

EFFICIENCY PRODUCTION

 AMERICA'S TRENCH BOX BUILDER™

Steel Trench Shield Product Application Guide

MUNICIPAL SHIELDS ■ CONTRACTOR SERIES ■ MANHOLE SHIELDS ■ SPREADERS & ARCHES

↑
22"
↓
PIPE CLEARANCE
64"
↓



↑
16'
20'
24'
33'
DEPTH OF CUT
39'
44'
48'
60'
↓

← 720 ————— SHIELD CAPACITY (PSF) ————— 2,700 →

EFFICIENCY PRODUCTION
Steel Trench Shield Product Guide


EFFICIENCY
PRODUCTION
America's Trench Box Builder™
800-552-8800



www.encyproduction.com

How to Size a Trench Shield

Soil Classifications, Calculating Depth Ratings, and Sizing a Shield

For Your Project:

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CONTRACTOR SERIES SHIELDS

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SPREADERS & ARCHES

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Efficiency Production's Mission Statement

Efficiency Production's Mission is to be the Underground Construction Industry's Shoring Manufacturer of Choice, providing shoring equipment and services that consistently exceed customer expectations and build long term working relationships.

How to Size a Trench Box

Soil Condition* (Lateral pressure per foot of depth):

- Type B Soil = 45 lbs.
- Type C-60 Soil = 60 lbs.
- Type C-80 Soil = 80 lbs.

Depth of Cut* _____

**Refer to depth certification chart*

Pipe O.D. _____

Pipe Length _____

Bucket Width _____

Machine Size _____

Depth of Cut

- Depth of Cut starts top of grade to bottom of excavation
- If sloping is used with trench shields, slope must start 18 in. below top of the shield

Machine Lift Capacity

- Lift capacity should be 1.5 times the shield weight at 20 ft. radius at grade
- Alternatively, a machine may handle approx. 20 percent of it's weight

Calculating Depth Rating

- Ratings are based upon temporary loading conditions
- Surcharge loads of 72 psf are included in the tabulated data

Depth rating using Shield Capacity (PSF), e.g. 1,200 lbs.

- Type B Soil: $1,200 / 45 = 27$ ft.
- Type C-60 Soil: $1,200 / 60 = 20$ ft.
- Type C-80 Soil: $1,200 / 80 = 15$ ft.

Width & Length of Shield

Contact your local dealer or factory representative to discuss specific shoring requirements.

No soil is Type "A" if:

- It is fissured
- It is subject to vibration
- It has been previously disturbed
- It is part of a sloped, layered system which dips into the excavation on a slope of four horizontal to one vertical [4H:1V] or greater
- It is subject to other factors requiring classification as less stable

Type "B" Soil:

- Cohesive soil with unconfined compressive strength greater than 0.5 tons per square foot (tsf). but less than 1.5 tsf.
- Granular cohesion-less soils, e.g., gravel, silt, silt loam, sandy loam
- Type "A" fissured or subject to vibration
- Unstable dry rock
- It is part of a sloped, layered system which dips into the excavation on a slope less steep than 4H:1V, but only if the material would otherwise be classified as Type "B"

Type "C" Soil:

- Cohesive/non-cohesive soils with unconfined compressive strength of 0.5 tsf or less
- Granular soils including gravel, sand, and loamy sand
- Submerged soil or soil from which water is freely seeping
- Submerged rock that is not stable
- Sloped, layered system which slopes into an excavation at an angle of 4H:1V, or steeper

Standard Features

Innovative Features that Increase Job Productivity & Durability



High Strength Mill Certified Steel

All structural steel is fully tested and certified to be high strength, providing maximum depth to weight ratios.



Depth Rating Certification Tag

Every trench shield includes a certification tag which is permanently affixed to the trench box sidewall. The certification tag includes the corresponding serial number for the trench shield and lists the shield's tabulated data including depth ratings.



End Posts w/ Integrated Collars

Collar pipes extend through the end tubes and are welded to the inside and outside walls and around the perimeter of the tube, offering maximum strength and rigidity.



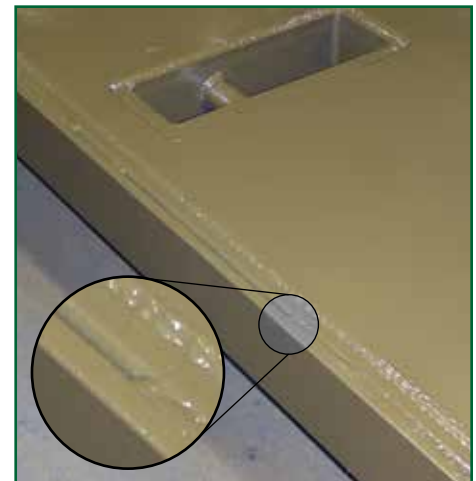
Four-Point Lift System

The four-point lift system is used for lifting shield sidewalls during assembly of the box, as well as the entire assembled shield. Lifting lugs are positioned for balanced lifting and easy handling.



Thru-Wall Lifting Lugs

Lifting lugs facilitate assembly, disassembly, and handling. The thru-wall design enables chains or cables to be connected from inside, or outside of the shield.



Reinforced Top Rails

1/2 in. steel bar stock covers the full width of sidewall tops. This feature is standard on all models.

A metric version of this catalog is available on our website, www.encyproduction.com

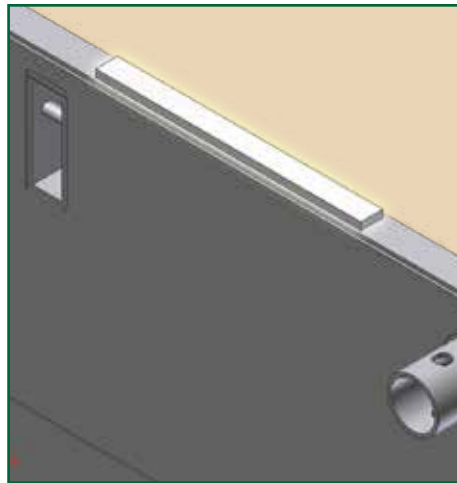
Options & Accessories

Versatile Options & Accessories for Steel Trench Shields



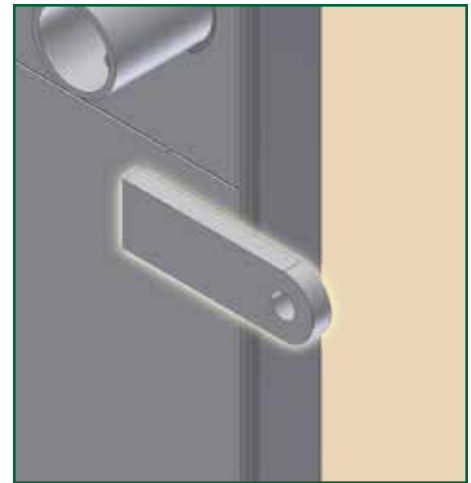
Foam Filler

Foam Filler is made of lightweight polystyrene that fills double wall cavities minimizing mud and sand build-up inside of the walls.



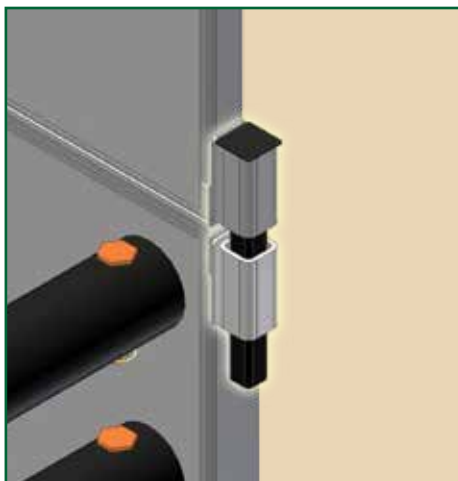
Pushing Blocks

A set of four pushing blocks, each made of 1 in. thick steel, are used for pushing the shield to grade. *Pushing Blocks are NOT intended for pounding with excavator bucket.*



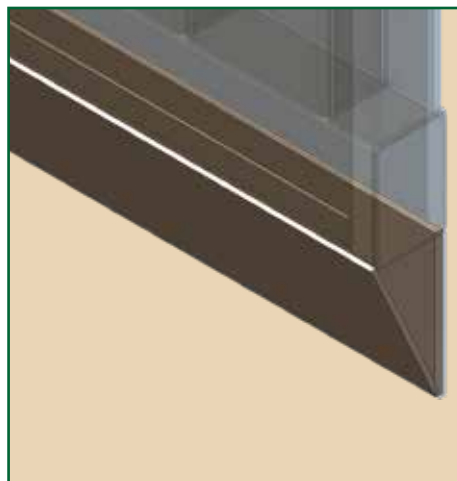
Pulling Lugs

A set of two pulling lugs are welded to the front end of the sidewalls to pull the shield easily along the trench as the job progresses.



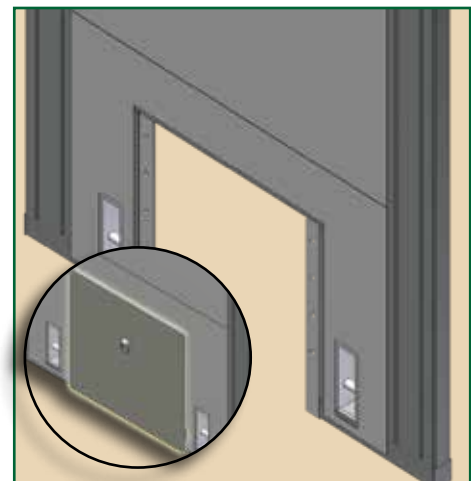
Stacking Pockets

Stacked shields can be connected using pins placed through welded stacking pockets. Pockets allow for shields of varying sidewall widths to be stacked.



Knife Edge

Bottom of sidewalls have reinforced edges that are gusseted for strength and beveled to a knife-like edge that helps prevent water infiltration. Shields are also available with flat bottoms.

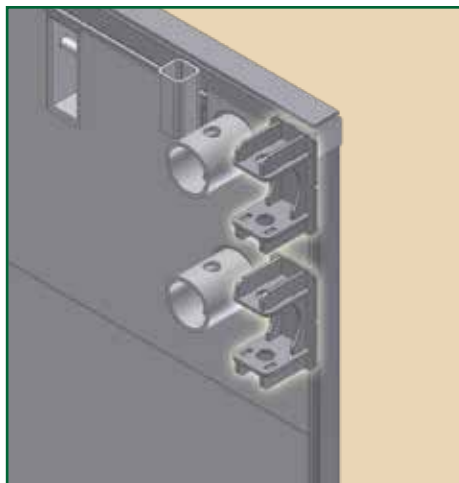


Sidewall Cutout & Door

Sidewall cutouts provide maximum protection against a cave-in when connecting lateral pipe or other utility. Optional doors allow the trench shield to function normally when lateral pipe or cross-trench utilities are not present.

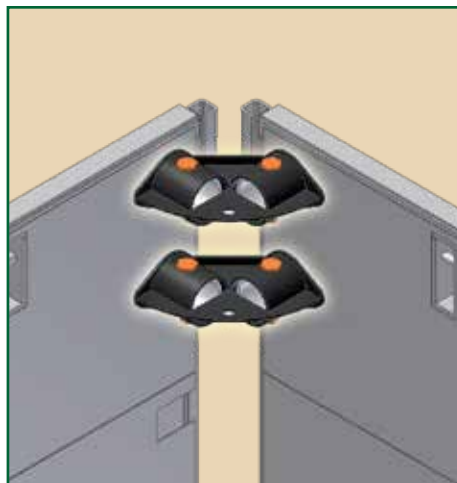
Options & Accessories

Versatile Options & Accessories for Steel Trench Shields



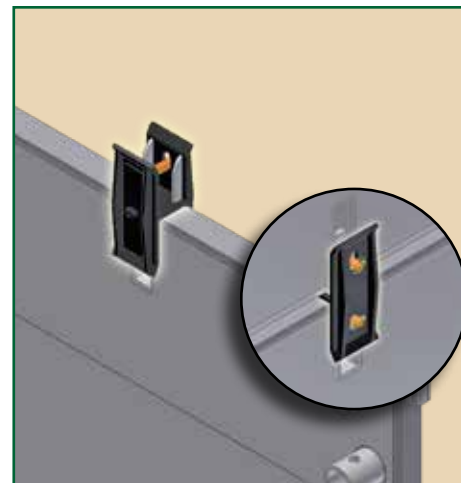
EC Brackets (Option)

End Panel Connector (EC) brackets are a quick and easy way to add three or four-sided protection to any trench shield. EC brackets secure to the adjoining sidewall's spreader collars.



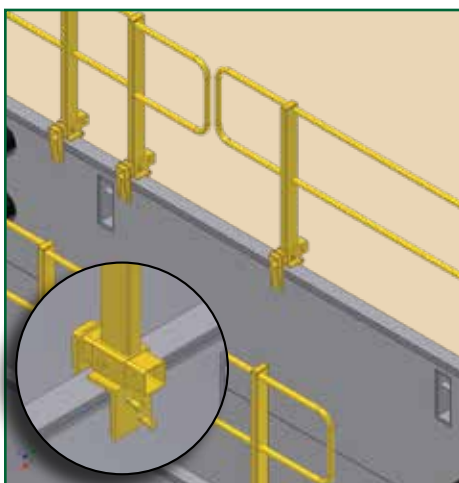
Corner Brackets

A set of four corner brackets (patent pending) allow for the construction of four-sided shields using standard trench shield sidewalls.



Stack Brackets

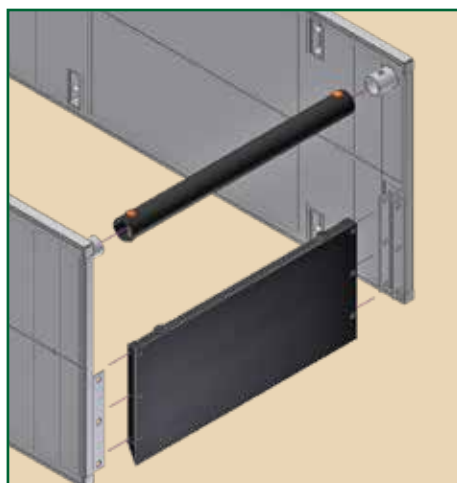
Stack brackets are perfect for securing stacked four-sided shields or other configurations where stacking pockets or Fast Stack™ can not be utilized. The brackets are secured on the trench box sidewall's lifting lugs.



Guard Rail

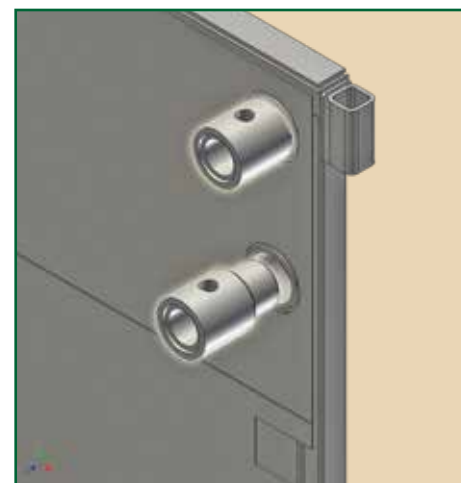
Efficiency's new guard rail is an easy, OSHA compliant fall protection device. Guard rails come in 4, 6, and 10 foot lengths, and fit 3-8 in. trench shield sidewalls.

**Fall Protection Manual available at www.encyproduction.com*



Mud Plate (Option)

Efficiency's innovative 3-pipe spreader system with mud plate offers excellent protection against water, mud, and sand encroachment into the trench.



Collar Replacement Kit (Option)

XLSM3



3 in. "Xtra Light" Single Wall Municipal Trench Shield

Purpose:

The XLSM3 has narrow, 3 in. single sidewall. These lightweight shields are designed for use with rubber-tire backhoes or mini-excavators and are excellent for shallow, lighter work. They also allow for the narrowest possible excavated trench.

Common Applications:

- Sewer & Water Valves
- Hydrants & Taps
- Spot Repairs

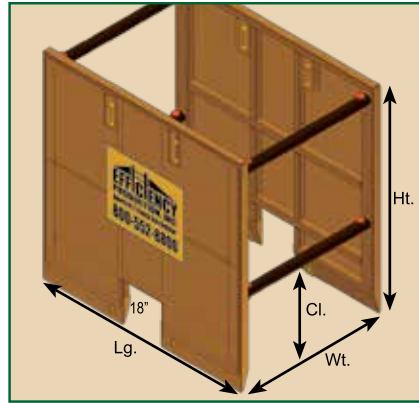
Collar & Spreader Options:

- 3¾ in. collar pipe for 4" schedule 40 spreaders (standard)
- 5 in. collar pipe for 6" schedule 80
- Custom collar sizes available

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Shield Options - Page 4

Accessories - Page 5



Trench Shield Nomenclature

XLSM3-610 (*Model-Ht.Lg.*) =
Xtra-Light Single wall
Municipal shield with 3 in. sidewalls
6 ft. high, 10 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.

XLSM3 3 in. Steel Single Wall Municipal Trench Shield

Model (Ft.) <i>XLSM3-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
XLSM3-46	1,000	22	1,380	66	31	23	17
XLSM3-48	1,200	22	780	40	17	13	10
XLSM3-410	1,450	22	600	28	13	10	7
XLSM3-412	1,650	22	480	23	11	8	6
XLSM3-414	1,850	22	420	20	9	7	5
XLSM3-416	2,100	22	360	17	8	6	4
XLSM3-66	1,340	36	1,200	57	27	20	15
XLSM3-68	1,650	36	960	46	21	16	12
XLSM3-610	2,030	36	780	37	17	13	10
XLSM3-612	2,310	36	540	26	12	9	7
XLSM3-614	2,740	36	420	20	9	7	5
XLSM3-616	3,140	36	360	17	8	6	4
XLSM3-86	1,620	36	1,200	57	27	20	15
XLSM3-88	2,000	36	960	46	21	16	12
XLSM3-810	2,460	36	600	29	13	10	7
XLSM3-812	2,800	36	480	23	11	8	6
XLSM3-814	3,510	36	420	20	9	7	5
XLSM3-816	4,080	36	360	17	8	6	4

XLDM3



3 in. "Xtra Light" Double Wall Municipal Trench Shield

Purpose:

The XLDM3 has 3 in. double sidewalls and allow for the narrowest possible excavated trench. These lightweight shields are designed for use with rubber-tire backhoes or mini-excavators and are excellent for standard municipal repairs and infrastructure work.

Common Applications:

- Sewer & Water Valves
- Hydrants & Taps
- Spot Repairs

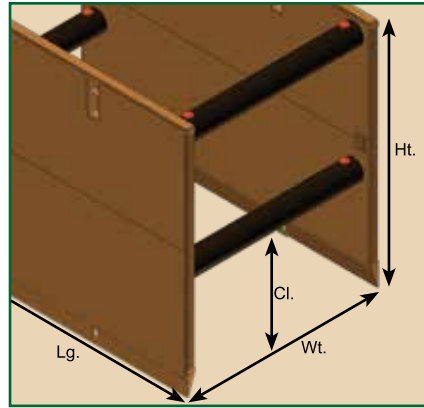
Collar & Spreader Options:

- 3¾ in. collar pipe for 4" schedule 40 spreaders (standard)
- 5 in. collar pipe for 6" schedule 80
- Custom collar sizes available

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Shield Options - Page 4

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Trench Shield Nomenclature

XLDM3-610 (*Model-Ht.Lg.*) =
Xtra-Light Double wall
Municipal shield with 3 in. sidewalls
6 ft. high, 10 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.

XLDM3 3 in. Steel Double Wall Municipal Trench Shield

Model (Ft.) <i>XLDM3-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
XLDM3-46	1,340	22	1,680	80	37	28	21
XLDM3-48	1,560	22	1,500	72	33	25	19
XLDM3-410	1,870	22	1,380	66	31	23	17
XLDM3-412	2,110	22	960	46	21	16	12
XLDM3-414	2,350	22	780	37	17	13	10
XLDM3-416	2,660	22	600	29	13	10	7
XLDM3-66	1,910	36	2,040	98	45	34	26
XLDM3-68	2,160	36	1,920	92	43	32	24
XLDM3-610	2,580	36	1,440	69	32	24	18
XLDM3-612	2,960	36	1,080	52	24	18	13
XLDM3-614	3,360	36	780	37	17	13	10
XLDM3-616	3,800	36	600	29	13	10	7
XLDM3-86	2,400	36	2,040	98	45	34	26
XLDM3-88	2,720	36	1,920	92	43	32	24
XLDM3-810	3,270	36	1,080	69	24	18	14
XLDM3-812	3,730	36	900	43	20	15	11
XLDM3-814	4,280	36	900	43	20	15	11
XLDM3-816	4,850	36	780	37	17	13	10

XLSM



4 in. "Xtra Light" Steel Single Wall Municipal Trench Shield

Purpose:

The XLSM are lightweight 4 in. single sidewall steel trench shields that are economical and ideal for work encountered by municipalities and utilities.

Common Applications:

- Sewer & Water Valves
- Hydrants & Taps
- Spot Repairs
- Gas and Electric Utility

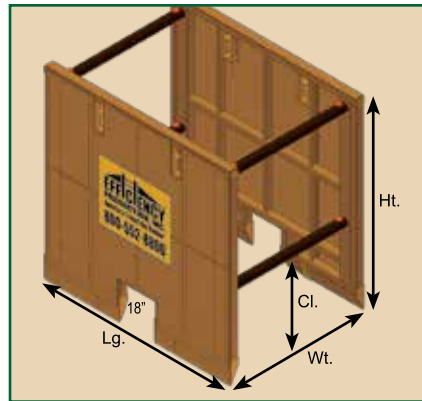
Collar & Spreader Options:

- 3¾ in. collar pipe for 4" schedule 40 spreaders (standard)
- 5 in. collar pipe for 6" schedule 80
- Custom collar sizes available

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Shield Options - Page 4

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Trench Shield Nomenclature

XLSM-610 (Model-Ht.Lg.) =
Xtra-Light Single wall
Municipal shield (with 4 in. sidewalls)
6 ft. high, 10 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.

XLSM 4 in. Steel Single Wall Municipal Trench Shield							
Model (Ft.) <i>XLSM-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
XLSM-46	1,020	22	1,800	86	40	30	22
XLSM-48	1,220	22	1,380	66	31	23	17
XLSM-410	1,490	22	900	43	20	15	11
XLSM-412	1,700	22	660	32	15	11	8
XLSM-414	1,925	22	480	23	11	8	6
XLSM-416	2,325	22	360	17	8	6	4
XLSM-66	1,390	36	1,320	63	29	22	16
XLSM-68	1,710	36	1,020	49	23	17	13
XLSM-610	2,080	36	840	40	19	14	10
XLSM-612	2,410	36	660	32	15	11	8
XLSM-614	2,800	36	480	23	11	8	6
XLSM-616	3,460	36	360	17	8	6	4
XLSM-86	1,670	36	1,320	63	29	22	16
XLSM-88	2,020	36	960	46	21	16	12
XLSM-810	2,490	36	720	36	16	12	9
XLSM-812	2,900	36	720	36	16	12	9
XLSM-814	3,600	36	540	26	12	9	7
XLSM-816	4,200	36	360	17	8	6	4

4 in. “Xtra Light” Double Wall Municipal Trench Shield

Purpose:

XLDM are lightweight 4 in. double sidewall steel trench shields that can be handled by backhoes and loaders. These shields are perfect for municipal infrastructure work ranging from sewer taps to water main repair.

Common Applications:

- Sewer & Water Valves
- Hydrants & Taps
- Spot Repairs
- Gas and Electric Utility

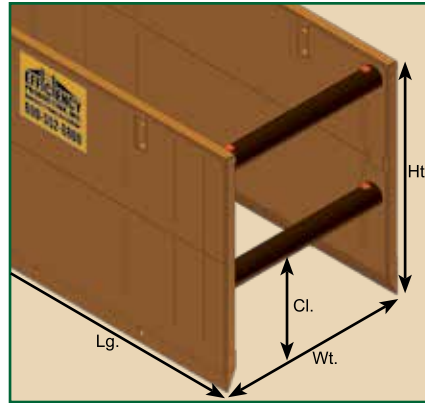
Collar & Spreader Options:

- 3¾ in. collar pipe for 4” schedule 40 spreaders (standard)
- 5 in. collar pipe for 6” schedule 80
- Custom collar sizes available

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Shield Options - Page 4

Accessories - Page 5



Trench Shield Nomenclature

XLDM-610 (*Model-Ht.Lg.*) =
Xtra-Light Double wall
Municipal shield (with 4 in. sidewalls)
6 ft. high, 10 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.

XLDM 4 in. Steel Double Wall Municipal Trench Shield							
Model (Ft.) <i>XLDM-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
XLDM-46	1,510	22	2,400	115	53	40	30
XLDM-48	1,810	22	2,400	115	53	40	30
XLDM-410	2,070	22	1,920	92	43	32	24
XLDM-412	2,350	22	1,680	81	37	28	21
XLDM-414	2,630	22	960	46	21	16	12
XLDM-416	2,960	22	840	40	19	14	10
XLDM-66	1,950	36	2,400	115	53	40	30
XLDM-68	2,250	36	2,400	115	53	40	30
XLDM-610	2,730	36	2,400	115	53	40	30
XLDM-612	3,120	36	1,800	86	40	30	22
XLDM-614	3,510	36	1,320	63	29	22	16
XLDM-616	3,980	36	960	46	21	16	12
XLDM-86	2,450	36	2,400	115	53	40	30
XLDM-88	3,251	36	2,400	115	53	40	30
XLDM-810	3,957	36	2,400	115	53	40	30
XLDM-812	4,547	36	1,680	81	37	28	21
XLDM-814	5,415	36	1,680	81	37	28	21
XLDM-816	6,082	36	1,380	81	31	23	17

4 in. “Xtra Light” Steel Single Wall Trench Shield

Purpose:

XLS 4 in. single wall steel trench shields are designed for use with medium crawler excavators in trenches where weight and space are critical.

Common Applications:

- Sanitary Sewer & Water Valves
- Water Main
- Storm Sewer

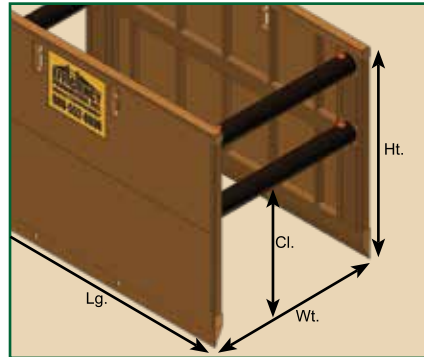
Collar & Spreader Options:

- 3¾ in. collar pipe for 4” schedule 40 spreaders (standard)
- 5 in. collar pipe for 6” schedule 80
- 4-pipe independent
- 5-pipe independent
- Custom collar sizes available

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Trench Shield Nomenclature

XLS-620 (Model-Ht.Lg.) =
Xtra-Light Single wall
trench shield (with 4 in. sidewalls)
6 ft. high, 20 ft. long

XLS 4 in. Steel Single Wall Trench Shield							
Model (Ft.) <i>XLS-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
XLS-48	1,800	22	2,220	107	49	37	28
XLS-410	2,140	22	1,500	72	33	25	19
XLS-412	2,460	22	1,020	49	23	17	13
XLS-416	3,060	22	660	32	15	11	8
XLS-420	3,560	22	480	23	11	8	6
XLS-68	2,460	41	2,220	107	49	37	28
XLS-610	2,900	41	1,320	63	29	22	16
XLS-612	3,470	41	1,080	52	24	18	13
XLS-616	4,530	41	660	32	15	11	8
XLS-620	5,370	41	480	23	11	8	6
XLS-88	2,930	64	1,500	72	33	25	19
XLS-810	3,520	64	1,140	55	25	19	14
XLS-812	4,140	64	840	40	19	14	10
XLS-816	5,290	64	660	32	15	11	8
XLS-820	6,340	64	480	23	11	8	6

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.

XLD

4 in. "Xtra Light" Steel Double Wall Trench Shield

Purpose:

The XLD 4 in. double wall steel shield is the most popular shield in the Efficiency line. The versatility of this shield is evident in its depth to size ratio, making it perfect for all types of utility and infrastructure work.

Common Applications:

- Sanitary Sewer & Water Valves
- Water Main
- Storm Sewer
- Gas and Electric Utility

Collar & Spreader Options:

- 7 in. collar pipe for 8" schedule 80 spreaders (standard)
- 3-pipe and mud plate
- 4-pipe independent
- 4-pipe connected
- 5-pipe independent
- 5-pipe connected
- Custom collar sizes available

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Shield Options - Page 4

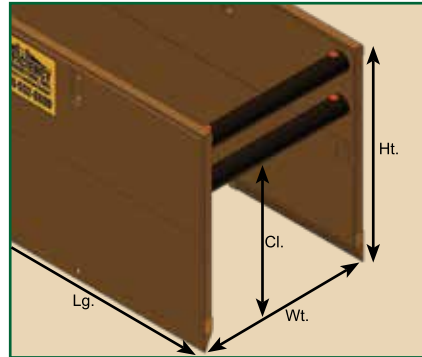
Accessories - Page 5

Trench Shield Nomenclature

XLD-620 (Model-Ht.Lg.) =
 Xtra-Light Double wall
 trench shield (with 4 in. sidewalls)
 6 ft. high, 20 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.



XLD 4 in. Steel Double Wall Trench Shield

Model (Ft.) <i>XLD-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
XLD-410	2,850	22	2,760	132	61	46	34
XLD-412	3,380	22	2,760	132	61	46	34
XLD-416	4,130	22	1,500	72	33	25	19
XLD-420	4,970	22	1,200	58	27	20	15
XLD-424	6,130	22	840	40	19	14	11
XLD-610	4,120	41	2,760	132	61	46	35
XLD-612	4,790	41	2,460	118	55	41	31
XLD-616	5,970	41	1,440	69	32	24	18
XLD-620	7,220	41	1,380	63	31	23	17
XLD-624	8,680	41	900	43	20	15	11
XLD-810	5,090	64	2,640	127	59	44	33
XLD-812	5,800	64	2,040	98	45	34	26
XLD-816	7,270	64	1,560	75	35	26	20
XLD-820	8,920	64	1,320	63	29	22	17
XLD-824	11,420	64	900	40	20	15	11
XLD-1010	6,020	84	2,640	127	59	44	33
XLD-1012	7,000	84	1,980	95	44	33	25
XLD-1016	9,040	84	1,320	63	29	22	17
XLD-1020	10,890	84	960	46	21	16	12
XLD-1024	12,910	84	900	43	20	15	11

HT6

6 in. "High Tensile" Steel Double Wall Trench Shield

Purpose:

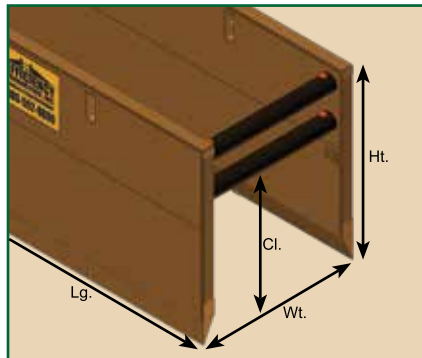
The HT6 is the most versatile steel trench shield available. It combines depth capability with narrow sidewalls, and is designed for medium range excavators.

Common Applications:

- Deep Sanitary Sewer
- Water Main
- Storm Sewer

Collar & Spreader Options:

- 7 in. collar pipe for 8" schedule 80 spreaders (standard)
- 3-pipe and mud plate
- 4-pipe independent
- 4-pipe connected
- 5-pipe independent
- 5-pipe connected
- Custom collar sizes available



Features - Page 3

Shield Options - Page 4

Accessories - Page 5

Trench Shield Nomenclature

HT6-620 (Model-Ht.Lg.) =
High Tensile trench shield
with 6 in. sidewalls;
6 ft. high, 20 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.

HT6 6 in. Steel Double Wall Trench Shield

Model (Ft.) <i>HT6-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
HT6-416	5,310	22	1,860	89	41	31	23
HT6-418	5,890	22	1,680	81	37	28	21
HT6-420	6,370	22	1,440	69	32	24	18
HT6-424	7,510	22	1,140	55	25	19	14
HT6-428	8,750	22	660	32	15	11	8
HT6-616	10,210	41	2,340	112	52	39	29
HT6-618	7,680	41	1,680	81	37	28	21
HT6-620	8,330	41	1,440	69	32	24	18
HT6-624	10,210	41	1,140	55	25	19	14
HT6-628	11,680	41	780	37	17	13	10
HT6-816	8,440	64	1,980	95	44	33	25
HT6-818	9,350	64	1,860	89	41	31	23
HT6-820	10,410	64	1,560	75	35	26	20
HT6-824	12,290	64	1,140	55	25	19	14
HT6-828	13,700	64	720	35	16	12	9
HT6-1016	10,380	84	1,680	81	37	28	21
HT6-1018	11,560	84	1,560	75	35	26	20
HT6-1020	12,900	84	1,440	69	32	24	18
HT6-1024	15,890	84	1,200	58	27	20	15
HT6-1028	18,460	84	720	35	16	12	9

HT8

8 in. “High Tensile” Steel Double Wall Trench Shield

Purpose:

The HT8 is an excellent choice for deeper, more demanding work. The 8 in. double wall construction minimizes sidewall deflection and provides extended shield durability.

Common Applications:

- Deep Sanitary Sewer
- Water Main
- Storm Sewer
- Long Pipe

Collar & Spreader Options:

- 7 in. collar pipe for 8” schedule 80 spreaders (standard)
- 3-pipe and mud plate
- 4-pipe independent
- 4-pipe connected
- 5-pipe independent
- 5-pipe connected
- Custom collar sizes available

Features - Page 3

Shield Options - Page 4

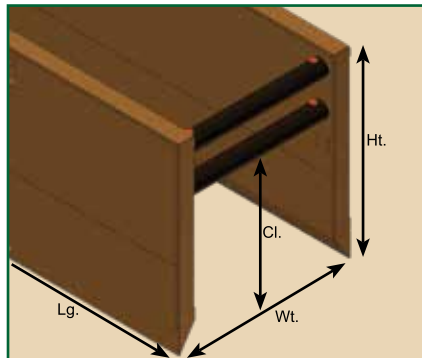
Accessories - Page 5

Trench Shield Nomenclature

HT8-620 (Model-Ht.Lg.) =
High Tensile trench shield
with 8 in. sidewalls;
6 ft. high, 20 ft. long

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.



HT8 8 in. Steel Double Wall Trench Shield							
Model (Ft.) <i>HT8-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
HT8-416	6,150	22	2,580	124	57	43	32
HT8-420	7,120	22	1,800	86	40	30	22
HT8-424	8,360	22	1,260	60	28	21	16
HT8-430	10,080	22	840	40	19	14	11
HT8-432	10,750	22	720	35	16	12	9
HT8-616	7,930	41	2,640	127	59	44	33
HT8-620	9,210	41	1,800	86	40	30	22
HT8-624	11,080	41	1,260	60	28	21	16
HT8-630	13,560	41	1,020	49	23	17	13
HT8-632	14,400	41	780	40	17	13	10
HT8-816	9,150	64	2,580	124	57	43	32
HT8-820	10,960	64	2,100	100	46	35	26
HT8-824	13,420	64	1,500	72	33	25	19
HT8-830	15,930	64	840	40	19	14	11
HT8-832	16,950	64	720	35	16	12	9
HT8-1016	12,480	84	2,220	107	49	37	28
HT8-1020	14,740	84	1,920	92	43	32	24
HT8-1024	16,270	84	1,680	81	37	28	21
HT8-1030	20,570	84	1,020	49	23	17	13
HT8-1032	22,000	84	720	35	16	12	9

Heavy Duty Boxes

6 or 8 in. Heavy Duty Steel Double Wall Shield

Purpose:

Heavy Duty models are available for Efficiency's 6 and 8 in. double wall shields. HD boxes offer better depth rating for specific trench shield sizes.

Common Applications:

- Deep Sanitary & Storm Sewer
- Water Main
- Large Diameter Pipe
- Culverts
- Long Pipe

Collar & Spreader Options:

HDHT6

- 7 in. collar pipe for 8" schedule 80 spreaders (standard)

HDHT8

- 7 in. collar pipe for 8" schedule 80 spreaders (standard)

HDHT6 & HDHT8

- 3-pipe and mud plate
- 4-pipe independent
- 4-pipe connected
- 5-pipe independent
- 5-pipe connected
- Custom collar sizes available

Trench Shield Nomenclature

HDHT6-824-30 (Model-Ht.Lg.-C60) =

Heavy Duty High Tensile shield
with 6 in. sidewalls;
8 ft. high, 24 ft. long, with
Depth Rating of 30 ft. in C-60 Soil

HDHT8-824-30 (Model-Ht.Lg.) =

Heavy Duty High Tensile shield
with 8 in. sidewalls;
8 ft. high, 24 ft. long, with
Depth Rating of 30 ft. in C-60 Soil

HDHT6 6 in. Heavy Duty Steel Double Wall Trench Shield

Model (Ft.) HDHT6-Ht.Lg.	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
HDHT6-816-35	8,920	64	2,100	99	47	35	26
HDHT6-816-45	9,660	64	2,700	127	60	45	34
HDHT6-820-30	10,830	64	1,800	85	40	30	23
HDHT6-820-40	12,980	64	2,400	113	53	40	30
HDHT6-824-20	12,500	64	1,200	56	27	20	15
HDHT6-824-30	15,400	64	1,800	85	40	30	23
HDHT6-828-15	14,960	64	900	42	20	15	11
HDHT6-830-30	16,685	64	1,800	42	40	30	23
HDHT6-1016-30	10,800	84	1,800	85	40	30	23
HDHT6-1016-45	15,600	84	2,700	127	60	45	34
HDHT6-1020-25	13,350	84	1,500	71	33	25	19
HDHT6-1020-35	16,030	84	2,100	99	47	35	26
HDHT6-1024-25	17,490	84	1,500	71	33	25	19
HDHT6-1024-30	19,910	84	1,800	85	40	30	23
HDHT6-1028-15	20,700	84	900	42	20	15	11
HDHT6-1030-15	23,100	84	900	42	20	15	11

HDHT8 8 in. Heavy Duty Steel Double Wall Trench Shield

Model (Ft.) HDHT8-Ht.Lg.	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
HDHT8-816-45	9,790	64	2,700	127	60	45	34
HDHT8-816-50	10,950	64	3,000	141	67	50	38
HDHT8-820-40	12,300	64	2,400	113	53	40	30
HDHT8-820-45	14,200	64	2,700	127	60	45	34
HDHT8-824-30	14,500	64	1,800	85	40	30	23
HDHT8-824-40	18,400	64	2,400	113	53	40	30
HDHT8-828-20	16,100	64	1,200	56	27	20	15
HDHT8-828-30	24,980	64	1,800	85	40	30	23
HDHT8-830-15	16,230	64	900	42	20	15	11
HDHT8-830-25	22,400	64	1,500	71	33	25	19
HDHT8-1016-40	12,750	84	1,501	71	33	25	19
HDHT8-1016-60	13,790	84	3,600	169	80	60	45
HDHT8-1020-35	15,710	84	2,100	99	47	35	26
HDHT8-1020-45	18,200	84	2,700	127	60	45	34
HDHT8-1024-30	17,490	84	1,800	85	40	30	23
HDHT8-1024-40	23,250	84	2,400	113	53	40	30
HDHT8-1028-20	20,920	84	1,200	56	27	20	15
HDHT8-1028-30	17,650	84	1,800	85	40	30	23
HDHT8-1030-20	23,400	84	1,200	56	27	20	15
HDHT8-1030-25	26,400	84	1,500	71	33	25	19



HDHT6



HDHT8

Inner Shield Liner

4 In. Steel Double Wall Telescoping Trench Shield

Purpose:

Efficiency's Inner Shield Liner is engineered for use in wet or unstable soil conditions where trench walls cave in underneath the bottom of the trench shield. The ISL fits inside the primary shield and replaces steel plates or sheeting as a faster and safer method to block the trench walls from caving in.

Common Applications:

- Deep Pipe
- Alternative to stacked shields
- Extremely wet or saturated soil conditions

Collar & Spreader Options:

- 7 in. collar pipe for 8" schedule 80 spreaders (standard)
- 3-pipe and mud plate set (standard)
- 4-pipe independent set
- Custom collar sizes available

Features - Page 3

Shield Options - Page 4

Accessories - Page 5

Trench Shield Nomenclature

SL-620-20 (Model-Ht.Lg.-C60) =
(Inner) Shield Liner trench shield;
6 ft. high, 20 ft. long; with
Depth Rating of 20 ft. in C-60 Soil

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity (PSF) by soil type rating, i.e. 1,200 PSF / C-60 = 20 Ft.



Inner Shield Liner 4 in. Steel Double Wall Shield

Model (Ft.) (SL-Ht.Lg.-C60)	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.)		Recom. Length Outer Shield
			(PSF)	(kPa)	C-60	C-80	
SL-614-20	5,040	41	1,200	56	20	15	18 - 20 ft.
SL-614-25	5,380	41	1,500	71	25	19	18 - 20 ft.
SL-616-20	5,970	41	1,200	56	20	15	20 - 22 ft.
SL-616-25	6,480	41	1,500	71	25	19	20 - 22 ft.
SL-618-20	6,690	41	1,200	56	20	15	22 - 24 ft.
SL-618-25	7,570	41	1,500	71	25	19	22 - 24 ft.
SL-620-20	7,220	41	1,200	56	20	15	24 - 26 ft.
SL-620-25	8,190	41	1,500	71	25	19	24 - 26 ft.

Telescoping Boxes

Often a standard series trench shield, such as an HT6, can be used in combination with a larger shield. This telescoping technique allows a contractor to reach greater depth without needing to maneuver stacked trench shields, which often requires the use of a larger excavator.



Manhole Shields

4 in. Single and Double Wall Manhole Shields

Purpose:

Efficiency's 4 in. double sidewall Manhole Shields come with two specifically designed spreader sets. Spreader on the MHXLD-CEP attach to the shield's sidewalls utilizing standard sized spreaders. Spreader on the MHXLDW attached to the wrap-around end walls allowing for maximum inside clearance.

Common Applications:

- Pre-cast Manholes
- Sewer & Water Valves
- Gas and Electric Utility Structures

Collar & Spreader Options:

MHXLD-CEP

- 7 in. collar pipe for 8" schedule 80 spreaders (standard)
- Spreader attach to sidewalls

MHXLDW

- 3¾ in. collar pipe for 4" schedule 40 spreaders (standard)
- 5 in. collar pipe for 6" schedule 80
- Spreader attach to wrap-around end walls

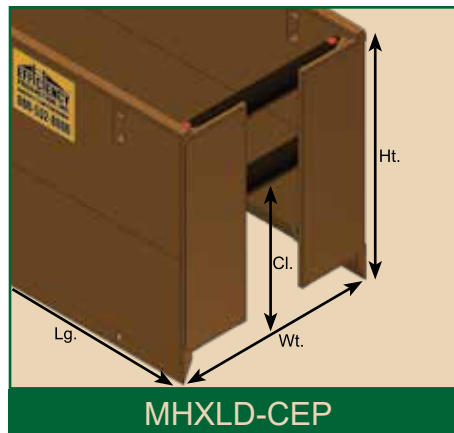
MHXLD-CEP & MHXLDW

- 4-pipe independent
- Custom collar sizes available

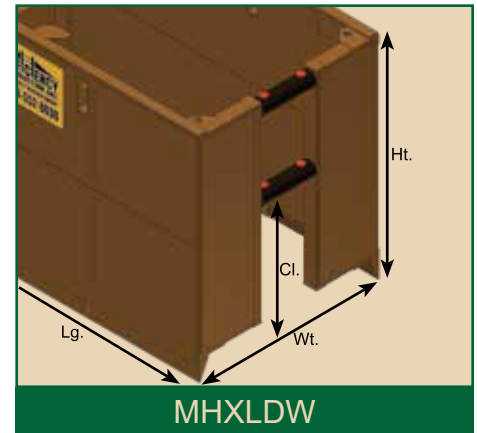
Trench Shield Nomenclature

MHXLD-CEP-810 (Model-Ht.Lg.) =
Manhole Xtra-Light
4 in. Double wall trench shield
with Corner End Plates;
8 ft. high, 10 ft. long

MHXLDW-810 (Model-Ht.Lg.) =
Manhole Xtra-Light
4 in. Double wall trench shield
with Wrap-around end walls;
8 ft. high, 10 ft. long



MHXLD-CEP



MHXLDW



MHXLD-CEP



MHXLDW

MHXLD-CEP 4 in. Steel Double Wall w/ CORNER END PLATE

Model (Ft.) <i>MHXLD-CEP-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
MHXLD-CEP-48	2,605	22	2,520	126	56	42	31
MHXLD-CEP-410	2,965	22	2,280	114	51	38	28
MHXLD-CEP-412	3,400	22	1,920	96	43	32	24
MHXLD-CEP-414	3,755	22	1,200	60	27	20	15
MHXLD-CEP-416	4,145	22	1,200	60	27	20	15
MHXLD-CEP-88	5,070	52	2,220	107	49	37	28
MHXLD-CEP-810	5,740	52	1,980	95	44	33	25
MHXLD-CEP-812	6,760	52	1,680	80	37	28	21
MHXLD-CEP-814	7,470	52	1,440	69	32	24	18
MHXLD-CEP-816	8,150	52	1,320	63	29	22	16

MHXLDW 4 in. Steel Double Wall w/ WRAP AROUND Corner End Plate

Model (Ft.) <i>MHXLDW-Ht.Lg.</i>	Weight (Lbs.)	Pipe Cl. (In.)	Shield Capacity		Depth of Cut (Ft.) Soil Type		
			(PSF)	(kPa)	B	C-60	C-80
MHXLDW-48	2,855	22	1,320	63	29	22	16
MHXLDW-410	3,215	22	1,320	63	29	22	16
MHXLDW-412	3,650	22	1,320	63	29	22	16
MHXLDW-414	4,005	22	1,320	63	29	22	16
MHXLDW-416	4,395	22	1,320	63	29	22	16
MHXLDW-88	5,130	52	1,320	63	29	22	16
MHXLDW-810	5,840	52	1,320	63	29	22	16
MHXLDW-812	6,430	52	1,320	63	29	22	16
MHXLDW-814	7,300	52	1,320	63	29	22	16
MHXLDW-816	7,990	52	1,320	63	29	22	16

Spreader

Spreader Sets & Mud Plates for Steel Trench Shields

Purpose:

Efficiency's spreader sets are available in a wide variety of combinations for any size and type of shield. All spreader sets include pins and keepers.

Spreader Sizes:

- 4" schedule 40
- 6" schedule 80
- 8" schedule 80

8" Schedule 80 Spreader Pipe

Model	Inside Width (In.)	Weight (Lbs.)
SP-24-1	24	104
SP-30-1	30	125
SP-36-1	36	146
SP-42-1	42	169
SP-48-1	48	190
SP-54-1	54	213
SP-60-1	60	234
SP-66-1	66	255
SP-72-1	72	276
SP-78-1	78	299
SP-84-1	84	320
SP-90-1	90	343
SP-96-1	96	366
SP-102-1	102	385
SP-108-1	108	408
SP-120-1	120	450
SP-132-1	132	494
SP-144-1	144	538
SP-156-1	156	580
SP-168-1	168	624
SP-180-1	180	668
SP-192-1	192	713
SP-204-1	204	754
SP-240-1	884	884

Utilized on Models:

XLS	XLD	HT6
HT8	MHXLD-CEP	

Spreader Set Nomenclature

SP-24-1 (8"Sch 80-In. Wt.-One Spr.) = One 8" Schedule 80 spreader pipe with Inside Width of 24 in.

SP4-24-1 (Pipe O.D.-In. Wt.-One Spr.) = One 4" Schedule 40 spreader pipe with Inside Width of 24 in.

SPMPO-24 (MudPlate-In. Wt.) = One Spreader Pipe Mud Plate Only with Inside Width of 24 in.

4" Schedule 40 Spreader Pipe

Model	Inside Width (In.)	Weight (Lbs.)
SPXLS-24-1	24	30
SPXLS-30-1	30	35
SPXLS-36-1	36	40
SPXLS-42-1	42	45
SPXLS-48-1	48	50
SPXLS-54-1	54	55
SPXLS-60-1	60	60
SPXLS-72-1	72	70
SP4-8XLS-1	84	80
SPXLS-96-1	96	90
SPXLS-120-1	120	118
SPXLS-144-1	144	140

Utilized on Models:

XLSM3/XLDM3	XLSM/XLDM
XLS	MHXLDW

6" Schedule 80 Spreader Pipe

Model	Inside Width (In.)	Weight (Lbs.)
SP6-24-1	24	74
SP6-30-1	30	88
SP6-36-1	36	102
SP6-42-1	42	116
SP6-48-1	48	130
SP6-54-1	54	144
SP6-60-1	60	158
SP6-72-1	72	186
SP6-84-1	84	214
SP6-96-1	96	242
SP6-108-1	108	270
SP6-120-1	120	298
SP6-144-1	144	354

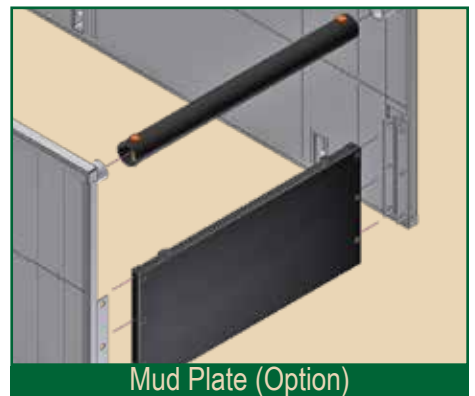
Utilized on Models:

XLSM3/XLDM3	XLSM/XLDM
XLS	MHXLDW



Mud Plate Only

Model	Inside Width (In.)	Weight (Lbs.)
SPMPO-24	24	260
SPMPO-30	30	300
SPMPO-36	36	335
SPMPO-42	42	380
SPMPO-48	48	420
SPMPO-54	54	455
SPMPO-60	60	495
SPMPO-66	66	530
SPMPO-72	72	570
SPMPO-78	78	615
SPMPO-84	84	655
SPMPO-90	90	695
SPMPO-96	96	730
SPMPO-102	102	825
SPMPO-108	108	920
SPMPO-120	120	1,015
SPMPO-132	132	1,100
SPMPO-144	144	1,185



Mud Plate (Option)

Arches

Three Styles of Hi-Clearance Spreader Arches

Purpose:

Efficiency's Hi-Clearance Arch spreader systems allow maximum pipe and structure clearance with minimum trench width. Arches are designed for use with most Efficiency trench shields by fitting over standard sidewall collars, making them interchangeable with spreader pipe.

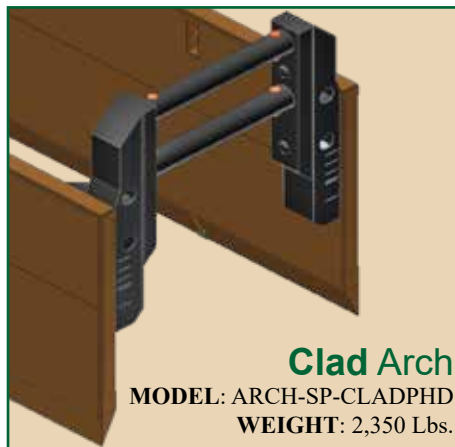
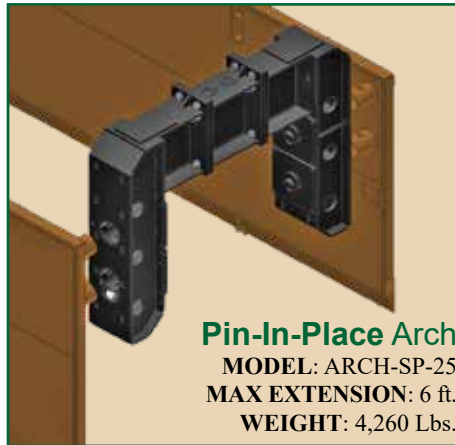
Pin-in-Place Arch

Pin-in-Place arches provide 96 in. of clearance on 8 ft. tall shields, and 120 in. of clearance on 10 ft. tall shields; with a maximum width of 6 ft. with extensions.

Clad Spreader Arch

The Clearance Adapter "Clad" Arch utilizes standard trench shield spreader pipe*, increasing equipment utilization.

* 8" Sch 80 spreader pipe used for Extensions



Custom "Big Mo" Arch

EFFICIENCY PRODUCTION

 AMERICA'S TRENCH BOX BUILDER™

Catalogs & Brochures for Efficiency Production Products

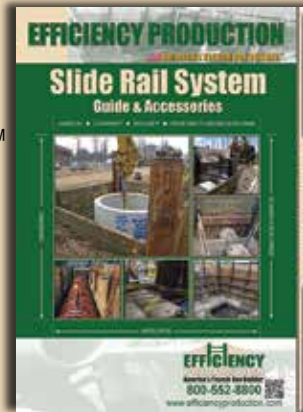
Aluminum Trench Shield Product Application Guide

- XLAP Aluminum Trench Shields
- Build-A-Box™ Modular Shields
- Corru-Lite™
- Alum-A-Shield™
- Innovative Accessories



Slide Rail System Guide & Accessories

- 4-Sided
- ClearSpan™
- 4-Sided Multi-Bay™
- Linear Multi-Bay™
- Shore-Trak™
- Innovative Accessories



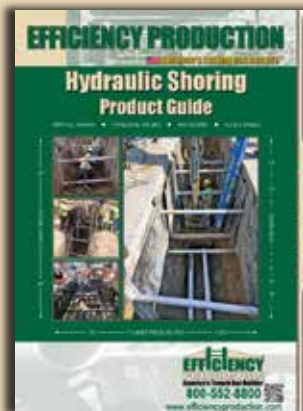
Build-A-Box™ Modular Aluminum Trench Shielding

- 2-Sided
- 3-Sided
- 4-Sided
- Sheeting Guide Frame
- Spreader Arches
- Innovative Accessories



Hydraulic Shoring Product Guide

- Vertical Shores
- Walers
- Hi-Clearance Shores
- Rescue Shores
- Hydraulic Alum-A-Shield™
- Shoring Trailer



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