to stand with unsupported vertical sidewalls long enough for shield installation. Otherwise it would be classified Type "C-80".

9. Soil in a sloped, layered system where layers dip into excavation on a slope of four horizontal to one vertical (4H:1V) or steeper may be Type C. Submerged soil in material with water freely seeping and entering excavation, but only part of the depth of the retained soil is submereged. Conditions more severe would require the services of a soils engineer to establish the applicable design pressure.

10. The use of the XLAP Trench Shield shall be in accordance with this data and the OSHA standards. Any use of this product not specifially described on this certification could cause cave-in, collapse or structural failure resulting in death or serious injury.

11. Depth and PSF ratings are for lateral earth pressures only and do not take any surcharges into account.