Trench Shield #12

Kelbe Aug.'92

EFFICIENCY PRODUCTION, INC.
P.O. BOX 24126 LANSING, MI 48909
PHONE 517-349-4620
EFFICIENCY TRENCH SHIELD

MODEL 812 XLD-F
SERIAL NUMBER 107221

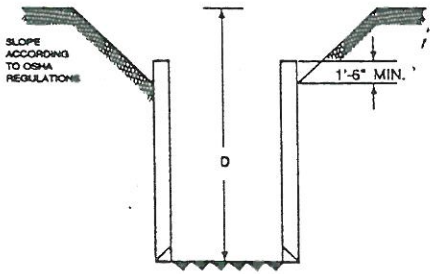
REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, VOL. 54, NO. 209, 10-31-89, PART 1926, SUBPART P

SHIELD SIZE		PSF RATING	MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) D		
			SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	TYPE A Stiff, cohesive soil. 25 PSF per foot of depth.	TYPE B Medium cohesive to granular soil. 45 PSF per foot of depth.	TYPE C Soft cohesive to submerged soil. 60 PSF per foot of depth.
8'	12'	1530#	61'	34'	26'

LIMITATIONS IN USE OF TABLE

1. TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED AS SHOWN AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. BANK ABOVE TOP OF SHIELD TO BE LAID BACK ACCORDING TO OSHA REGULATIONS.
3. CONSULT MANUFACTURER WHEN BOTTOM OF SHIELD IS NOT AT TRENCH BOTTOM.
4. ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT.
5. DEPTHS OF CUTS SHOWN ARE BASED ON EXAMPLES OF VARIOUS SOIL CONDITIONS. VERIFY ACTUAL SOIL PRESSURES PRIOR TO EACH USE.
6. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
7. DEPTH CERTIFICATION IS BASED ON SHORT TERM EXPOSURE WITH EXCAVATION OPEN A PERIOD OF TIME EQUAL TO 24 HOURS OR LESS. CONSULT THE MANUFACTURER SHOULD LONG TERM EXPOSURE BE REQUIRED.

DESCRIPTION	DESCRIPTION	DESCRIPTION
Clay, silty clay, sandy clay, clay loam, unconfined compressive strength of 1.5 tons per square foot or greater. (See note 8 on reverse side).	Clay with unconfined compressive strength greater than .5 TSF but less than 1.5 TSF. cohesionless gravel, silt, silt loam or sandy loam. (See Note 9 on reverse side).	Clay with unconfined compressive strength less than .5 TSF, submerged sand, clay or fractured rock that is not stable. (See Note 10 on reverse side).



STATE OF MICHIGAN
ALLEN J. NIEDER
ENGINEER NO. 17221
LICENSED PROFESSIONAL ENGINEER

CERTIFIED BY:
McCLURG & ASSOCIATES, INC. CONSULTING ENGINEERS
FEBRUARY 15, 1991

MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365-4,114,383-4,259,028
ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684

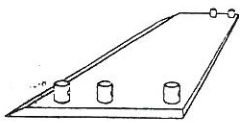
USE THIS PRODUCT ONLY IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, OR LOCAL LAWS

Any use of this product not specifically described on this certification could cause cave-in,

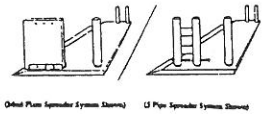
9. Not Type A if fissured, subject to vibration, previously disturbed or part of a sloped layered system where layers dip into excavation on a slope of four horizontal to one vertical (4H:1V) or greater.
9. Previously disturbed soils may be Type B unless they would be classed as Type C. Soil that meets requirements of Type A, but 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 if material would otherwise be classified as Type B.
10. 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 soils engineer to establish the design pressure. Consult the manufacturer for pressures exceeding tabulated values.**

Assembly

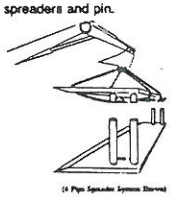
Lay side panel flat on ground with collar sockets up . . .



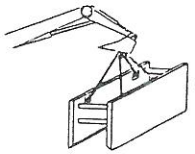
Place spreader pipe and/or plate onto collars or into brackets and pin in place. Secure pins with keepers. A minimum of 2 spreader units are required at each end of trench shield.



Lower second sidewall onto spreaders and pin.

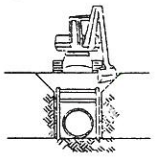


Stand trench shield in upright position and prepare for installation.



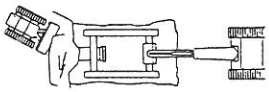
Using a trench shield in stable soil

Excavate to grade just slightly wider than the trench shield. Dig walls vertical to a minimum of 18" below the top of the shield. Slope soil above shield according to OSHA regulations. Install shield in trench.



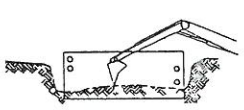
Excavate in front of the trench shield.

Pull shield forward by front top spreader pipe or with pulling eyes.
(Pulling eyes should be used with spreaders wider than 72" or when soil pressure is severe enough to cause spreader to deflect).

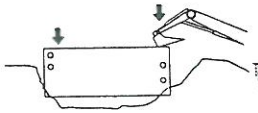


Using a shield in unstable soil

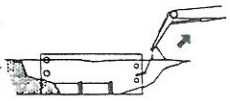
Excavate until soil begins to crumble beyond desired trench width. Place shield on line of excavation.



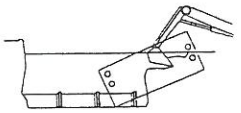
Press down on corners to push shield down to grade.



Pull shield forward and up on appropriate angle.

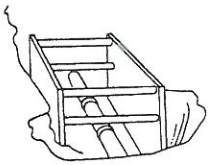


Excavate soil within the shield and repeat previous process.



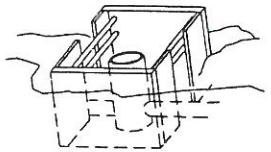
Using shields for patchwork, repairs, or tie-ins

- Center shield over work area.
- Lay soil at ends back according to OSHA regulations or use manufacturer's designed end plates to protect from cave-ins.



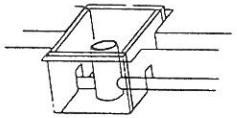
Manhole box with corner end plates

Corner end plates help prevent loose material from running into the end of the shield. Soil at ends should be sloped according to OSHA regulations.



Using 4-sided shields

When using shields as protection during manhole assembly work, insure that proper end panels are used, or lay soil at the ends back according to OSHA regulations.



- This material is intended to provide basic assembly and installation information only.