



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PAL3-810D

SERIAL NUMBER

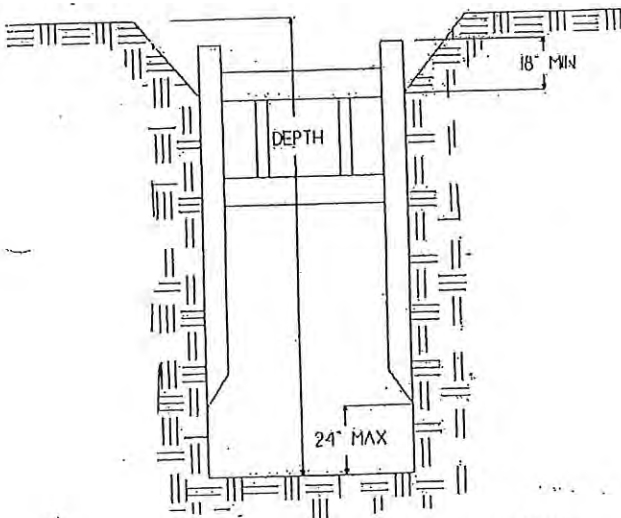
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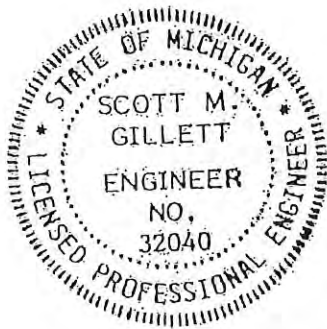
6' HIGH X 10' LONG

PIVOT STYLE

SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	60 FEET	1500	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	33 FEET	1500	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	25 FEET	1500	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.



PRO-TEC EQUIP



Scott M. Gillett

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) Previously disturbed soils may be Type B unless they would be classified 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
 - * Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.



TRENCH SHIELD CERTIFICATION

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MODEL NUMBER

PAL3-610D

SERIAL NUMBER

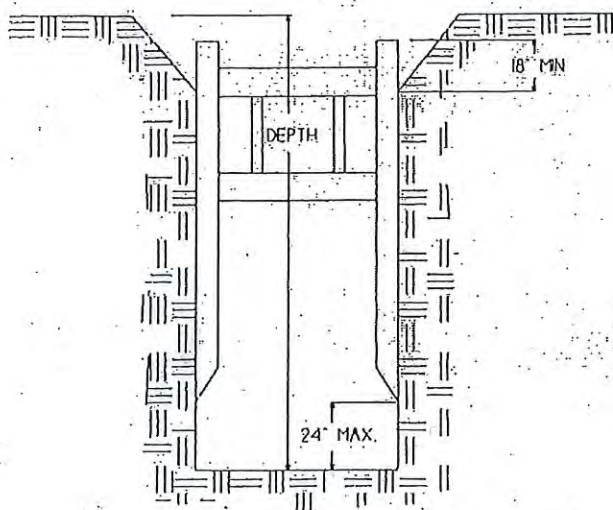
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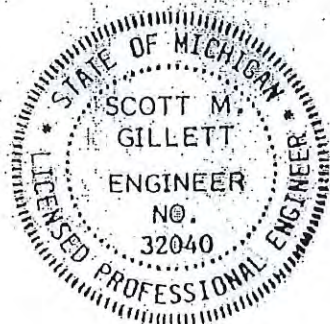
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PIVOT STYLE

SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	60 FEET	1500	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	33 FEET	1500	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	25 FEET	1500	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.



PRO-TEC EQUIP.



Scott M. Gillett

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
* Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.



207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

6SDW-820

HEIGHT:

8'

SERIAL NUMBER:

ASI-1908137

LENGTH:

20'

MAX. PRESSURE CAPACITY:

1440 PSF

SPECIFICATIONS FOR USE

- ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.
- SOIL SHALL BE CLASSIFIED IN ACCORDANCE WITH OSHA APPENDIX A BY A COMPETENT PERSON OR BY A REGISTERED CIVIL ENGINEER PRIOR TO THE INSTALLATION OF THIS EQUIPMENT.
- THIS TABULATED DATA IS PROVIDED BY THE MANUFACTURER. ITS PURPOSE IS TO ASSIST THE COMPETENT PERSON IN SELECTING THE PROPER SAFETY SHORING EQUIPMENT FOR THE PROJECT. THE COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY AND THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- THIS TABULATED DATA IS NOT INTENDED TO BE A SUBSTITUTE FOR THE ON SITE ENGINEER'S PLAN. IT IS INTENDED TO BE USED BY THE COMPETENT PERSON TO SUPPLEMENT HIS TRAINING, HIS KNOWLEDGE & EXPERIENCE OF THE JOB CONDITIONS & SOIL TYPES.
- THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT SURCHARGE LOADING DOES NOT EXCEED 72PSF. ANYTHING IN EXCESS OF 72PSF CAN INVALIDATE THE CERTIFIED DEPTHS.
- BOTTOM OF SHIELD MUST NOT BE MORE THAN TWO FEET ABOVE THE TRENCH BOTTOM PER FEDERAL OSHA CFR PART 1926.652(G) (2.) THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE.
- METHODS USED AND SAFETY PROCEDURES ASSOCIATED WITH THIS EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, OR DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE. NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING.
- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.
- THE CONDITION OF THE SHIELD, SPREADERS AND SPREADER PINS MUST BE CHECKED AND INSPECTED BY THE COMPETENT PERSON BEFORE EACH USE. THIS CERTIFICATION IS INVALID IF ANY VISABLE WEAR OR DAMAGE IS OBSERVED. NO REPAIRS SHOULD BE MADE TO THE SHIELD THAT HAVE NOT BEEN PREVIOUSLY DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY AMERICAN SHORING.

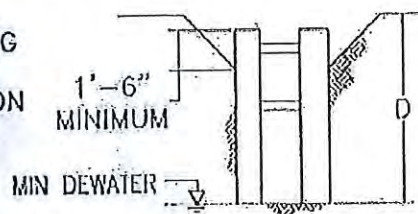
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	32'
TYPE C-60	24'
TYPE C-80	19'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:





207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

4SDW-420

HEIGHT:

4'

SERIAL NUMBER:

ASI-150448

LENGTH:

20'

MAX. PRESSURE CAPACITY:

1080 PSF

SPECIFICATIONS FOR USE

- ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.
- SOIL SHALL BE CLASSIFIED IN ACCORDANCE WITH OSHA APPENDIX A BY A COMPETENT PERSON OR BY A REGISTERED CIVIL ENGINEER PRIOR TO THE INSTALLATION OF THIS EQUIPMENT.
- THIS TABULATED DATA IS PROVIDED BY THE MANUFACTURER. ITS PURPOSE IS TO ASSIST THE COMPETENT PERSON IN SELECTING THE PROPER SAFETY SHORING EQUIPMENT FOR THE PROJECT. THE COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY AND THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- THIS TABULATED DATA IS NOT INTENDED TO BE A SUBSTITUTE FOR THE ON SITE ENGINEER'S PLAN. IT IS INTENDED TO BE USED BY THE COMPETENT PERSON TO SUPPLEMENT HIS TRAINING, HIS KNOWLEDGE & EXPERIENCE OF THE JOB CONDITIONS & SOIL TYPES.
- THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT SURCHARGE LOADING DOES NOT EXCEED 72PSF. ANYTHING IN EXCESS OF 72PSF CAN INVALIDATE THE CERTIFIED DEPTHS.
- BOTTOM OF SHIELD MUST NOT BE MORE THAN TWO FEET ABOVE THE TRENCH BOTTOM PER FEDERAL OSHA CFR PART 1926.652(G) (2). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE.
- METHODS USED AND SAFETY PROCEDURES ASSOCIATED WITH THIS EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, OR DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE. NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING.
- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.
- THE CONDITION OF THE SHIELD, SPREADERS AND SPREADER PINS MUST BE CHECKED AND INSPECTED BY THE COMPETENT PERSON BEFORE EACH USE. THIS CERTIFICATION IS INVALID IF ANY VISABLE WEAR OR DAMAGE IS OBSERVED. NO REPAIRS SHOULD BE MADE TO THE SHIELD THAT HAVE NOT BEEN PREVIOUSLY DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY AMERICAN SHORING.

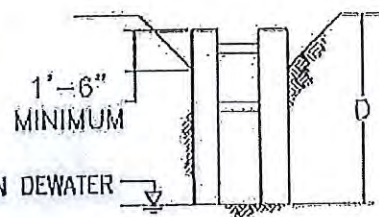
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	23'
TYPE C-60	18'
TYPE C-80	15'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:



Michael S. Tuculescu

Michael S. Tuculescu, PE



207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

6DWE-812

HEIGHT:

8'

SERIAL NUMBER:

ASI-1908138

LENGTH:

12'

MAX. PRESSURE CAPACITY:

2038 PSF

SPECIFICATIONS FOR USE

- ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
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- THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT SURCHARGE LOADING DOES NOT EXCEED 72PSF. ANYTHING IN EXCESS OF 72PSF CAN INVALIDATE THE CERTIFIED DEPTHS.
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- METHODS USED AND SAFETY PROCEDURES ASSOCIATED WITH THIS EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, OR DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE. NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING.
- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.
- THE CONDITION OF THE SHIELD, SPREADERS AND SPREADER PINS MUST BE CHECKED AND INSPECTED BY THE COMPETENT PERSON BEFORE EACH USE. THIS CERTIFICATION IS INVALID IF ANY VISIBLE WEAR OR DAMAGE IS OBSERVED. NO REPAIRS SHOULD BE MADE TO THE SHIELD THAT HAVE NOT BEEN PREVIOUSLY DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY AMERICAN SHORING.

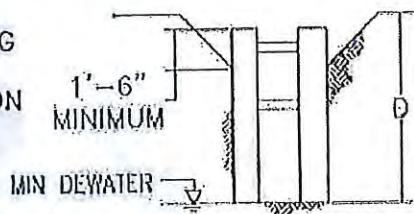
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	43'
TYPE C-60	32'
TYPE C-80	24'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:





207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

MLSB-66

HEIGHT:

6'

SERIAL NUMBER:

ASI-199150

LENGTH:

6'

MAX. PRESSURE CAPACITY:

1740 PSF

SPECIFICATIONS FOR USE

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- THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.
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- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.
- THE CONDITION OF THE SHIELD, SPREADERS AND SPREADER PINS MUST BE CHECKED AND INSPECTED BY THE COMPETENT PERSON BEFORE EACH USE. THIS CERTIFICATION IS INVALID IF ANY VISIBLE WEAR OR DAMAGE IS OBSERVED. NO REPAIRS SHOULD BE MADE TO THE SHIELD THAT HAVE NOT BEEN PREVIOUSLY DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY AMERICAN SHORING.

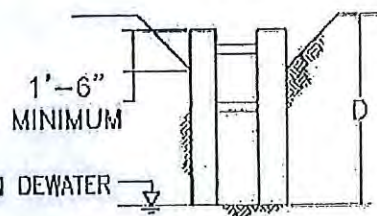
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	38'
TYPE C-60	29'
TYPE C-80	21'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:



Michael S. Tuculescu, PE



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Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

MLSB-610

HEIGHT:

6'

SERIAL NUMBER:

ASI-1909151

LENGTH:

10'

MAX. PRESSURE CAPACITY:

720 PSF

SPECIFICATIONS FOR USE

- ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.
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- THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT SURCHARGE LOADING DOES NOT EXCEED 72PSF. ANYTHING IN EXCESS OF 72PSF CAN INVALIDATE THE CERTIFIED DEPTHS.
- BOTTOM OF SHIELD MUST NOT BE MORE THAN TWO FEET ABOVE THE TRENCH BOTTOM PER FEDERAL OSHA CFR PART 1926.652(G) (2.) THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE.
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- MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE, NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING.
- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.
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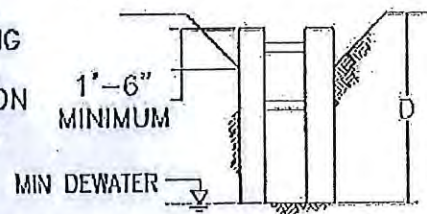
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	14'
TYPE C-60	12'
TYPE C-80	8'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:



Michael S. Tuculescu, PE



207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

6SDW-820

HEIGHT:

8'

SERIAL NUMBER:

LENGTH:

20'

MAX. PRESSURE CAPACITY:

1440 PSF

SPECIFICATIONS FOR USE

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- METHODS USED AND SAFETY PROCEDURES ASSOCIATED WITH THIS EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, OR DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE. NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING.
- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
- SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.
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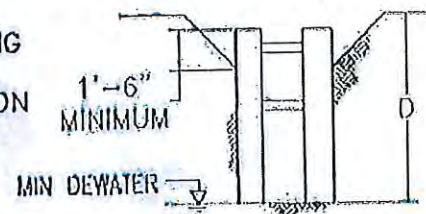
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	32'
TYPE C-60	24'
TYPE C-80	19'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:





207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

MLES-24

HEIGHT:

2'

SERIAL NUMBER:

N/A

LENGTH:

4'

MAX. PRESSURE CAPACITY:

2040 PSF

SPECIFICATIONS FOR USE

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- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
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- USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.
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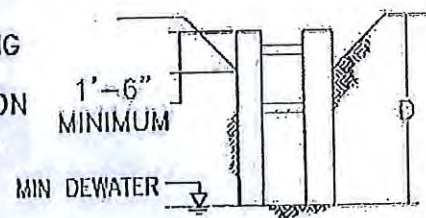
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	57'
TYPE C-60	34'
TYPE C-80	26'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A:

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:





207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

MLES-26

HEIGHT:

2'

SERIAL NUMBER:

N/A

LENGTH:

6'

MAX. PRESSURE CAPACITY:

1920 PSF

SPECIFICATIONS FOR USE

- ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
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- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
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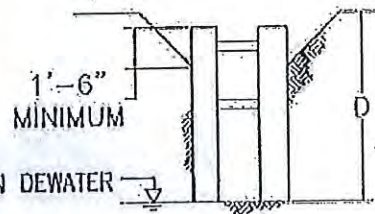
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	53'
TYPE C-60	32'
TYPE C-80	24'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY:





207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

8SDW-1024H

HEIGHT:

10'

SERIAL NUMBER:

AST-1908136

LENGTH:

24'

MAX. PRESSURE CAPACITY:

1847 PSF (10' Long 8" Sch 100 Spreaders)

SPECIFICATIONS FOR USE

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- GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.
- FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.
- SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 3/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.
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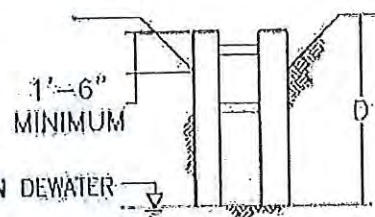
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	39'
TYPE C-60	30'
TYPE C-80	22'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



CERTIFIED BY





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Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

3ZL-66

HEIGHT:

6'

SERIAL NUMBER:

ASI-130108

LENGTH:

6'

MAX. PRESSURE CAPACITY:

829 PSF

SPECIFICATIONS FOR USE

ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P. THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.

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FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.

SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/2" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.

USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.

SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.

THE CONDITION OF THE SHIELD, SPREADERS AND SPREADER PINS MUST BE CHECKED AND INSPECTED BY THE COMPETENT PERSON BEFORE EACH USE. THIS CERTIFICATION IS INVALID IF ANY VISABLE WEAR OR DAMAGE IS OBSERVED. NO REPAIRS SHOULD BE MADE TO THE SHIELD THAT HAVE NOT BEEN PREVIOUSLY DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY AMERICAN SHORING.

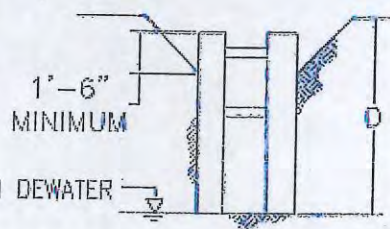
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	22'
TYPE C-60	18'
TYPE C-80	14'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)


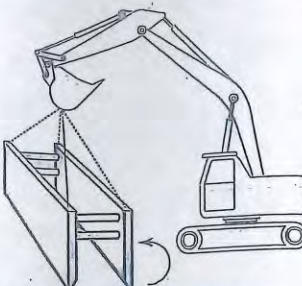


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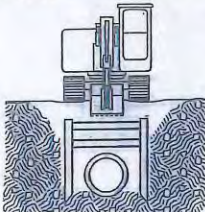
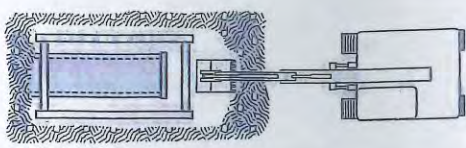
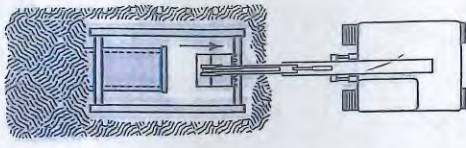



Michael S. Tuculescu, PE

TRENCH SHIELD ASSEMBLY

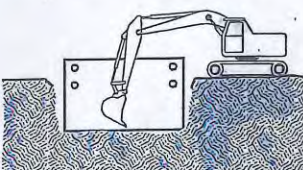
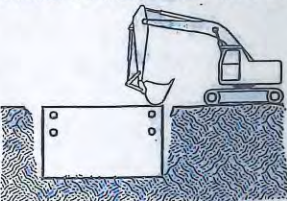
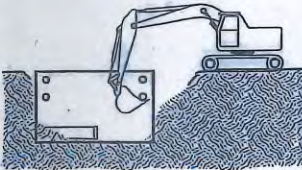
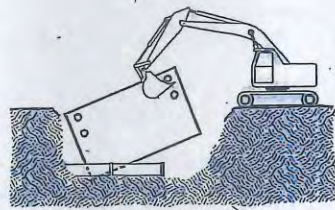
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1. LAY PANEL FLAT ON THE GROUND WITH THE SPREADER COLLARS POINTED UP.
 2. PLACE SPREADER PIPES ONTO THE COLLARS AND PIN INTO PLACE. SECURE PINS WITH KEEPERS.
 3. LOWER SECOND PANEL ONTO SPREADERS AND PIN INTO PLACE. SECURE PINS WITH KEEPERS.
 4. STAND TRENCH SHIELD IN UPRIGHT POSITION AND PREPARE FOR INSTALLATION.

TRENCH SHIELD INSTALLED IN STABLE SOIL

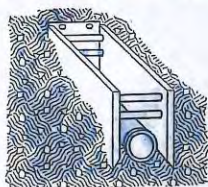
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1. EXCAVATE TO GRADE JUST SLIGHTLY WIDER THAN THE TRENCH SHIELD. DIG WALLS VERTICAL TO MINIMUM OF 18" BELOW THE TOP OF THE SHIELD. SLOPE SOIL ABOVE SHIELD ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS. INSTALL SHIELD INTO TRENCH.
 2. EXCAVATE IN FRONT OF THE SHIELD
 3. PULL SHIELD FORWARD BY FRONT SPREADER PIPES OR WITH THE PULLING EYES.
- * PULLING EYES MAY BE USED WITH SPREADERS WIDER THAN 72" OR WHEN THE SOIL PRESSURE IS SEVERE ENOUGH TO CAUSE SPREADERS TO DEFLECT.**



TRENCH SHIELD INSTALLED IN UNSTABLE SOIL

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1. EXCAVATE UNTIL SOIL BEGINS TO CRUMBLE BEYOND DESIRED TRENCH WIDTH. PLACE SHIELD IN LINE OF EXCAVATION.
 2. PRESS DOWN ON CORNERS TO PUSH SHIELD DOWN TO GRADE.
 3. PULL SHIELD FORWARD AND UP ON APPROPRIATE ANGLE-*(SEE ABOVE).
 4. EXCAVATE SOIL WITHIN THE SHIELD AND REPEAT PROCESS.

TRENCH SHIELD APPLICATIONS



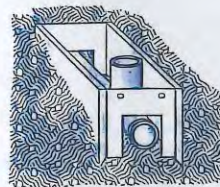
TIE-INS, REPAIR OR PATCH WORK

1. CENTER SHIELD OVER WORK AREA.
2. LAY SOIL BACK AT ENDS ACCORDING TO MANUFACTURER'S TABULATED DATA OR USE MANUFACTURER'S DESIGNED END PLATES TO PROTECT FROM CAVE-INS.



CORNER END PLATES

CORNER END PLATES HELP PREVENT MATERIAL FROM FLOWING INTO THE END OF SHIELD. SOIL AT ENDS SHOULD BE SLOPED ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS.



FOUR SIDED SHIELDS

WHEN USING SHIELDS AS PROTECTION WORK DURING MANHOLE ASSEMBLY WORK. INSURE THAT PROPER END PANELS ARE USED; OR LAY SOIL AT THE ENDS BACK ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS.

1. ALWAYS USE TRENCH SHIELDS IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, FEDERAL SAFETY LAWS AND O.S.H.A. REGULATIONS. FAILURE TO DO SO COULD CAUSE SEVERE INJURY OR DEATH.
2. ALL WORK TO BE PERFORMED WITHIN THE CONFINES OF THE SHIELD.
3. THIS ABOVE MATERIAL IS INTENDED TO PROVIDE BASIC INFORMATION ONLY.



207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

3ZL-66

HEIGHT:

6'

SERIAL NUMBER:

ASI-130107

LENGTH:

6'

MAX. PRESSURE CAPACITY:

829 PSF

SPECIFICATIONS FOR USE

ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P. THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.

SOIL SHALL BE CLASSIFIED IN ACCORDANCE WITH OSHA APPENDIX A BY A COMPETENT PERSON OR BY A REGISTERED CIVIL ENGINEER PRIOR TO THE INSTALLATION OF THIS EQUIPMENT.

THIS TABULATED DATA IS PROVIDED BY THE MANUFACTURER. ITS PURPOSE IS TO ASSIST THE COMPETENT IN SELECTING THE PROPER SAFETY SHORING EQUIPMENT FOR THE PROJECT. THE COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY AND THE PROPER SELECTION OF THE SHORING EQUIPMENT.

THIS TABULATED DATA IS NOT INTENDED TO BE A SUBSTITUTE FOR THE ON SITE ENGINEERS PLAN. IT IS INTENDED TO BE USED BY THE COMPETENT PERSON TO SUPPLEMENT HIS TRAINING, HIS KNOWLEDGE & EXPERIENCE OF THE JOB CONDITIONS & SOIL TYPES.

THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT SURCHARGE LOADING DOES NOT EXCEED 72PSF. ANYTHING IN EXCESS OF 72PSF CAN INVALIDATE THE CERTIFIED DEPTHS.

BOTTOM OF SHIELD MUST NOT BE MORE THAN TWO FEET ABOVE THE TRENCH BOTTOM PER FEDERAL OSHA CFR PART 1926.652(G) (2) THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE.

METHODS USED AND SAFETY PROCEDURES ASSOCIATED WITH THIS EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, OR DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE. NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING. GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.

FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.

SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.

USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.

SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.

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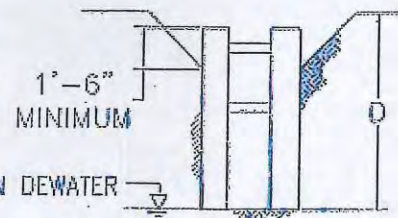
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

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DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

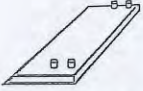
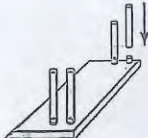
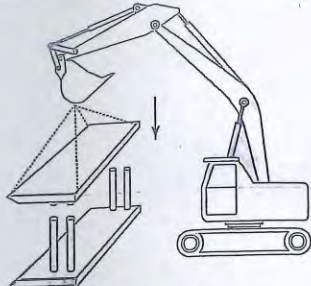
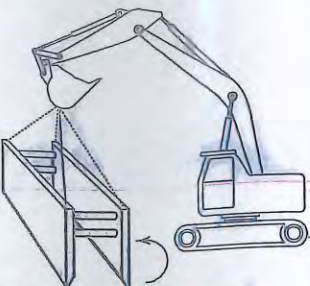
SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)



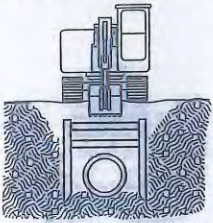
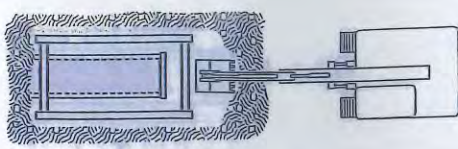
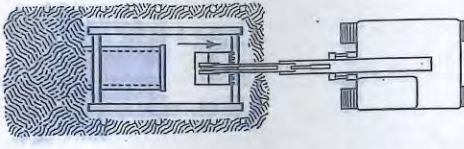
CERTIFIED BY:

Michael S. Tuculescu, PE

TRENCH SHIELD ASSEMBLY

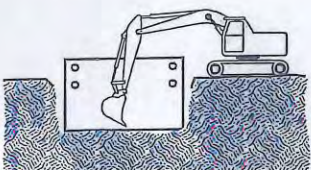
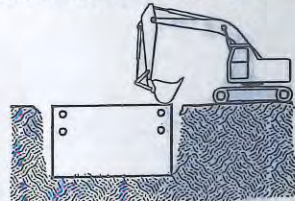
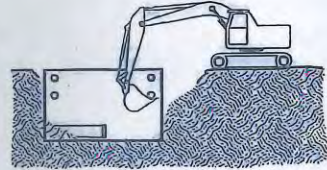
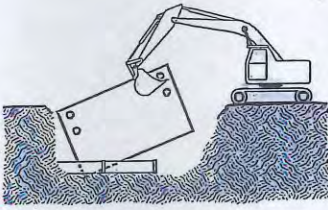
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1. LAY PANEL FLAT ON THE GROUND WITH THE SPREADER COLLARS POINTED UP.
 2. PLACE SPREADER PIPES ONTO THE COLLARS AND PIN INTO PLACE. SECURE PINS WITH KEEPERS.
 3. LOWER SECOND PANEL ONTO SPREADERS AND PIN INTO PLACE. SECURE PINS WITH KEEPERS.
 4. STAND TRENCH SHIELD IN UPRIGHT POSITION AND PREPARE FOR INSTALLATION.

TRENCH SHIELD INSTALLED IN STABLE SOIL

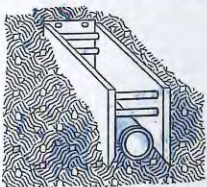
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1. EXCAVATE TO GRADE JUST SLIGHTLY WIDER THAN THE TRENCH SHIELD. DIG WALLS VERTICAL TO MINIMUM OF 18" BELOW THE TOP OF THE SHIELD. SLOPE SOIL ABOVE SHIELD ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS. INSTALL SHIELD INTO TRENCH.
 2. EXCAVATE IN FRONT OF THE SHIELD
 3. PULL SHIELD FORWARD BY FRONT SPREADER PIPES OR WITH THE PULLING EYES.
- * PULLING EYES MAY BE USED WITH SPREADERS WIDER THAN 72" OR WHEN THE SOIL PRESSURE IS SEVERE ENOUGH TO CAUSE SPREADERS TO DEFLECT.**



TRENCH SHIELD INSTALLED IN UNSTABLE SOIL

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- 
1. EXCAVATE UNTIL SOIL BEGINS TO CRUMBLE BEYOND DESIRED TRENCH WIDTH. PLACE SHIELD IN LINE OF EXCAVATION.
 2. PRESS DOWN ON CORNERS TO PUSH SHIELD DOWN TO GRADE.
 3. PULL SHIELD FORWARD AND UP ON APPROPRIATE ANGLE-*(SEE ABOVE).
 4. EXCAVATE SOIL WITHIN THE SHIELD AND REPEAT PROCESS.

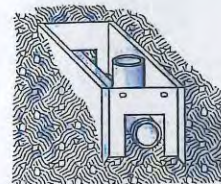
TRENCH SHIELD APPLICATIONS



- TIE-INS, REPAIR OR PATCH WORK**
1. CENTER SHIELD OVER WORK AREA.
 2. LAY SOIL BACK AT ENDS ACCORDING TO MANUFACTURER'S TABULATED DATA OR USE MANUFACTURER'S DESIGNED END PLATES TO PROTECT FROM CAVE-INS.



- CORNER END PLATES**
- CORNER END PLATES HELP PREVENT MATERIAL FROM FLOWING INTO THE END OF SHIELD. SOIL AT ENDS SHOULD BE SLOPED ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS.



- FOUR SIDED SHIELDS**
- WHEN USING SHIELDS AS PROTECTION WORK DURING MANHOLE ASSEMBLY WORK. INSURE THAT PROPER END PANELS ARE USED; OR LAY SOIL AT THE ENDS BACK ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS.

1. ALWAYS USE TRENCH SHIELDS IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, FEDERAL SAFETY LAWS AND O.S.H.A. REGULATIONS. FAILURE TO DO SO COULD CAUSE SEVERE INJURY OR DEATH.
2. ALL WORK TO BE PERFORMED WITHIN THE CONFINES OF THE SHIELD.
3. THIS ABOVE MATERIAL IS INTENDED TO PROVIDE BASIC INFORMATION ONLY.



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PRO8-824D

SERIAL NUMBER

12481

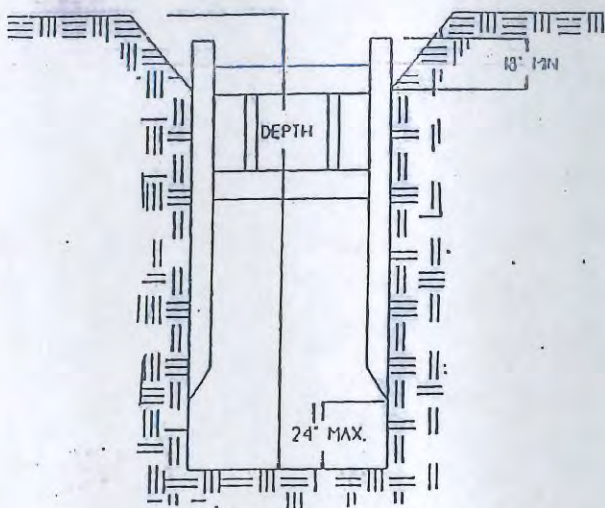
SIZE

8' HIGH X 24' LONG

SOIL TYPE	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	58 FEET	1400	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	32 FEET	1400	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	24 FEET	1400	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
* Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.



PRO-TEC COUP



Scott M. Gillett

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.

Efficiency
Production, Inc.
America's Trench Box Builder

 889 HULL ROAD, MASON, NH 03054
 PHONE (517) 878-9800

 PAGE 1 OF 2
 TRENCH SHIELD

 MODEL **HT6F-824**

SERIAL NUMBER

123915

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 200, 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 B
 MEDIUM COHESIVE TO
GRANULAR SOIL 45 PSF
PER FOOT OF DEPTH.

TYPE C-60
 SOFT COHESIVE TO
SUBMERGED SOIL 60 PSF
PER FOOT OF DEPTH.

TYPE C-80
 SOFT COHESIVE TO
SUBMERGED SOIL 80 PSF
PER FOOT OF DEPTH.

8
24
1080
24
18
14
LIMITATIONS IN USE OF TABLE

1. TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED AS SHOWN AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF SHIELD IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SHIELD IS ENCOUNTERED. SEE PARAGRAPH 1926.852 (e)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. CONSULT MANUFACTURER WHEN RESTRICTION ON NOTE 2 IS NOT MET.
4. ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT AS LONG AS THE RATING OF THE BOTTOM SHIELD IS NOT EXCEEDED.
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. CONTRACTOR'S COMPETENT/QUALIFIED PERSONS SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.

8. SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY EFFICIENCY PRODUCTION, INC.

CONTINUED ON REVERSE SIDE.

DESCRIPTION

 Clay, with Unconfined
Compressive Strength
Greater than .5 TSF But
Less than 1.5 TSF
Cohesionless Gravel,
Silt, Silty Loam or Sandy
Loam.

DESCRIPTION

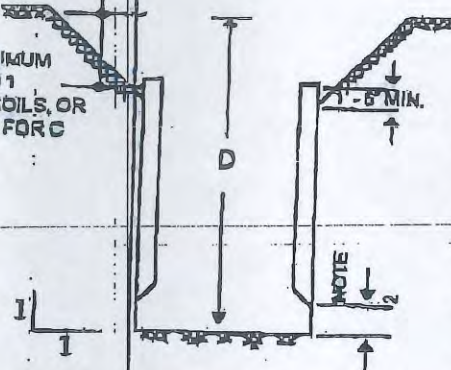
 Soft Cohesive Soil
Unconfined Compressive
Strength Less than .5
TSF Gravel, Sand and
Loamy Sand; Submerged
Soil or fractured Rock
that is not Stable.

DESCRIPTION

 Soft Cohesive Soil
Unconfined Compressive
Strength Less than .5
TSF Gravel, Sand and
Loamy Sand; Submerged
Soil or fractured Rock
that is not Stable.

 LAYBACK
AND
SLOPE
AT A MINIMUM
OF 1 TO 1
FOR B-SOILS, OR
1.5 TO 1 FOR C
SOILS

B-SOILS
 (1 TO 1 SLOPE)

C-SOILS
 (1.5 TO 1 SLOPE)

CERTIFIED BY:

EFFICIENCY PRODUCTION, INC.

COPYRIGHT:

 1991 EFFICIENCY PRODUCTION, INC.
 ALL RIGHTS RESERVED

 MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS:
 4,080,385-4,114,383-4,289,028
 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 certificate could cause cave-in, collapse, or structural failure resulting in death or serious injury.



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PRO8-824D

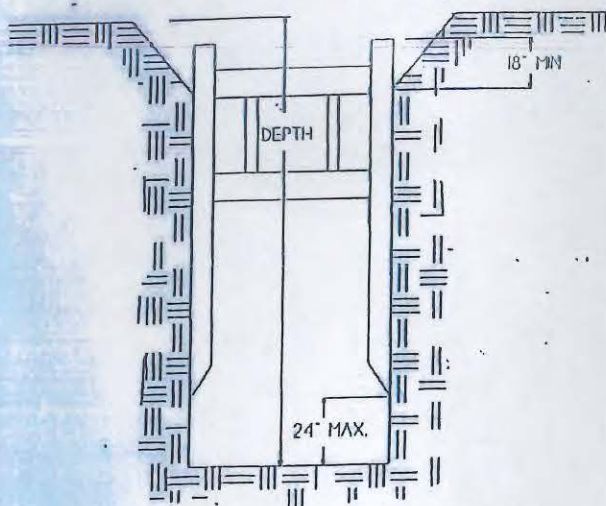
SERIAL NUMBER

12912

SIZE

8' HIGH X 24' LONG

SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	56 FEET	1400	Still Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	32 FEET	1400	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	24 FEET	1400	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.

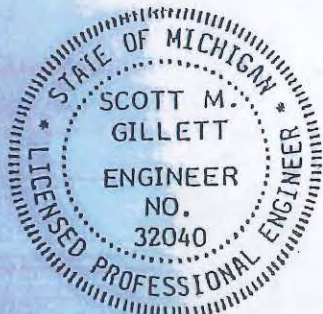


PRO-TEC EQUIP

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
* Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.



Scott M. Gillett

MODEL: MHXLD-912

FOAM
FILLED NO

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

SHIELD SIZE		PSF RATING	EXAMPLES OF MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) IN SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	MAXIMUM LATERAL EARTH PRESSURE CAPACITY AT TRENCH BOTTOM IN POUNDS PER SQUARE FOOT	TYPE B-45 (II) MEDIUM COHESIVE TO GRANULAR SOIL 45 PSF PER FT OF DEPTH	TYPE C-60 (III) SOFT COHESIVE TO SATURATED SOIL 60 PSF PER FT OF DEPTH	TYPE C-80 (IV) SOFT SUBMERGED AND FLOWING SOIL 80 PSF PER FT OF DEPTH
8	12	1360	30	23	17

LIMITATIONS IN USE OF TABLE

- TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. (SEE PAGE-2)
- EXCAVATION 2 FEET BELOW BOTTOM OF SHIELD IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF 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.
- DEPTH RATING IS BASED ON TEMPORARY LOADING, CONSULT MANUFACTURER IF SHIELD IS SUBJECT TO LONG TERM LOADING
- ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT AS LONG AS THE RATING OF THE EACH SHIELD IS NOT EXCEEDED AT THE DEPTH IT IS USED. MANUFACTURER APPROVED STACKING METHOD MUST BE USED.
- C-80 DOES NOT REPRESENT THE WORST POSSIBLE SOIL CONDITION. OBTAIN SITE-SPECIFIC ENGINEERING FOR EXTREMELY NON-STABLE CONDITIONS SUCH AS MARINE CLAY, PEAT, SOFT SUBMERGED AND FLOWING CLAYS, ETC.
- ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
- CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS.
- SPREADER PINS SHALL BE 8620 COLD DRAWN 80-90 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY EFFICIENCY PRODUCTION, INC.

DESCRIPTION

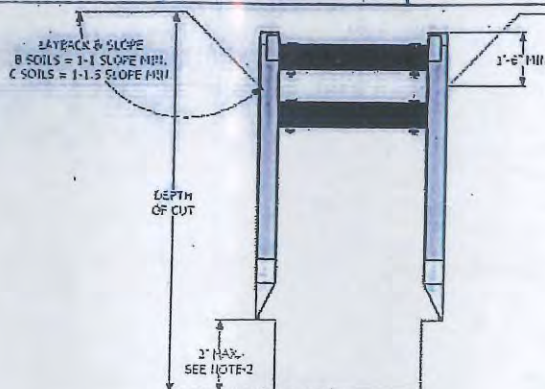
CLAY, WITH UNCONFINED
COMPRESSIVE STRENGTH
GREATER THAN 0.5 TSF
BUT LESS THAN 1.5 TSF
COHESIONLESS GRAVEL,
SILT, SILT LOAM OR SANDY
LOAM

DESCRIPTION

SOFT COHESIVE SOIL
UNCONFINED
COMPRESSIVE STRENGTH
GREATER THAN 0.3 TSF,
BUT LESS THAN 0.5 TSF
CLAY, SAND AND LOAMY
SAND; SATURATED SOIL
THAT IS STABLE, DRY SAND,
OR DEWATERED SOILS

DESCRIPTION

SOFT COHESIVE SOIL
UNCONFINED
COMPRESSIVE STRENGTH
LESS THAN 0.3 TSF,
FRACTURED ROCK THAT
IS NOT STABLE, OR
SUBMERGED SAND AND
LOAMY SAND THAT IS
FLOWING. (SEE NOTE 5)

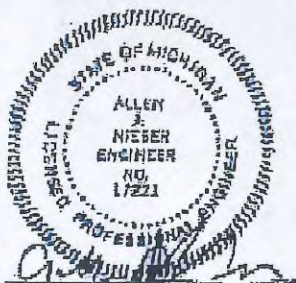


MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS: 4,090,365;
4,114,383-4,259,028 ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS:
1,062,683-1,062,684

CERTIFIED BY:
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ALL RIGHTS RESERVED

CONTINUED ON REVERSE SIDE



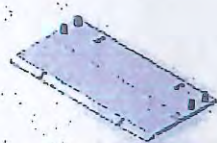
WARNING: Any use of this product not specifically described on this certificate could cause cave-in, collapse, or structural failure, and may result in injury, or death

- NOT TYPE A IF FISSIONED, 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 FISSIONED 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 OR PANELS MAY VOID THE TABULATED DATA AND MAY REQUIRE SITE SPECIFIC ENGINEERING PREPARED BY A LICENSED PROFESSIONAL ENGINEER.
- TRENCH SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE IF NECESSARY, AS NOTED BELOW, ANY UNNECESSARY ABUSE BY THE EXCAVATOR AND OR OPERATOR (SUCH AS POUNDING WITH THE BUCKET) WILL VOID THE TABULATED DATA AS WELL AS THE WARRANTY.
- 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, 1 ARCH, OR 1 SPREADER AND 1 MUDPLATE MUST BE INSTALLED ON EACH END OF TRENCH SHIELD PRIOR TO USE.
- DEPTH AND PSF RATING ARE FOR LATERAL EARTH PRESSURES ONLY. AN ADDITIONAL LATERAL SURCHARGE PRESSURE UP TO 72PSF IS ALLOWED

ASSEMBLY (DIS-ASSEMBLE SHIELD IN REVERSE ORDER)

MUDPLATE SPREADERS SYSTEM 5 PIPE SPREADER SYSTEM

4 PIPE SPREADER SYSTEM



LAY SIDE PANEL FLAT ON GROUND WITH COLLAR SOCKETS UP



PLACE SPREADER PIPE AND/OR PLATE ON TO COLLARS OR INTO BRACKETS AND PIN IN PLACE. SECURE PINS WITH KEYPERS



LOWER SECOND SIDEWALL ON TO 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 MINIMUM OF 18" BELOW THE TOP OF THE SHIELD. SLOPE SOILS ABOVE SHIELD ACCORDING TO MANUFACTURERS TABULATED DATA. 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 SHALL BE USED WITH SPREADERS WIDER THAN 72" OR WHEN SOIL PRESSURE IS SEVERE ENOUGH TO CAUSE SPREADER TO DEFLECT).

USING A TRENCH SHIELD IN UNSTABLE SOIL



EXCAVATE UNTIL SOIL BEGINS TO CRUMBLE BEYOND DESIRED TRENCH WIDTH. PLACE SHIELD IN 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 TRENCH SHIELDS FOR PATCHWORK, REPAIRS OR TIE-INS



*CENTER SHIELD OVER WORK AREA
*LAY SOIL AT ENDS BACK ACCORDING TO MANUFACTURER'S TABULATED DATA OR USE MANUFACTURER'S DESIGNED PLATES TO PROTECT FROM CAVE-INS

MANHOLE BOX W/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 MANUFACTURER'S TABULATED DATA

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 MANUFACTURER'S TABULATED DATA

EFFICIENCY
 PRODUCTION, INC.

 America's
 Trench Box
 Builder™

 689 HULL ROAD, MASON, MI 48054
 PHONE (317) 676-0800

 PAGE 1 OF 2
 TRENCH SHIELD

 MODEL **HT6F-824**

 SERIAL NUMBER **123916**

 REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND
 REGULATIONS, 29 CFR, NO 209, 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 B
 MEDIUM COHESIVE TO
 GRANULAR SOIL 45 PSF
 PER FOOT OF DEPTH.

TYPE C-60
 SOFT COHESIVE TO
 SUBMERGED SOIL 60 PSF
 PER FOOT OF DEPTH.

TYPE C-80
 SOFT COHESIVE TO
 SUBMERGED SOIL 80 PSF
 PER FOOT OF DEPTH.

8
24
1080
24
18
14
LIMITATIONS IN USE OF TABLE

1. TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED AS SHOWN AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF SHIELD IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SHIELD IS ENCOUNTERED. SEE PARAGRAPH 1926.662 (c)(2)(i). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. CONSULT MANUFACTURER WHEN RESTRICTION ON NOTE 2 IS NOT MET.
4. ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT AS LONG AS THE RATING OF THE BOTTOM SHIELD IS NOT EXCEEDED.
5. DEPTHS OF CUTS SHOWN ARE BASED ON EXAMPLES OF VARIOUS SOIL CONDITIONS. VERIFY ACTUAL SOIL PRESSURE PRIOR TO EACH USE.
6. ANY MODIFICATIONS OR ALTERATIONS NOT ALLOWED UNLESS APPROVED IN WRITING BY EFFICIENCY PRODUCTION, INC.
7. CONTRACTOR'S COMPETENT QUALIFIED PERSONS SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.
8. SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY EFFICIENCY PRODUCTION, INC.

DESCRIPTION

 Clay, with Unconfined
 Compressive Strength
 Greater than .8 TSF But
 Less than 1.5 TSF
 Cohesionless Gravel,
 Silt, Bit Loam or Sandy
 Loam.

DESCRIPTION

 Soft Cohesive Soil
 Unconfined Compressive
 Strength Less than .6
 TSF Gravel, Sand and
 Loamy Sand; Submerged
 Soil or fractured Rock
 that is not Stable.

DESCRIPTION

 Soft Cohesive Soil
 Unconfined Compressive
 Strength Less than .5
 TSF Gravel, Sand and
 Loamy Sand; Submerged
 Soil or fractured Rock
 that is not Stable.

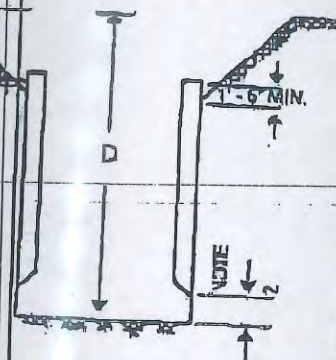
 LAYBACK
 AND
 SLOPE
 AT A MINIMUM
 OF 1:1
 FOR B-SOILS, OR
 1.5 TO 1 FOR C
 SOILS

B-SOILS
 (1 TO 1 SLOPE)

C-SOILS
 (1.5 TO 1 SLOPE)

1:1

1:1.5



CONTINUED ON REVERSE SIDE

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 MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS:
 4,080,369-4,114,383-4,269,028
 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 certificate could cause cave-in, collapse, or
 structural failure resulting in death or serious injury.



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PRO8-824D

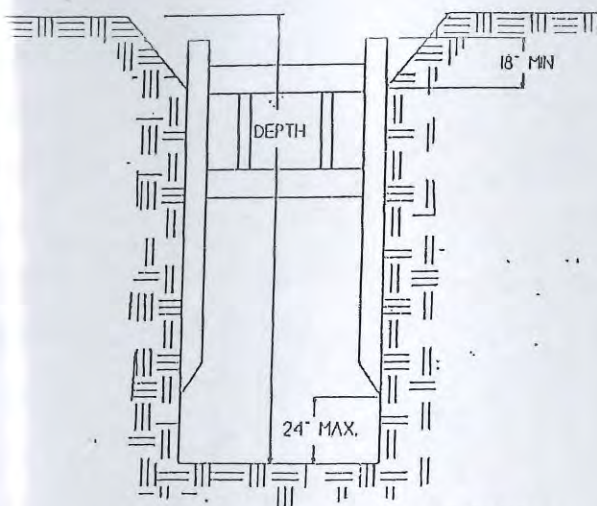
SERIAL NUMBER

12912

SIZE

8' HIGH X 24' LONG

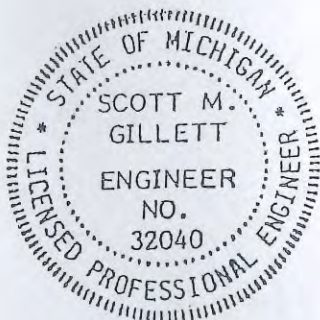
SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	56 FEET	1400	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	32 FEET	1400	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	24 FEET	1400	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.



PRO-TEC EQUIP

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) Previously disturbed soils may be Type B unless they would be classified 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
 * Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.



Scott M. Gillett

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.



TRENCH SHIELD MANUFACTURER'S TABULATED DATA

MH10DW

MODEL NO.

M2227

SERIAL NO.

01/23/04

DATE SHIPPED

MAXIMUM DEPTH TABLE

SOIL TYPE	EFP	MAXIMUM DEPTH (FT)
A	25	50'
B	45	29'
C	60	23'
C	80	18'

1,147 PSF

SHIELD CAPACITY

8 FT

MAX SPREADER
LENGTH

5" SCH 80

SPREADER SIZE

CONDITIONS FOR USE OF TABULATED DATA:

1. This Tabulated Data has been prepared by a registered professional engineer as required to comply with the OSHA standard 29 CFR Part 1926, Subpart P.

2. The Soil Types A - 25, B - 45, and C - 80 are as defined in the OSHA Standard. Soil Type C - 60 is a moist, cohesive soil or a moist dense granular soil, which is not flowing or submerged and has an Equivalent Fluid Pressure (EFP) of 60 PSF per foot of depth. The competent person must monitor the excavation for signs of deterioration that may alter soil pressures and produce the Soil Type C - 80 condition. Such signs are indicated by, but not limited to, freely seeping water or flowing soil entering the excavation around or below the shield.

3. Trench Shields shall be used in accordance with the depth chart. The maximum depth is the distance from the surface of the excavation to the bottom of the trench. Depth ratings shown are based upon examples of homogeneous soil conditions. Soil pressures may vary due to non-homogeneous soils, surcharge loads, and slope of embankment (layback). Actual soil pressures should be verified to ensure that the shield capacities are not exceeded.

4. Surcharge loads are not included in the maximum depth table. Surcharge loads are possible due to heavy equipment, vibrations, or oil piles adjacent to the trench. (Adjacent is defined as within a distance equal to the depth of the trench.)

5. Trench Shields are not intended to provide stability to adjacent buildings or other structures.

6. 1/2 inch diameter pins furnished by GME shall be placed in all spreader to collar connections.

GENERAL NOTES FOR TRENCH SHIELD USE:

1. Any modifications to shields using parts not manufactured by GME will void Tabulated Data unless otherwise specified or allowed in writing by GME.

2. GME Trench Shields may be stacked provided that appropriate connections are made between stacked shields as specified by GME. Each stacked shield shall have a depth rating equal to or greater than the actual depth at which it is used.

3. Maximum depths are based on shields being in structurally sound condition. Trench Shields should be inspected prior to each use for any damage or deterioration. If a shield has sustained major structural damage or permanent deformation of a structural member or connection, the Tabulated Data is void until repairs are made as specified by a registered professional engineer.

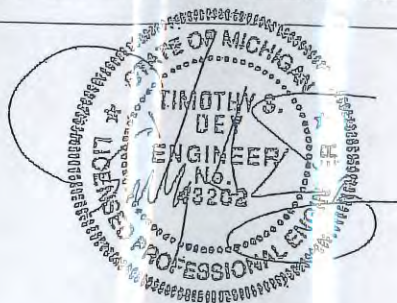
4. The use of GME Trench Shields shall be in accordance with this tabulated data and all requirements of the OSHA standard. Trench Shield usage other than specified or required may create unsafe conditions that could cause a cave-in, structural failure, or collapse resulting in a disabling injury or even death. GME shall not be liable for shield usage other than specified.

WARNING!

Use of this equipment not
in accordance with
Manufacturers Tabulated Data
may lead to injury or death.



Griswold Machine & Engineering, Inc.
594 W. Highway M 60
Union City, MI 49094
Phone 517 - 741 - 4300





TRENCH SHIELD MANUFACTURER'S TABULATED DATA

MH10DW

MODEL NO.

M0803334

SERIAL NO.

05/08/08

DATE SHIPPED

MAXIMUM DEPTH TABLE

SOIL TYPE	EFP	MAXIMUM DEPTH (FT)
A	25	70'
B	45	40'
C	60	31'
C	80	25'

1,641 PSF

SHIELD CAPACITY

8 FT

**MAX SPREADER
LENGTH**

5 IN SCH 80

SPREADER SIZE

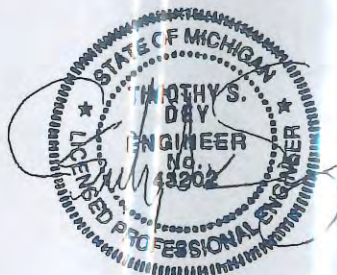
CONDITIONS FOR USE OF TABULATED DATA:

1. This Tabulated Data has been prepared by a registered professional engineer as required to comply with the OSHA standard 29 CFR Part 1926, Subpart P.
2. The Soil Types A - 25, B - 45, and C - 80 are as defined in the OSHA Standard. Soil Type C - 60 is a moist, cohesive soil or a moist dense granular soil, which is not flowing or submerged and has an Equivalent Fluid Pressure (EFP) of 60 PSF per foot of depth. The competent person must monitor the excavation for signs of deterioration that may alter soil pressures and produce the Soil Type C - 80 condition. Such signs are indicated by, but not limited to, freely seeping water or flowing soil entering the excavation around or below the shield.
3. Trench Shields shall be used in accordance with the depth chart. The maximum depth is the distance from the surface of the excavation to the bottom of the trench. Depth ratings shown are based upon examples of homogeneous soil conditions. Soil pressures may vary due to non - homogeneous soils, surcharge loads, and slope of embankment (layback). Actual soil pressures should be verified to be sure that the shield capacity is not exceeded.
4. Surcharge loads are not included in the maximum depth table. Surcharge loads are possible due to heavy equipment, vibrations, or soil piles adjacent to the trench. (Adjacent is defined as within a distance equal to the depth of the trench.)
5. Trench Shields are not intended to provide stability to adjacent buildings or other structures.
6. 1 3/8 inch diameter pins furnished by GME shall be placed in all spreader to collar connections.



GENERAL NOTES FOR TRENCH SHIELD USE:

1. Any modifications to shields using parts not manufactured by GME will void Tabulated Data unless otherwise specified or allowed in writing by GME.
2. GME Trench Shields may be stacked provided that appropriate connections are made between stacked shields as specified by GME. Each stacked shield shall have a depth rating equal to or greater than the actual depth at which it is used.
3. Maximum depths are based on shields being in structurally sound condition. Trench Shields should be inspected prior to each use for any damage or deterioration. If a shield has sustained major structural damage or permanent deformation of a structural member or connection, the Tabulated Data is void until repairs are made as specified by a registered professional engineer.
4. The use of GME Trench Shields shall be in accordance with this tabulated data and all requirements of the OSHA standard. Trench Shield usage other than specified or required may create unsafe conditions that could cause a cave - in, structural failure, or collapse resulting in a disabling injury or even death. GME shall not be liable for shield usage other than specified.



Griswold Machine & Engineering, Inc.
594 W. Highway M - 60
Union City, MI 49084
Phone 517 - 741 - 1700

M.H.



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PAL3010D

SERIAL NUMBER

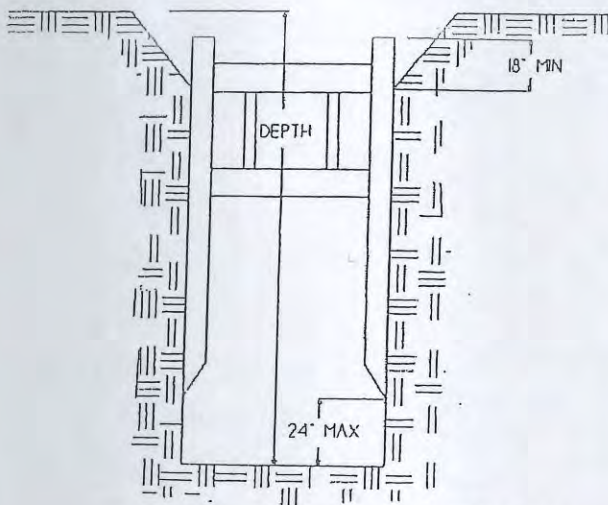
15886

SIZE

6' HIGH X 10' LONG

PIVOT STYLE

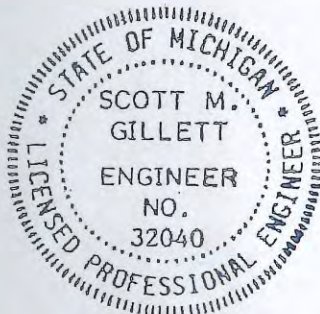
SOIL TYPE	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	60 FEET	1500	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	33 FEET	1500	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	25 FEET	1500	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.



PRO-TEC EQUIP

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
* Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.



Scott M. Gillett

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.



TRENCH SHIELD CERTIFICATE

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE

MODEL NUMBER

PRO-824D

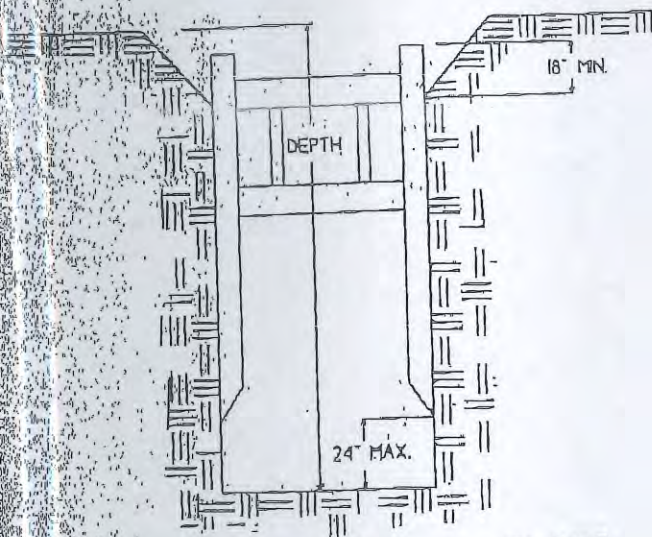
SERIAL NUMBER

16468

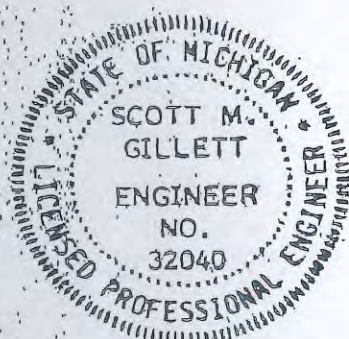
SIZE

8' HIGH X 24' LONG

SOIL TYPE	DEPTH (MAX)	PSF	SOIL DESCRIPTION
TYPE A	4 FEET	1068	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	23 FEET	1068	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	18 FEET	1068	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.



PRO-TEC EQUIP



LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) 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 classed as Type B.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
* Conditions more severe would require dewatering or the sealing of four sides of the excavation and pumping the trench. Such severe conditions would require the services of a professional engineer to establish the design pressure. Consult the manufacturer for pressures exceeding tabulated values.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.

P.O. Box 130 • 1299 Lipsey Drive • Grosse Pointe, MI 48813
Phone: (517) 541-0303 • 1 (800) 282-1225 • Fax: (517) 541-0329



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PAL3-86D

SERIAL NUMBER

15275

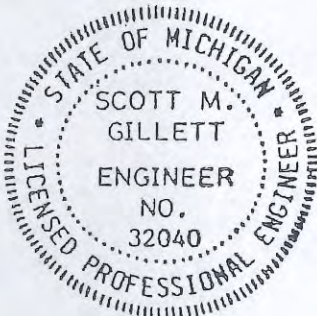
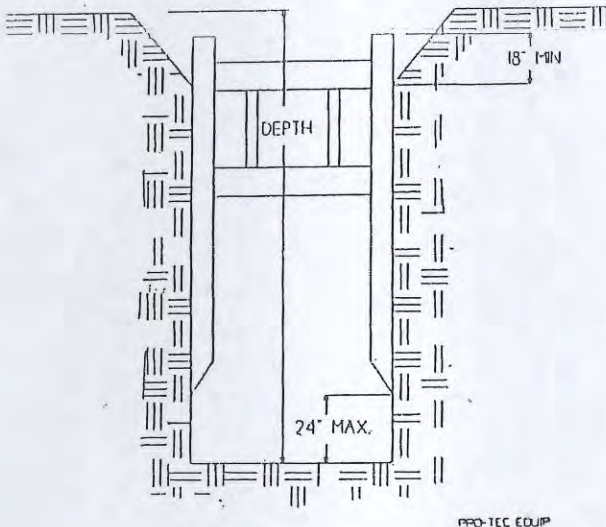
SIZE

8' HIGH X 6' LONG

SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	81 FEET	2040	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	45 FEET	2040	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	34 FEET	2040	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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 horizontals to one vertical (4H:1V) or greater.
- 8) 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.
- 9) 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. Saturated soil or soils from which water is freely seeping but is not standing in the trench.
* Conditions more severe would require dewatering or the sealing of 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.
- 10) PRO-TEC trench shields are to be used in accordance with Federal, state and Local laws. Refer to Occupational Safety and Health Administration (OSHA) rules and regulations Vol. 54, No. 209, 10/31/89, Part 1926, Subpart P.



Scott M. Gillett

Usage of trench shields other than specified could cause failure or cave-ins resulting in serious injury or death.

Robert B. Dur. 194 508-432-4385

GME**TRENCH SHIELD MANUFACTURER'S
TABULATED DATA****4M820****MODEL NO.****M07071297****SERIAL NO.****07/25/07****DATE SHIPPED****MAXIMUM DEPTH TABLE**

SOIL TYPE	EFP	MAXIMUM DEPTH (FT)
A	25	41'
B	45	25'
C	60	19'
C	80	16'

926 PSF**SHIELD CAPACITY****20 FT****MAX SPREADER
LENGTH****8 IN SCH 80****SPREADER SIZE****CONDITIONS FOR USE OF TABULATED DATA:**

1. This Tabulated Data has been prepared by a registered professional engineer as required to comply with the OSHA standard 29 CFR Part 1926, Subpart P.

2. The Soil Types A - 25, B - 45, and C - 80 are as defined in the OSHA Standard. Soil Type C - 60 is a moist, cohesive soil or a moist dense granular soil, which is not flowing or submerged and has an Equivalent Fluid Pressure (EFP) of 60 PSF per foot of depth. The competent person must monitor the excavation for signs of deterioration that may alter soil pressures and produce the Soil Type C - 80 condition. Such signs are indicated by, but not limited to, freely seeping water or flowing soil entering the excavation around or below the shield.

3. Trench Shields shall be used in accordance with the depth chart. The maximum depth is the distance from the surface of the excavation to the bottom of the trench. Depth ratings shown are based upon examples of homogeneous soil conditions. Soil pressures may vary due to non-homogeneous soils, surcharge loads, and slope of embankment (layback). Actual soil pressures should be verified to be sure that the shield capacity is not exceeded.

4. Surcharge loads are not included in the maximum depth table. Surcharge loads are possible due to heavy equipment, vibrations, or soil piles adjacent to the trench. (Adjacent is defined as within a distance equal to the depth of the trench.)

5. Trench Shields are not intended to provide stability to adjacent buildings or other structures.

6. 2 inch diameter pins furnished by GME shall be placed in all spreader to collar connections.

WARNING!

Use of this equipment not
in accordance with
Manufacturers Tabulated Data
may lead to injury or death.

GENERAL NOTES FOR TRENCH SHIELD USE:

1. Any modifications to shields using parts not manufactured by GME will void Tabulated Data unless otherwise specified or allowed in writing by GME.

2. GME Trench Shields may be stacked provided that appropriate connections are made between stacked shields as specified by GME. Each stacked shield shall have a depth rating equal to or greater than the actual depth at which it is used.

3. Maximum depths are based on shields being in structurally sound condition. Trench Shields should be inspected prior to each use for any damage or deterioration. If a shield has sustained major structural damage or permanent deformation of a structural member or connection, the Tabulated Data is void until repairs are made as specified by a registered professional engineer.

4. The use of GME Trench Shields shall be in accordance with this tabulated data and all requirements of the OSHA standard. Trench Shield usage other than specified or required may create unsafe conditions that could cause a cave-in, structural failure, or collapse resulting in a disabling injury or even death. GME shall not be liable for shield usage other than specified.

**GME**

Griswold Machine & Engineering Inc.
544 W. Highway M - 60
Union City, MI 48094
Phone 517-741-4300

EFFICIENCY
PRODUCTION, INC.**America's
Trench Box
Builder**669 HULL ROAD, MASON, MI 48856
PHONE (517) 876-6800PAGE 1 OF 2
TRENCH SHIELDMODEL **HT6F-824**SERIAL NUMBER **123915**REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND
REGULATIONS, 29 CFR, NO 200, 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 B**
MEDIUM COHESIVE TO
GRANULAR SOIL, 48 PSF
PER FOOT OF DEPTH.**TYPE C-60**
SOFT COHESIVE TO
SUBMERGED SOIL, 60 PSF
PER FOOT OF DEPTH.**TYPE C-80**
SOFT COHESIVE TO
SUBMERGED SOIL, 80 PSF
PER FOOT OF DEPTH.

8

24

1080

24

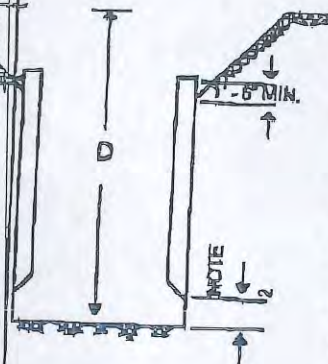
18

14

LIMITATIONS IN USE OF TABLE

1. TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED AS SHOWN AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. EXCAVATION 2 FEET BELOW BOTTOM OF SHIELD IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF SHIELD IS ENCOUNTERED. SEE PARAGRAPH 1926.852 (a)(2)(ii). THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE. SUDDEN SHIFTING OF THE SHIELD VERTICALLY SHALL BE AVOIDED.
3. CONSULT MANUFACTURER WHEN RESTRICTION ON NOTE 2 IS NOT MET.
4. ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT AS LONG AS THE RATING OF THE BOTTOM SHIELD IS NOT EXCEEDED.
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. CONTRACTOR'S COMPETENT QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.
8. SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY EFFICIENCY PRODUCTION, INC.

CONTINUED ON REVERSE SIDE.

DESCRIPTIONClay, with Unconfined
Compressive Strength
Greater than .5 TSF But
Less than 1.5 TSF
Cohesionless Gravel,
Silt, Silt Loam or Sandy
Loam.**DESCRIPTION**Soft Cohesive Soil
Unconfined Compressive
Strength Less than .5
TSF Gravel, Sand and
Loamy Sand; Submerged
Soil or fractured Rock
that is not Stable.**DESCRIPTION**Soft Cohesive Soil
Unconfined Compressive
Strength Less than .5
TSF Gravel, Sand and
Loamy Sand; Submerged
Soil or fractured Rock
that is not Stable.LAYBACK
AND
SLOPE
AT A MINIMUM
OF 1 TO 1
FOR B-SOILS, OR
1.5 TO 1 FOR C
SOILS**B-SOILS**
(1 TO 1 SLOPE)**C-SOILS**
(1.5 TO 1 SLOPE)1
11
1.5**CERTIFIED BY:**
EFFICIENCY PRODUCTION, INC.**COPYRIGHT:**
1991 EFFICIENCY PRODUCTION, INC.
ALL RIGHTS RESERVEDMANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENT NUMBERS:
4,090,365-4,114,383-4,299,028
ONE OR MORE OF THE FOLLOWING CANADIAN PATENT NUMBERS: 1,062,683-1,062,684USE THIS PRODUCT ONLY IN ACCORDANCE WITH APPLICABLE
FEDERAL, STATE, OR LOCAL LAWSAny use of this product not specifically described on this certificate could cause cave-in, collapse, or
structural failure resulting in death or serious injury.



TRENCH SHIELD CERTIFICATION

A COPY OF THIS SHEET MUST ACCOMPANY EACH
CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PRO8-824D

SERIAL NUMBER

14363

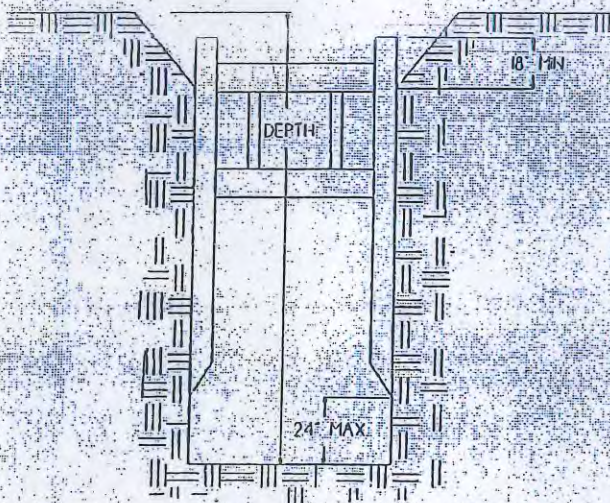
SIZE

8' HIGH X 24' LONG

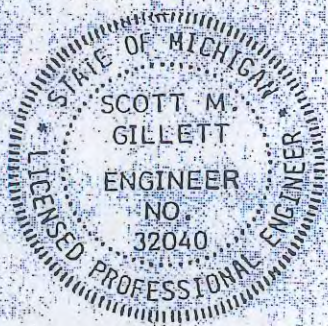
SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	56 FEET	1400	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	32 FEET	1400	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	24 FEET	1400	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.

LIMITATIONS

- 1) Soil above shield must be sloped according to OSHA Subpart P. Slope must begin no less than 18" below the top of shield.
- 2) Shield may be suspended no more than 2 feet above bottom of the trench and only if there is no possible loss of soil from behind or below bottom of shield.
- 3) A minimum of 2 spreader pipes are required on each end with manufacturer approved pins and keepers.
- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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 horizontals to one vertical (4H:1V) or greater.
- 8) 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.
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PRO-TEC EQUIP.



Scott M. Gillett

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TRENCH SHIELD CERTIFICATION

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CORRESPONDING TRENCH SHIELD AT EVERY JOB SITE.

MODEL NUMBER

PRO8-824D

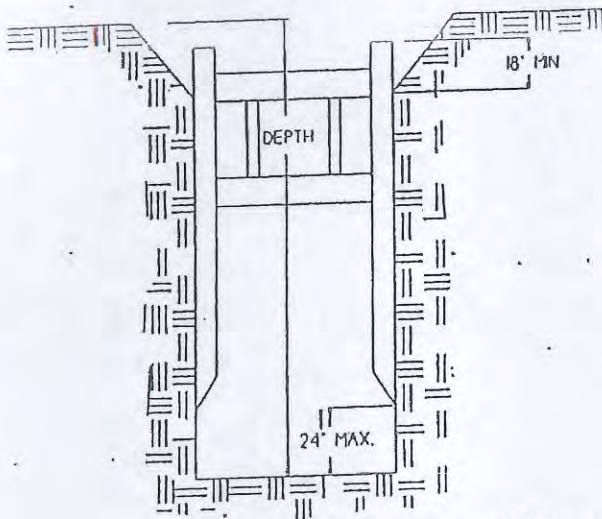
SERIAL NUMBER

12481

SIZE

8' HIGH X 24' LONG

SOIL	MAX. DEPTH	PSF	SOIL DESCRIPTION
TYPE A	58 FEET	1400	Stiff Cohesive Soil, 25 PSF per foot, clay, silty clay, clay loam with unconfined compressive strength of 1.5 ton per square foot or greater. See note 7.
TYPE B	32 FEET	1400	Medium Cohesive to granular soil, 45 PSF per foot of depth. Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF. Cohesionless gravel, silt, silt loam or sandy loam. See note 8.
TYPE C	24 FEET	1400	Soft Cohesive to Saturated Soil, 60 PSF per foot of depth. Clay with unconfined compressive strength less than 0.5 TSF, saturated sand, clay or fractured rock that is not stable. See note 9.



PRO-TEC COUP

LIMITATIONS

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- 4) Repairs and modifications must first be approved by manufacturer or registered professional engineer.
- 5) Shields may be stacked as long as each is rated to the depth it is used and manufacturer approved stack connections are utilized to prevent lateral movement of the shields.
- 6) Surcharge loads have not been included in the above depth ratings. The allowable working depth of the shield must be reduced to account for any surcharge loading which occurs within the influence line of the shield.
- 7) 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.
- 8) 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.
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Scott M. Gillett

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207 Lake Street (Rte. 32)
Newburgh, NY 12550
Phone: 800-407-4674
FAX: 800-361-1973

MANUFACTURER'S TABULATED DATA

MODEL NUMBER:

3ZL-66

HEIGHT:

6'

SERIAL NUMBER:

ASI-130108

LENGTH:

6'

MAX. PRESSURE CAPACITY:

829 PSF

SPECIFICATIONS FOR USE

ALL EXCAVATIONS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P. THE USE OF THE SHORING SYSTEM DESCRIBED SHALL BE ASSEMBLED, INSTALLED AND USED THE MANUFACTURER'S INSTRUCTIONS AND O.S.H.A. STANDARDS. ANYTHING NOT SPECIFICALLY ADDRESSED WITHIN THE O.S.H.A. STANDARDS IS NOT PERMITTED.

SOIL SHALL BE CLASSIFIED IN ACCORDANCE WITH OSHA APPENDIX A BY A COMPETENT PERSON OR BY A REGISTERED CIVIL ENGINEER PRIOR TO THE INSTALLATION OF THIS EQUIPMENT.

THIS TABULATED DATA IS PROVIDED BY THE MANUFACTURER. ITS PURPOSE IS TO ASSIST THE COMPETENT IN SELECTING THE PROPER SAFETY SHORING EQUIPMENT FOR THE PROJECT. THE COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY AND THE PROPER SELECTION OF THE SHORING EQUIPMENT.

THIS TABULATED DATA IS NOT INTENDED TO BE A SUBSTITUTE FOR THE ON SITE ENGINEERS PLAN. IT IS INTENDED TO BE USED BY THE COMPETENT PERSON TO SUPPLEMENT HIS TRAINING, HIS KNOWLEDGE & EXPERIENCE OF THE JOB CONDITIONS & SOIL TYPES.

THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT SURCHARGE LOADING DOES NOT EXCEED 72PSF. ANYTHING IN EXCESS OF 72PSF CAN INVALIDATE THE CERTIFIED DEPTHS.

BOTTOM OF SHIELD MUST NOT BE MORE THAN TWO FEET ABOVE THE TRENCH BOTTOM PER FEDERAL OSHA CFR PART 1926.652(G) (2.) THE COMPETENT PERSON SHALL MAKE THE DETERMINATION FOR COMPLIANCE.

METHODS USED AND SAFETY PROCEDURES ASSOCIATED WITH THIS EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, OR DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

MANUFACTURER CERTIFICATION IS NOT VALID IF THE SHIELD IS MODIFIED IN ANY MANNER BY ATTACHING, WELDING OR RESTING ANY OTHER SHIELDS OR PLATE TO EXTEND THE SPECIFIC HEIGHT, LENGTH, OR CLEARANCE OUTLINED ABOVE. NEVER LEAN OR ALLOW SHEATHING ON PLATES OR SPREADERS TO CLOSE OFF ENDS OF EXCAVATION, WITHOUT WRITTEN APPROVAL FROM OUR LICENSED PROFESSIONAL ENGINEER. NO MODIFICATIONS OR ALTERATIONS ARE ALLOWED UNLESS APPROVED BY AMERICAN SHORING, INC. IN WRITING. GROUND WATER LEVEL MUST BE LOCATED OR DRAWN DOWN TO BELOW THE BOTTOM OF THIS EXCAVATION; OTHERWISE SOIL MUST MINIMUMLY BE CLASSIFIED AS TYPE C-80.

FILL ALL VOIDS BETWEEN TRENCH WALL AND SHIELD.

SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY AMERICAN SHORING, INC. ANY USE OF THE SHIELD WITHOUT PROPER PINS WILL VOID THIS TABULATED DATA AS WELL AS THE WARRANTY, AND COULD CAUSE INJURY OR DEATH.

USE OF ANY SPREADERS OR PINS NOT PROVIDED BY AMERICAN SHORING WILL VOID THE TABULATED DATA AND WARRANTY.

SHIELDS ARE DESIGNED TO BE PUSHED TO GRADE, IF NECESSARY, ANY ABUSE OF THIS PRODUCT BY THE EXCAVATOR CAUSING MAJOR STRUCTURAL DAMAGE WILL VOID THIS TABULATED DATA AND WARRANTY.

THE CONDITION OF THE SHIELD, SPREADERS AND SPREADER PINS MUST BE CHECKED AND INSPECTED BY THE COMPETENT PERSON BEFORE EACH USE. THIS CERTIFICATION IS INVALID IF ANY VISABLE WEAR OR DAMAGE IS OBSERVED. NO REPAIRS SHOULD BE MADE TO THE SHIELD THAT HAVE NOT BEEN PREVIOUSLY DOCUMENTED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY AMERICAN SHORING.

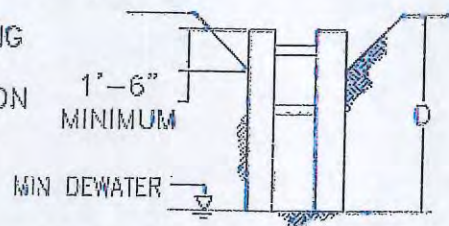
MAXIMUM ALLOWABLE TRENCH SHIELD DEPTH "D" PER SOIL TYPES:

TYPE B	22'
TYPE C-60	18'
TYPE C-80	14'

THE SOIL TYPE SHALL BE CLASSIFIED BY A COMPETENT PERSON PER FEDERAL OSHA CONSTRUCTION SAFETY ORDERS, CFR 29 APPENDIX A.

DEPTH RATINGS ACCOUNT FOR 72 PSF MINIMUM OSHA SURCHARGE.

SLOPE
ACCORDING
TO OSHA
REGULATION
1926.652
(B)(2)

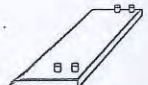
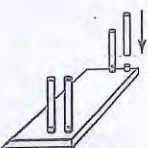
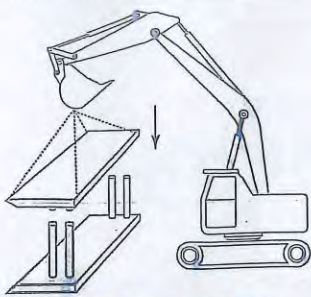
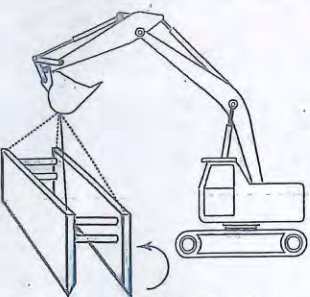


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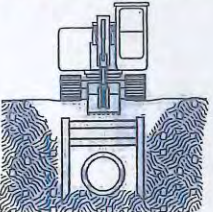
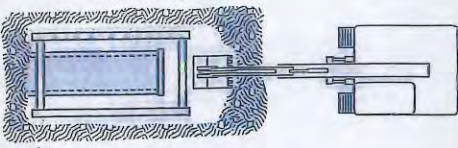
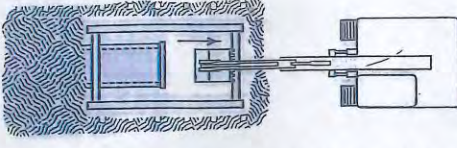



Michael S. Tuculescu, PE

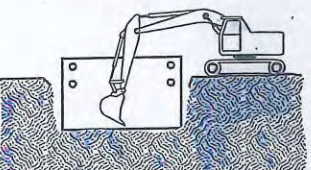


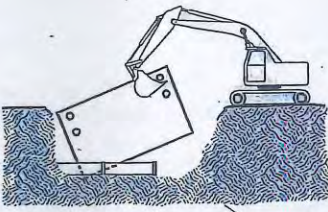
TRENCH SHIELD ASSEMBLY

- 
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- 
- 
1. LAY PANEL FLAT ON THE GROUND WITH THE SPREADER COLLARS POINTED UP.
 2. PLACE SPREADER PIPES ONTO THE COLLARS AND PIN INTO PLACE. SECURE PINS WITH KEEPERS.
 3. LOWER SECOND PANEL ONTO SPREADERS AND PIN INTO PLACE. SECURE PINS WITH KEEPERS.
 4. STAND TRENCH SHIELD IN UPRIGHT POSITION AND PREPARE FOR INSTALLATION.

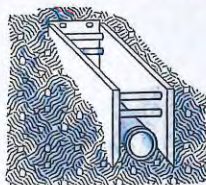
TRENCH SHIELD INSTALLED IN STABLE SOIL

- 
- 
- 
1. EXCAVATE TO GRADE JUST SLIGHTLY WIDER THAN THE TRENCH SHIELD. DIG WALLS VERTICAL TO MINIMUM OF 18" BELOW THE TOP OF THE SHIELD. SLOPE SOIL ABOVE SHIELD ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS. INSTALL SHIELD INTO TRENCH.
 2. EXCAVATE IN FRONT OF THE SHIELD
 3. PULL SHIELD FORWARD BY FRONT SPREADER PIPES OR WITH THE PULLING EYES.
- * PULLING EYES MAY BE USED WITH SPREADERS WIDER THAN 72" OR WHEN THE SOIL PRESSURE IS SEVERE ENOUGH TO CAUSE SPREADERS TO DEFLECT.**

TRENCH SHIELD INSTALLED IN UNSTABLE SOIL

- 
- 
- 
- 
1. EXCAVATE UNTIL SOIL BEGINS TO CRUMBLE BEYOND DESIRED TRENCH WIDTH. PLACE SHIELD IN LINE OF EXCAVATION.
 2. PRESS DOWN ON CORNERS TO PUSH SHIELD DOWN TO GRADE.
 3. PULL SHIELD FORWARD AND UP ON APPROPRIATE ANGLE. *(SEE ABOVE).
 4. EXCAVATE SOIL WITHIN THE SHIELD AND REPEAT PROCESS.

TRENCH SHIELD APPLICATIONS



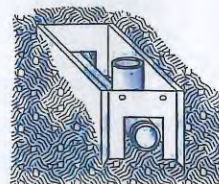
TIE-INS, REPAIR OR PATCH WORK

1. CENTER SHIELD OVER WORK AREA.
2. LAY SOIL BACK AT ENDS ACCORDING TO MANUFACTURER'S TABULATED DATA OR USE MANUFACTURER'S DESIGNED END PLATES TO PROTECT FROM CAVE-INS.



CORNER END PLATES

CORNER END PLATES HELP PREVENT MATERIAL FROM FLOWING INTO THE END OF SHIELD. SOIL AT ENDS SHOULD BE SLOPED ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS.



FOUR SIDED SHIELDS

WHEN USING SHIELDS AS PROTECTION WORK DURING MANHOLE ASSEMBLY WORK. INSURE THAT PROPER END PANELS ARE USED; OR LAY SOIL AT THE ENDS BACK ACCORDING TO MANUFACTURER'S TABULATED DATA & O.S.H.A. REGULATIONS.

1. ALWAYS USE TRENCH SHIELDS IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, FEDERAL SAFETY LAWS AND O.S.H.A. REGULATIONS. FAILURE TO DO SO COULD CAUSE SEVERE INJURY OR DEATH.
2. ALL WORK TO BE PERFORMED WITHIN THE CONFINES OF THE SHIELD.
3. THIS ABOVE MATERIAL IS INTENDED TO PROVIDE BASIC INFORMATION ONLY.

CERTIFICATION SHEET

Engineer's Statement : This certifies that the Kundel Trench Shield has been designed in accordance with the requirements and guidelines promulgated by the occupational safety and health administrations rules and regulations for construction standards for excavations (29) part 1926.650-.652 subpart P. Shoreline Life shoring systems are also designed in accordance with CSAO (Construction Safety Association of Ontario) Canada.

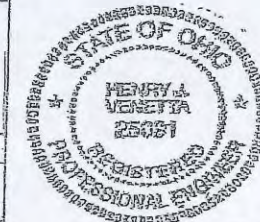
Michael J. Venetta, P.E.
Ohio Registration # E-45015

Henry Venetta, P.E.
Ohio Registration # E-25091

Manufacturer's Statement: Kundel Industries Inc. hereby certifies that all materials and processes involved in the manufacture of each and every Kundel Trench Shield strictly and stringently follow every material, production and design specification put forth by Venetta Engineering to ensure that each and every Kundel Trench Shield is in full accordance with the requirements and guidelines promulgated by the Occupational Safety and Health Administration.

Robert Kundel, President
Kundel Industries, Inc.

Manufacture's Tabulated Data			
Model : TP5-6X20-K			
Size : 6X20			
Serial # : 13357			
Pressure Ratings & Allowable Loads			
Soil	Standard Mode	Clear Mode	Super Mode
"A" Soil (ft)	31	N/A	N/A
"B" Soil (ft)	18	N/A	N/A
"C" soil (ft)	14	N/A	N/A
"Muck" (ft)	11	N/A	N/A
Pressure (psf)	840	N/A	N/A



Henry J. Venetta
7-26-00

Pressure Ratings and allowable loads are based on short term excavations and the following ; "A", "B", and "C" depth ratings are in feet and are in accordance with OSHA specification Appendix "A" which refers to The National Bureau of Standards Reports BSS-121. Soil classification "Muck" is also defined in The National Bureau of Standards Series BSS-121 on page 39 Notation #3. Pressure Ratings are in pounds per square foot and are equal to those found at the bottom of the trench.

****Please note that all tables and notes are for illustrative purposes only. The tables are based upon static load conditions and assumed soil pressures. Safe depths can vary from design assumptions. The tabulated data stated above is for use with both 4 or 5 pipe systems. Please refer to all manufacture's usage instructions.**

Kundel Industries
1510 Ridge Rd
Vienna, OH 44473
Phone (330) 259-9009



CHANDLER, ARIZONA
PHONE (800) 380-0103

SAFE-T-SHORE TRENCH
SHIELDS PAGE 1 OF 2

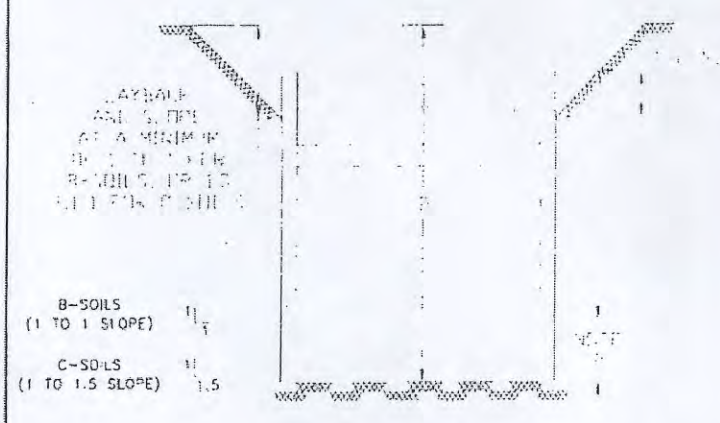
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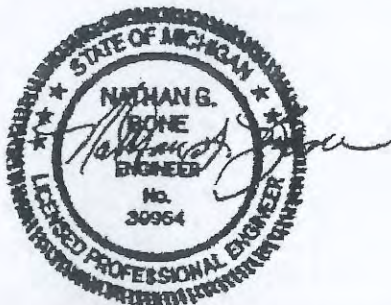
S6D10X24

SERIAL NUMBER

S24051

REFERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS, 29 CFR, NO 209, PART 1926, SUBPART P

SHIELD SIZE		PSF RATING	MAXIMUM ALLOWABLE DEPTH OF CUT (FEET) SOIL TYPE TO BE EXCAVATED		
HEIGHT (FEET)	LENGTH (FEET)	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
10	24	1200	27	24	20
LIMITATIONS IN USE OF TABLE 1. TRENCH SHIELD TO BE ASSEMBLED AND INSTALLED AS SHOWN AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 2. EXCAVATION 2 FEET BELOW BOTTOM OF SHIELD IS PERMITTED WHEN NO LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF 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. 3. CONSULT MANUFACTURER WHEN RESTRICTION ON NOTE 2 IS NOT MET. 4. ADDITIONAL SHIELDS MAY BE STACKED WITH NO PENALTY IN DEPTH OF CUT AS LONG AS THE RATING OF THE BOTTOM SHIELD IS NOT EXCEEDED. 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. CONTRACTOR'S COMPETENT/QUALIFIED PERSON SHALL BE RESPONSIBLE FOR MONITORING SOIL CONDITIONS AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS. 8. SPREADER PINS SHALL BE AISI C-1018 60-75 KSI MIN. YIELD AND NO MORE THAN 1/4" SMALLER THAN COLLAR AND SPREADER PIN HOLES AS MANUFACTURED BY EFFICIENCY PRODUCTION, INC. CONTINUED ON REVERSE SIDE			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
					



CERTIFIED BY:
EFFICIENCY PRODUCTION INC.

COPYRIGHT:
1991 EFFICIENCY PRODUCTION INC.
ALL RIGHTS RESERVED

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 CERTIFICATE COULD CAUSE IN CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN DEATH OR SERIOUS INJURY

SPEED SHORE®

PIONEERING TRENCH SAFETY

TABULATED DATA AND TRENCH SHIELD CERTIFICATION

SERIAL NUMBER: 11-2057		MODEL: TS-0810DW4KE-CH L	
HEIGHT = 8 feet	LENGTH = 10 feet	THICKNESS = 4 inches	
MAXIMUM LATERAL EARTH PRESSURE = 1,820 Pounds per square foot			

MAXIMUM DEPTH OF EXCAVATION		
O.S.H.A. Soil Type	Equivalent Weight Effect (p.c.f.)	Depth "H" (feet)
A	25	50
B	35	50
B	45	43
C	60	33
C	80	26
Spreader Size = 8 inch Schedule 80 Pipe / Maximum Spreader Length = 20 feet		

This shield is manufactured to meet the requirements of O.S.H.A. CFR 29, Part 1926, Subpart P. This shield must be used in a manner consistent with safe working procedures, Federal, State and local regulation and manufacturer's instructions. Contact manufacturer for any non-standard use of this trench shield.

GENERAL NOTES AND INSTRUCTIONS:

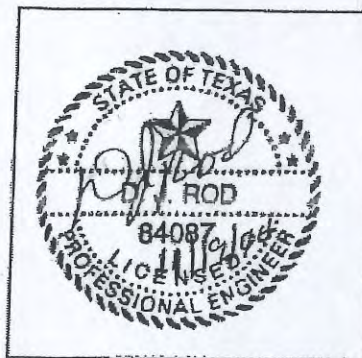
1. Contractors must assign a "*competent person*", knowledgeable and capable of complying with all federal regulations, state and local laws and ordinances. **NOTE:** For copies of applicable federal or state laws contact: Dept. of Labor, Occupational Safety and Health Division
2. A "*competent person*", trained and experienced in the proper use of trench shields, safe excavation practices and soil classification methods must direct and control the use of this trench shield.
3. This Tabulated Data applies to standard products manufactured exclusively by SPEED SHORE CORPORATION. This data complies with the requirements of federal O.S.H.A. CFR 29, Part 1926, Subpart P-Excavations. Information not found in this data shall be referenced by obtaining copies of the applicable Federal or State laws governing excavation
4. Modifications of this product shall be approved by the manufacturer in writing and shall accompany this Tabulated Data sheet. Any modification not specifically allowed by SPEED SHORE CORPORATION voids this data.

11.24.00

Page 1 of 1

SPEED SHORE CORPORATION

3330 S. Sam Houston Pkwy. East
Houston, Texas 77047
Phone (713) 943-0750 Fax (713) 943-8483



SPEED SHORE®

PIONEERING TRENCH SAFETY

TABULATED DATA AND TRENCH SHIELD CERTIFICATION

SERIAL NUMBER: 6-2228		MODEL: TS-0810DW4
HEIGHT = 8 feet	LENGTH = 10 feet	THICKNESS = 4 inches
MAXIMUM LATERAL EARTH PRESSURE = 1,820 Pounds per square foot		

MAXIMUM DEPTH OF EXCAVATION		
O.S.H.A. Soil Type	Equivalent Weight Effect (p.c.f.)	Depth "H" (feet)
A	25	50
B	35	50
B	45	43
C	60	33
C	80	26
Spreader Size = 8 inch Schedule 80 Pipe / Maximum Spreader Length = 20 feet		

This shield is manufactured to meet the requirements of O.S.H.A. CFR 29, Part 1926, Subpart P. This shield must be used in a manner consistent with safe working procedures, Federal, State and local regulation and manufacturer's instructions. Contact manufacturer for any non-standard use of this trench shield.

GENERAL NOTES AND INSTRUCTIONS:

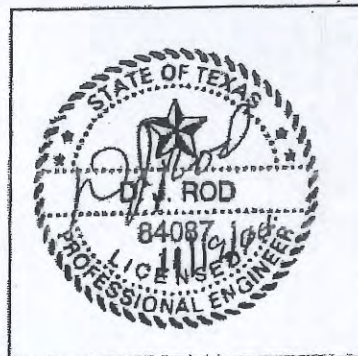
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2. A "*competent person*", trained and experienced in the proper use of trench shields, safe excavation practices and soil classification methods must direct and control the use of this trench shield.
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Houston, Texas 77047
Phone (713) 943-0750 Fax (713) 943-8483





PIONEERING TRENCH SAFETY

**TABULATED DATA AND
TRENCH SHIELD CERTIFICATION**

SERIAL NUMBER: 10-2080		MODEL: TS-0820DW6 KE-CEL	
HEIGHT = 8 feet	LENGTH = 20 feet	THICKNESS= 6 inches	
MAXIMUM LATERAL EARTH PRESSURE = 1,282 Pounds per square foot			

MAXIMUM DEPTH OF EXCAVATION		
O.S.H.A. Soil Type	Equivalent Weight Effect (p.c.f.)	Depth "H" (feet)
A	25	50
B	35	39
B	45	31
C	60	24
C	80	19
Spreader Size = 8 inch Schedule 80 Pipe / Maximum Spreader Length = 20 feet		

This shield is manufactured to meet the requirements of O.S.H.A. CFR 29, Part 1926, Subpart P. This shield must be used in a manner consistent with safe working procedures, Federal, State and local regulation and manufacturer's instructions. Contact manufacturer for any non-standard use of this trench shield.

GENERAL NOTES AND INSTRUCTIONS:

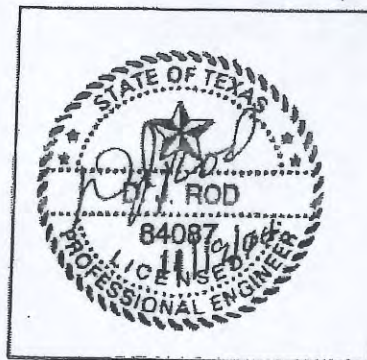
1. Contractors must assign a "*competent person*", knowledgeable and capable of complying with all federal regulations, state and local laws and ordinances. **NOTE:** For copies of applicable federal or state laws contact: Dept. of Labor, Occupational Safety and Health Division
2. A "*competent person*", trained and experienced in the proper use of trench shields, safe excavation practices and soil classification methods must direct and control the use of this trench shield.
3. This Tabulated Data applies to standard products manufactured exclusively by SPEED SHORE CORPORATION. This data complies with the requirements of federal O.S.H.A. CFR 29, Part 1926, Subpart P-Excavations. Information not found in this data shall be referenced by obtaining copies of the applicable Federal or State laws governing excavation
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SPEED SHORE®

PIONEERING TRENCH SAFETY

TABULATED DATA AND TRENCH SHIELD CERTIFICATION

SERIAL NUMBER: 3-2486		MODEL: TS-08 16 DW 6
HEIGHT = 08 feet	LENGTH = 16 feet	THICKNESS = 6 inches
MAXIMUM LATERAL EARTH PRESSURE = 2,047 Pounds per square foot		

MAXIMUM DEPTH OF EXCAVATION		
O.S.H.A. Soil Type	Equivalent Weight Effect (p.c.f.)	Depth "H" (feet)
A	25	50
B	35	50
B	45	48
C	60	37
C	80	29
Spreader Size = 8 inch Schedule 80 Pipe / Maximum Spreader Length = 20 feet		

This shield is manufactured to meet the requirements of O.S.H.A. CFR 29, Part 1926, Subpart P. This shield must be used in a manner consistent with safe working procedures, Federal, State and local regulation and manufacturer's instructions. Contact manufacturer for any non-standard use of this trench shield.

GENERAL NOTES AND INSTRUCTIONS:

1. Contractors must assign a "**competent person**", knowledgeable and capable of complying with all federal regulations, state and local laws and ordinances. **NOTE:** For copies of applicable federal or state laws contact: Dept. of Labor, Occupational Safety and Health Division
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