


| MODEL  |  | XLAP-SF-88   |  | SERIAL NUMBER  |  | 144907  |  |   |  |                                |  |
|--|--|--|--|--|--|---|--|---|--|--------------------------------|--|
| REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH<br>ADMINISTRATION RULES AND REGULATIONS, VOL. 54,<br>NO.209, PART 1926 SUBPART P |  |  |  | SOIL TYPE TO BE EXCAVATED  |  |   |  |   |  |                                |  |
|    |  | CERTIFIED BY:<br>EFFICIENCY<br>PRODUCTION INC.   |  | TYPE B<br>MEDIUM COHESIVE TO<br>GRANULAR SOIL 45 PSF PER<br>FOOT OF DEPTH  |  | TYPE C-COHESIVE<br>SOFT COHESIVE TO<br>SUBMERGED CLAY SOIL. 60<br>PSF PER FOOT OF DEPTH   |  | TYPE C-60<br>SOFT NON COHESIVE TO<br>SUBMERGED SANDY SOIL.<br>60 PSF PER FOOT OF DEPTH  |  |                                |  |
|  |  | PSF RATING MAXIMUM<br>LATERAL EARTH<br>PRESSURE CAPACITY AT<br>TRENCH BOTTOM IN<br>POUNDS PER SQUARE<br>FOOT |  | DESCRIPTION:<br>CLAY, WITH<br>UNCONFINED<br>COMPRESSIVE<br>STRENGTH GREATER<br>THAN 0.5 TSF BUT LESS<br>THAN 1.5 TSF<br>COHESIONLESS GRAVEL,<br>SILT, SILT LOAM OR<br>SANDY LOAM |  | DESCRIPTION:<br>SOFT COHESIVE SOIL<br>UNCONFINED<br>COMPRESSIVE<br>STRENGTH EQUAL TO 0.5<br>TSF CLAY, SAND AND<br>LOAMY SAND;<br>SUBMERGED SOIL THAT<br>IS STABLE |  | DESCRIPTION:<br>SOFT COHESIONLESS<br>SOIL UNCONFINED<br>COMPRESSIVE<br>STRENGTH LESS THAN<br>0.5 TSF GRAVEL, SAND<br>AND LOAMY SAND;<br>SUBMERGED SOIL OR<br>FRACTURED ROCK THAT<br>IS NOT STABLE |  |                                |  |
| SHIELD SIZE  |  |  |  |  |  |   |  |   |  |                                |  |
| HEIGHT   |  | LENGTH   |  | PSF  |  | MAX. ALLOWABLE DEPTH<br>OF CUT  |  | MAX. ALLOWABLE DEPTH<br>OF CUT  |  | MAX. ALLOWABLE DEPTH<br>OF CUT |  |
| 8  |  | 8  |  | 1440   |  | 32  |  | 29  |  | 24                             |  |

### LIMITATIONS

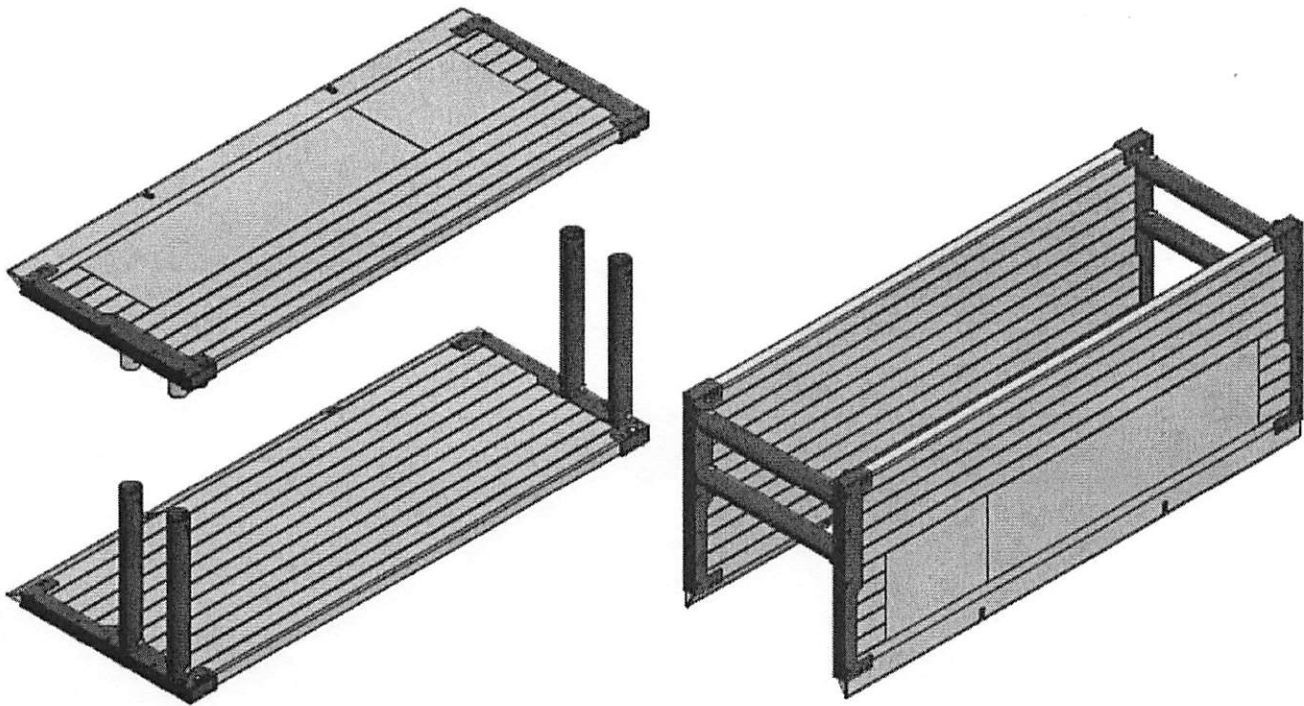
1. XLAP Trench Shield to be assembled and installed as shown on the reverse side and in accordance with manufacturers instructions.
2. Shield to be used with manufacturer's spreader system or approved equivalent. All spreaders must be pinned at the selected width prior to installing in the excavation.
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" soil 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 submerged. 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 specifically 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.

- NOT TYPE A IF FISSURED, SUBJECT TO VIBRATION, PREVIOUSLY DISTURBED OR PART OF A SLOPED LAYERED SYSTEM WHERE LAYERS DIP INTO EXCAVATION ON A SLOPE OF FOUR HORIZONTAL TO ONE VERTICAL (4H:1V) OR GREATER.
- PREVIOUSLY DISTURBED SOILS MAY BE TYPE B UNLESS THEY WOULD BE CLASSIFIED AS TYPE C. SOIL THAT MEETS THE REQUIREMENTS OF TYPE A, BUT IT IS SUBJECT TO VIBRATION OR FISSURED MAY BE TYPE B. DRY ROCK THAT IS NOT STABLE OR SOIL THAT IS PART OF A SLOPED, 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 MATERIAL WOULD OTHERWISE BE CLASSIFIED AS TYPE B.
- SOIL IN A SLOPED LAYERED SYSTEM WHERE LAYERS DIP INTO THE EXCAVATION ON A SLOPE OF FOUR HORIZONTAL TO ONE VERTICAL (4H:1V) OR STEEPER MAY BE TYPE C. SUBMERGED SOIL IS MATERIAL WITH WATER FREELY SEEPING AND ENTERING THE TRENCH, BUT ONLY PART OF THE DEPTH OF THE RETAINED SOIL IS SUBMERGED. CONDITIONS MORE SEVERE WOULD REQUIRE DEWATERING OR SEALING FOUR SIDES OF THE EXCAVATION AND PUMPING THE TRENCH, SUCH SEVERE CONDITIONS WOULD REQUIRE THE SERVICES OF A LICENSED GEOTECHNICAL ENGINEER TO ESTABLISH THE DESIGN PRESSURE. CONSULT THE MANUFACTURER FOR PRESSURES EXCEEDING TABULATED VALUES.
- ANY SOIL THAT WILL STAND UNSUPPORTED LONG ENOUGH TO INSTALL TRENCH SHIELD MAY BE CLASSIFIED AS C-60
- ANY USE OF A TRENCH SHIELD WITHOUT EFFICIENCY SPREADERS AND PINS OR EQUAL WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELD WAS DESIGNED TO BE USED WITHOUT PLATES EXTENDING BELOW, ABOVE, OR NEXT TO IT. ANY USE OF SUCH PLATES MAY VOID THE TABULATED DATA AND MAY REQUIRE SITE SPECIFIC ENGINEERING PREPARED BY A LICENSED PROFESSIONAL ENGINEER.
- XLAP-SF SHIELDS ARE **NOT** DESIGNED TO BE PUSHED TO GRADE, ANY UNNECESSARY ABUSE BY THE EXCAVATOR AND OR OPERATOR (SUCH AS POUNDING OR PUSHING WITH THE BUCKET) WILL VOID THE TABULATED DATA AS WELL AS THE WARRANTY.
- XLAP-SF SHIELDS ARE **NOT** DESIGNED TO BE PULLED OR LIFTED BY THE SPREADERS, LIFT AND HANDLE WITH SLINGS AND EFFICIENCY PRODUCTION SUPPLIED LIFT LUGS ONLY.
- CONDITION OF SHIELD, SPREADER PIPES, AND SPREADER PINS MUST BE CHECKED / INSPECTED FOR SERVICEABILITY BY THE COMPETENT PERSON PRIOR TO EACH USE. PSF RATING IS NOT VALID IF THERE IS ANY VISIBLE DAMAGE TO, OR REPAIRS MADE TO THE SHIELD THAT HAS NOT BEEN DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
- A MINIMUM OF 2 SPREADERS MUST BE INSTALLED ON EACH END OF THE XLAP5 SHIELD PRIOR TO USE.
- IF ADJUSTABLE SPREADERS ARE USED, ALL LOCK PINS MUST BE INSTALLED PRIOR TO USE.
- DEPTH AND PSF RATING ARE FOR LATERAL EARTH PRESSURES ONLY. AN ADDITIONAL LATERAL SURCHARGE PRESSURE UP TO 72 PSF IS ALLOWED.

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#### ASSEMBLY INSTRUCTIONS (DIS-ASSEMBLE SHIELD IN REVERSE ORDER)

- 1) LAY 1 SIDEWALL FLAT
- 2) INSTALL ALL SPREADERS, AND PINS
- 3) LIFT SIDEWALL 2 INTO POSITION WITH FORK TRUCK OR 4 LEGGED SLING AND LIFT-LUGS AND PIN TO SPREADERS
- 4) USING ALL 4 TOP LIFT-LUGS, AND 4 LEGGED SLING, CAREFULLY ROTATE SHIELD INTO FINAL POSITION, AND PLACE INTO TRENCH



\*THIS MATERIAL IS INTENDED TO PROVIDE BASIC ASSEMBLY AND INSTALLATION INFORMATION ONLY.

\*ALWAYS USE TRENCH SHIELD IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY LAWS AND REGULATIONS.

\*FAILURE TO DO SO COULD CAUSE SEVERE INJURY OR DEATH.