

# EFFICIENCY PRODUCTION

 AMERICA'S TRENCH BOX BUILDER™

## Steel Trench Shield Product Application Guide

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

PIPE CLEARANCE



DEPTH OF CUT



SHIELD CAPACITY

EFFICIENCY PRODUCTION  
Steel Trench Shield Product Guide

  
**EFFICIENCY**  
PRODUCTION

America's Trench Box Builder™

800-552-8800

[www.encyproduction.com](http://www.encyproduction.com)



# How to Size a Trench Shield

## Soil Classifications, Calculating Depth Ratings, and Sizing a Shield

### For Your Project:

#### MUNICIPAL SERIES SHIELDS

XL3M3/XLDM3..... Page 6-7  
XL3M/XLDM..... Page 8-9

#### CONTRACTOR SERIES SHIELDS

XLS..... Page 10  
XLD..... Page 11  
HT6..... Page 12  
HT8..... Page 13

#### HEAVY DUTY SHIELDS

HD3LD/HDHT6/HDHT8..... Page 14  
Premium XL..... Page 15

#### TELESCOPING BOXES

Inner Shield Liner..... Page 16

#### MANHOLE SHIELDS

Manhole Shields..... Page 17

#### SPREADERS & ARCHES

Spreader Sets & Mud Plates .. Page 18  
Hi-Clear. Spreader Arches ..... Page 19

### 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 = 7.1 kPa (710 kg/m<sup>2</sup>)
- Type C-60 = 9.4 kPa (940 kg/m<sup>2</sup>)
- Type C-80 = 12.6 kPa (1,260 kg/m<sup>2</sup>)

**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 460 mm below top of the shield

#### Machine Lift Capacity

- Lift capacity should be 1.5 times the shield weight at 6 m 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 3.4 kPa are included in the tabulated data

#### Depth rating using Shield Capacity (kPa), e.g. 132 kPa

- Type B Soil:  $132 / 7.1 = 19$  m
- Type C-60 Soil:  $132 / 9.4 = 14$  m
- Type C-80 Soil:  $132 / 12.6 = 10.5$  m

#### 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.



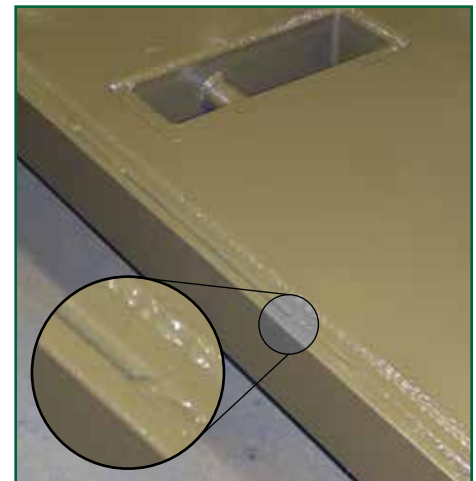
Four-Point Lift System

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

13 mm 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](http://www.encyproduction.com)

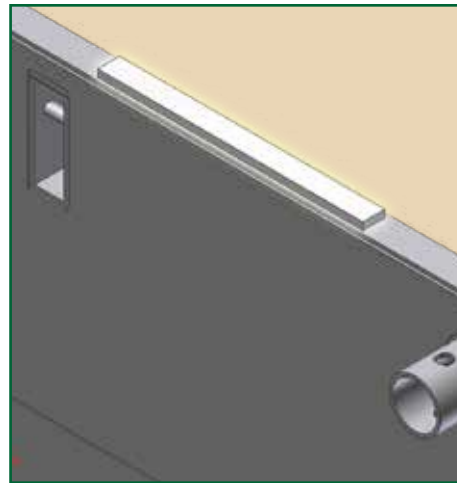
# Options & Accessories

## Versatile Options & Accessories for Steel Trench Shields



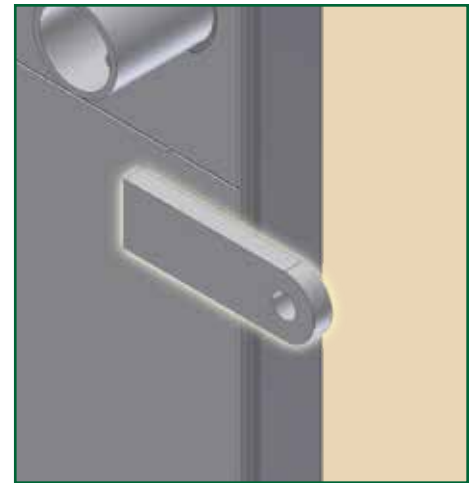
Foam Filler

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



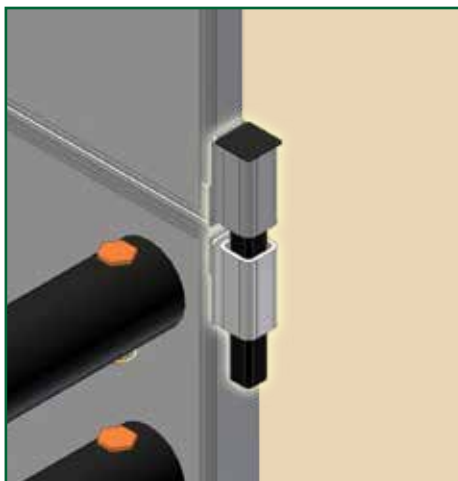
Pushing Blocks

A set of four pushing blocks, each made of 25 mm thick steel, are used for pushing the shield to grade. *Pushing Blocks are NOT intended for pounding with excavator bucket.*



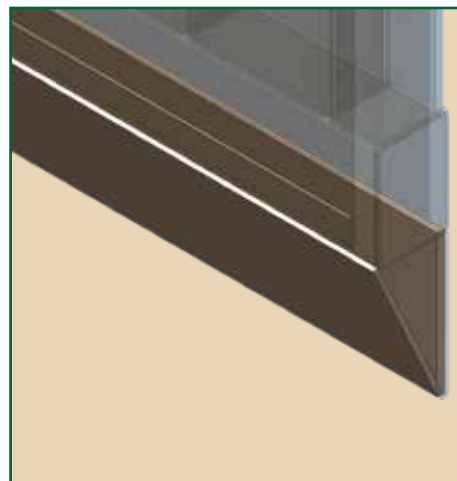
Pulling Lugs

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.



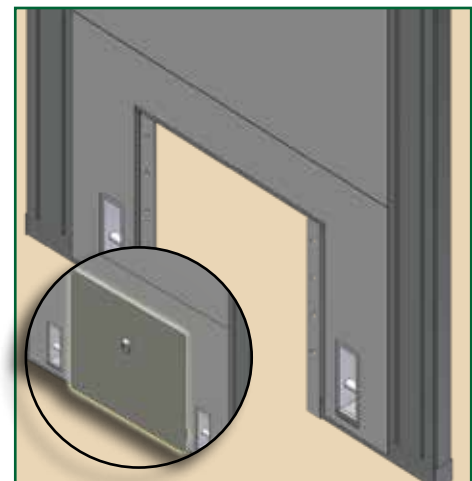
Stacking Pockets

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.

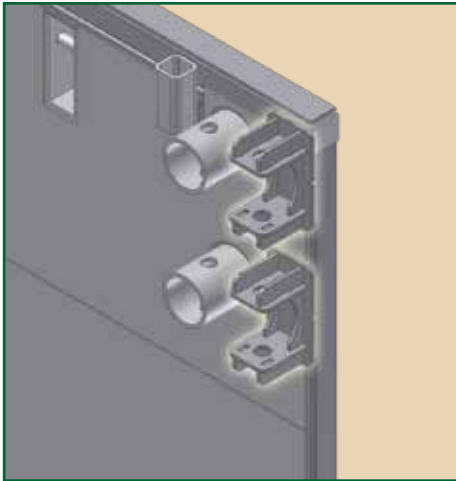


Sidewall Cutout & Door

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.

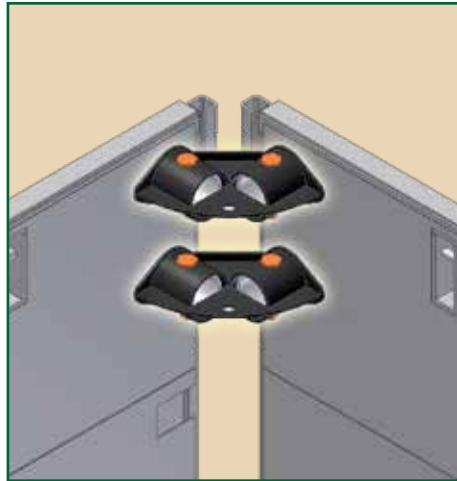
# Options & Accessories

## Versatile Options & Accessories for Steel Trench Shields



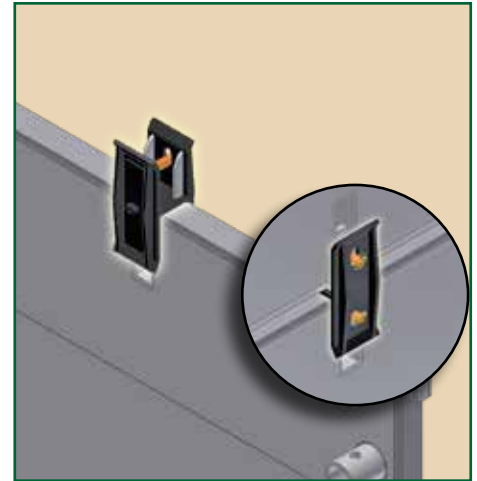
EC Brackets (Option)

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.



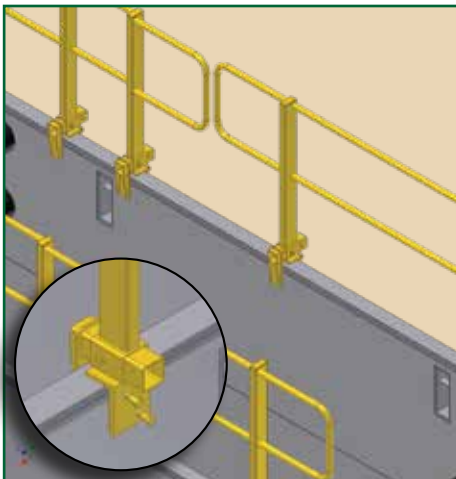
Corner Brackets

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



Stack Brackets

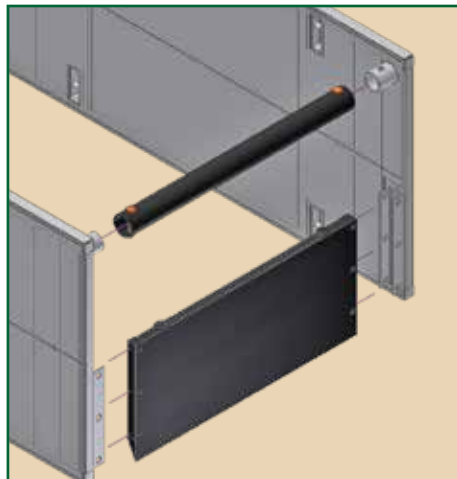
Stack brackets are perfect for securing stacked four-sided shields or other configurations where stacking pockets or Fast Stack™ can not be utilized. The brackets are secured on the trench box sidewall's lifting lugs.



Guard Rail

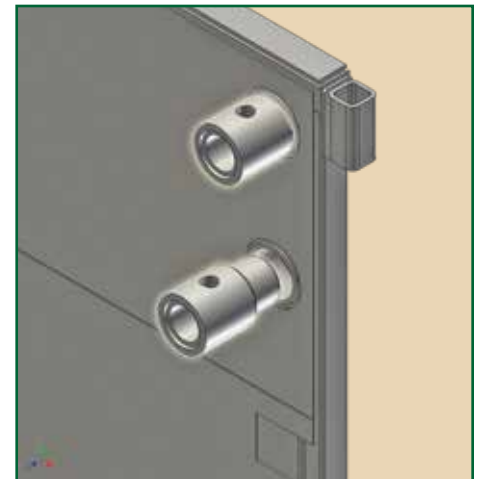
Efficiency's new guard rail is an easy, OSHA compliant fall protection device. Guard Rails come in 1.2, 1.8, and 3 meters lengths, and fit 76-203 millimeter trench shield sidewalls.

*\*Fall Protection Manual available at [www.encyproduction.com](http://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



## 75 mm “Xtra Light” Single Wall Municipal Trench Shield

### Purpose:

The XLSM3 has narrow, 75 mm 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

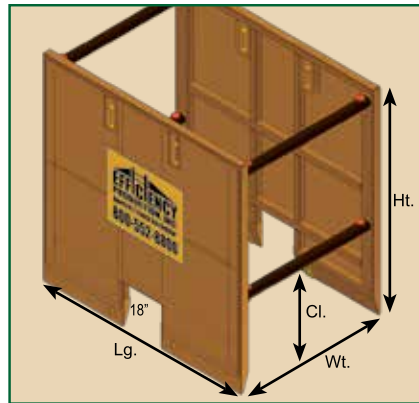
### Collar & Spreader Options:

- 95 mm collar pipe for 4” schedule 40 spreaders (standard)
- 130 mm collar pipe for 6” schedule 80
- Custom collar sizes available

### Features - Page 3

### 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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)

XLSM3 75 mm Steel Single Wall Municipal Trench Shield									
Model (Ft.) <i>XLSM3-Ht.Lg.</i>	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m)			Soil Type
				(kPa)	(PSF)	B	C-60	C-80	
XLSM3-46	1,200 x 1,830	450	560	66	1,380	9.5	7	5	
XLSM3-48	1,200 x 2,440	550	560	37	780	5	4	3	
XLSM3-410	1,200 x 3,050	660	560	28	600	4	3	2	
XLSM3-412	1,200 x 3,660	750	560	23	480	3	2	2	
XLSM3-414	1,200 x 4,270	840	560	20	420	3	2	2	
XLSM3-416	1,220 x 4,880	950	560	17	360	2	2	1	
XLSM3-66	1,830 x 1,830	610	910	57	1,200	8	6	4.5	
XLSM3-68	1,830 x 2,440	750	910	46	960	6	5	4	
XLSM3-610	1,830 x 3,050	920	910	37	780	5	4	3	
XLSM3-612	1,830 x 3,660	1,050	910	26	540	4	3	2	
XLSM3-614	1,830 x 4,270	1,240	910	20	420	3	2	2	
XLSM3-616	1,830 x 4,880	1,420	910	17	360	2	2	1	
XLSM3-86	2,440 x 1,830	730	910	57	1,200	8	6	4.5	
XLSM3-88	2,440 x 2,440	910	910	46	960	6	5	4	
XLSM3-810	2,440 x 3,060	1,120	910	29	600	4	3	3	
XLSM3-812	2,440 x 3,660	1,270	910	23	480	3	2	2	
XLSM3-814	2,440 x 4,270	1,590	910	20	420	3	2	2	
XLSM3-816	2,440 x 4,880	1,850	910	17	360	2	2	1	

# XLDM3



## 75 mm “Xtra Light” Double Wall Municipal Trench Shield

### Purpose:

The XLDM3 has 75 mm 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

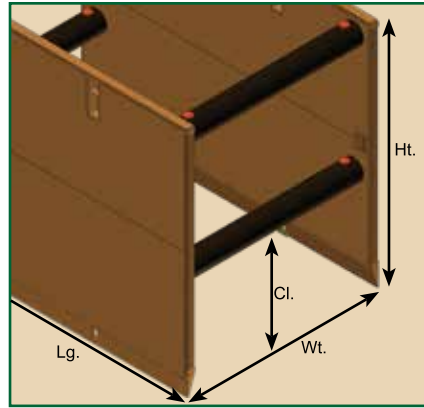
### Collar & Spreader Options:

- 95 mm collar pipe for 4” schedule 40 spreaders (standard)
- 130 mm collar pipe for 6” schedule 80
- Custom collar sizes available

### Features - Page 3

### Shield Options - Page 4

### Accessories - Page 5



### 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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)

### XLDM3 75 mm Steel Double Wall Municipal Trench Shield

Model (Ft.) <i>XLDM3-Ht.Lg.</i>	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
XLDM3-46	1,200 x 1,830	600	560	80	1,680	11	8	6
XLDM3-48	1,200 x 2,440	700	560	72	1,500	10	7.5	5.5
XLDM3-410	1,220 x 3,050	840	560	66	1,380	9	7	5
XLDM3-412	1,220 x 3,660	950	560	46	960	9	5	3.5
XLDM3-414	1,220 x 4,270	1,060	560	37	780	5	4	3
XLDM3-416	1,220 x 4,880	1,200	560	29	600	4	3	2
XLDM3-66	1,830 x 1,830	860	910	98	2,040	14	10	8
XLDM3-68	1,830 x 2,440	970	910	92	1,920	13	9.5	7
XLDM3-610	1,830 x 3,050	1,160	910	69	1,440	10	7	5.5
XLDM3-612	1,830 x 3,660	1,330	910	52	1,080	7	5.5	4
XLDM3-614	1,830 x 4,270	1,500	910	37	780	5	4	3
XLDM3-616	1,830 x 4,880	1,710	910	29	600	4	3	2
XLDM3-86	2,440 x 1,830	1,080	910	98	2,040	14	10	8
XLDM3-88	2,440 x 2,440	1,225	910	92	1,920	13	9.5	7
XLDM3-810	2,440 x 3,050	1,470	910	53	1,080	7	5	4
XLDM3-812	2,440 x 3,660	1,680	910	43	900	6	4.5	3.5
XLDM3-814	2,440 x 4,270	1,925	910	43	900	6	4.5	3.5
XLDM3-816	2,440 x 4,880	2,180	910	37	780	5	4	3

# XLSTM



## 100 mm “Xtra Light” Single Wall Municipal Trench Shield

### Purpose:

The XLSTM are lightweight 100 mm 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

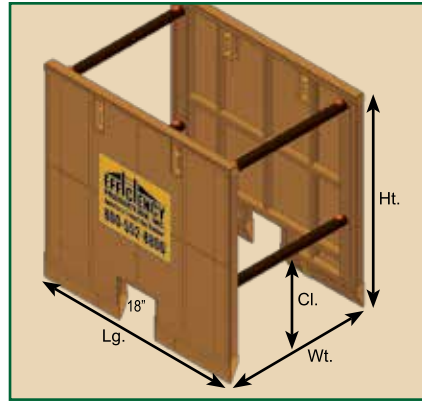
### Collar & Spreader Options:

- 95 mm collar pipe for 4” schedule 40 spreaders (standard)
- 130 mm collar pipe for 6” schedule 80
- Custom collar sizes available

### Features - Page 3

### Shield Options - Page 4

### Accessories - Page 5



### Trench Shield Nomenclature

**XLSTM-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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)

XLSTM 100 mm Steel Single Wall Municipal Trench Shield								
Model (Ft.) <i>XLSTM-Ht.Lg.</i>	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
XLSM-46	1,220 x 1,830	460	560	86	1,800	12	9	6.5
XLSM-48	1,220 x 2,440	550	560	66	1,380	9	7	5
XLSM-410	1,220 x 3,050	670	560	43	900	6	4.5	3.5
XLSM-412	1,220 x 3,660	765	560	32	660	4.5	3	2.5
XLSM-414	1,220 x 4,270	865	560	23	480	3	2.5	2
XLSM-416	1,220 x 4,880	1,045	560	17	360	2.5	2	1
XLSM-66	1,830 x 1,830	625	910	63	1,320	9	6.5	5
XLSM-68	1,830 x 2,440	770	910	49	1,020	7	5	4
XLSM-610	1,830 x 3,050	935	910	40	840	7	4	3
XLSM-612	1,830 x 3,660	1,085	910	32	660	4.5	3	2.5
XLSM-614	1,830 x 4,270	1,260	910	23	480	3	2.5	2
XLSM-616	1,830 x 4,880	1,555	910	17	360	2.5	2	1
XLSM-86	2,440 x 1,830	751	910	63	1,320	9	6.5	5
XLSM-88	2,440 x 2,440	910	910	46	960	6	5	3.5
XLSM-810	2,440 x 3,050	1,120	910	36	720	5	3.5	3
XLSM-812	2,440 x 3,660	1,305	910	36	720	5	3.5	3
XLSM-814	2,440 x 4,270	1,620	910	26	540	3.5	3	2
XLSM-816	2,440 x 4,880	1,890	910	17	360	2.5	2	1



## 100 mm “Xtra Light” Double Wall Municipal Trench Shield

### Purpose:

XLDM are lightweight 100 mm 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

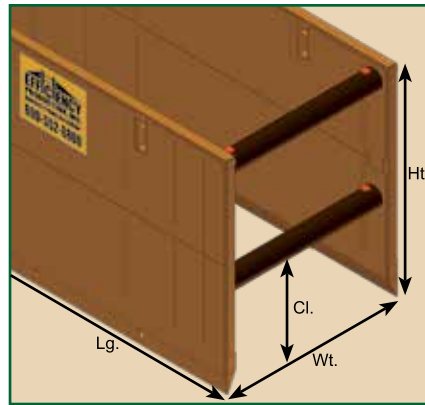
### Collar & Spreader Options:

- 95 mm collar pipe for 4” schedule 40 spreaders (standard)
- 130 mm collar pipe for 6” schedule 80
- Custom collar sizes available

### Features - Page 3

### 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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)

XLDM 100 mm Steel Double Wall Municipal Trench Shield								
Model (Ft.)	Ht. x Lg. (mm)	Weight (kg.)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m)		
<i>XLDM-Ht.Lg.</i>				(kPa)	(PSF)	B	C-60	C-80
XLDM-46	1,220 x 1,830	698	560	115	2,400	16	12	9
XLDM-48	1,220 x 2,440	815	560	115	2,400	16	12	9
XLDM-410	1,220 x 3,050	930	560	92	1,920	13	9.5	7
XLDM-412	1,220 x 3,660	1,060	560	81	1,680	11	8.5	6
XLDM-414	1,220 x 4,270	1,180	560	46	960	6.5	5	2.5
XLDM-416	1,220 x 4,880	1,330	560	40	840	5.5	4	3
XLDM-66	1,830 x 1,830	880	910	115	2,400	16	12	9
XLDM-68	1,830 x 2,440	1,000	910	115	2,400	16	12	9
XLDM-610	1,830 x 3,050	1,260	910	115	2,400	16	12	9
XLDM-612	1,830 x 3,660	1,400	910	86	1,800	12	9	6.5
XLDM-614	1,830 x 4,270	1,580	910	63	1,320	8.5	6.5	5
XLDM-616	1,830 x 4,880	1,790	910	46	960	6	5	3.5
XLDM-86	2,440 x 1,830	1,100	910	115	2,400	16	12	9
XLDM-88	2,440 x 2,440	1,460	910	115	2,400	16	12	9
XLDM-810	2,440 x 3,050	1,780	910	115	2,400	16	12	9
XLDM-812	2,440 x 3,660	2,050	910	81	1,680	11	8.5	6
XLDM-814	2,440 x 4,270	2,435	910	81	1,680	11	8.5	6
XLDM-816	2,440 x 4,880	2,735	910	66	1,380	9	7	6

## 100 mm “Xtra Light” Steel Single Wall Trench Shield

### Purpose:

XLS 100 mm 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

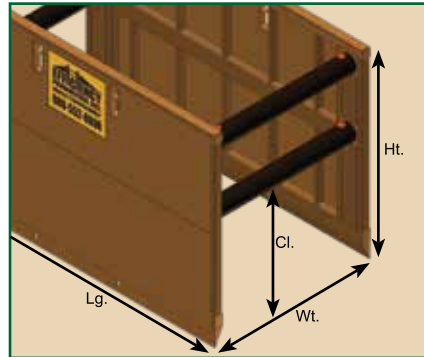
### Collar & Spreader Options:

- 95 mm collar pipe for 4” schedule 40 spreaders (standard)
- 130 mm collar pipe for 6” schedule 80
- 4-pipe independent
- 5-pipe independent
- Custom collar sizes available

### Features - Page 3

### Shield Options - Page 4

### Accessories - Page 5



### 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 100 mm Steel Single Wall Trench Shield								
Model (Ft.) <i>XLS-Ht.Lg.</i>	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
XLS-48	1,220 x 2,440	810	560	107	2,220	15	11	8.5
XLS-410	1,220 x 3,050	960	560	72	1,500	10	8	5.5
XLS-412	1,220 x 3,660	1,105	560	49	1,020	7	5	4
XLS-416	1,220 x 4,880	1,375	560	32	660	4	3	2.5
XLS-420	1,220 x 6,100	1,600	560	23	480	3	2	2
XLS-68	1,830 x 2,440	1,105	1,040	107	2,220	15	11	8.5
XLS-610	1,830 x 3,050	1,305	1,040	63	1,320	9	7	5
XLS-612	1,830 x 3,660	1,560	1,040	52	1,080	7	5	4
XLS-616	1,830 x 4,880	2,040	1,040	32	660	4	3	2.5
XLS-620	1,830 x 6,100	2,415	1,040	23	480	3	2	2
XLS-88	2,440 x 2,440	1,320	1,320	72	1,500	10	8	5.5
XLS-810	2,440 x 3,050	1,585	1,320	55	1,140	8	6	4
XLS-812	2,440 x 3,660	1,860	1,320	40	840	6	4	3
XLS-816	2,440 x 4,880	2,380	1,320	32	660	4	3	2.5
XLS-820	2,440 x 6,100	2,850	1,320	23	480	3	2	2

Others sizes available upon request

Depth Rating derived by dividing Shield Capacity by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)

## 100 mm “Xtra Light” Steel Double Wall Trench Shield

### Purpose:

The XLD 100 mm 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:

- 180 mm 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

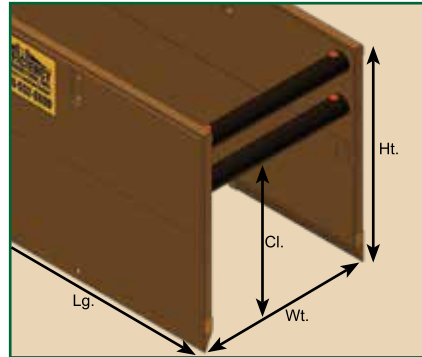
### Accessories - Page 5

#### Trench Shield Nomenclature

**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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)



XLD 100 mm Steel Double Wall Trench Shield								
Model (Ft.) <i>XLD-Ht.Lg.</i>	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
XLD-410	1,220 x 3,050	1,280	560	132	2,760	19	14	10.5
XLD-412	1,220 x 3,660	1,520	560	132	2,760	19	14	10.5
XLD-416	1,220 x 4,880	1,860	560	72	1,500	10	8	5.7
XLD-420	1,220 x 6,100	2,235	560	58	1,200	8	6	4.6
XLD-424	1,220 x 7,315	2,760	560	40	840	6	4.3	3
XLD-610	1,830 x 3,050	1,855	1,040	132	2,760	19	14	10.5
XLD-612	1,830 x 3,660	2,155	1,040	118	2,460	17	13	9
XLD-616	1,830 x 4,880	2,685	1,040	69	1,440	10	7.3	5
XLD-620	1,830 x 6,100	3,250	1,040	66	1,380	9	7	5
XLD-624	1,830 x 7,315	3,910	1,040	43	900	6	5	3
XLD-810	2,440 x 3,050	2,290	1,525	127	2,640	18	13	10
XLD-812	2,440 x 3,660	2,610	1,525	98	2,040	14	10	8
XLD-816	2,440 x 4,880	3,270	1,525	75	1,560	11	8	6
XLD-820	2,440 x 6,100	4,015	1,525	63	1,320	9	7	5
XLD-824	2,440 x 7,315	5,140	1,525	43	900	6	5	3
XLD-1010	3,050 x 3,050	2,710	1,750	127	2,640	18	13	10
XLD-1012	3,050 x 3,660	3,150	1,750	95	1,980	13	10	7.5
XLD-1016	3,050 x 4,880	4,070	1,750	63	1,320	9	7	5
XLD-1020	3,050 x 6,100	4,900	1,750	46	960	6	5	4
XLD-1024	3,050 x 7,315	5,810	1,750	43	900	6	5	3.4

# HT6

## 150 mm “High Tensile” Steel Double Wall Trench Shield

### Purpose:

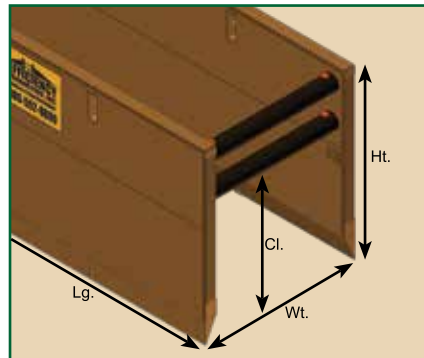
The HT6 is the most versatile steel trench shield available. It combines depth capability with narrow sidewalls, and is designed for medium range excavators.

### Common Applications:

- Deep Sanitary Sewer
- Water Main
- Storm Sewer

### Collar & Spreader Options:

- 180 mm 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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)

#### HT6 150 mm Steel Double Wall Trench Shield

Model (Ft.) <i>HT6-Ht.Lg.</i>	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
HT6-416	1,220 x 4,880	2,410	560	89	1,860	12	9	7
HT6-418	1,220 x 5,490	2,670	560	81	1,680	11	8	6
HT6-420	1,220 x 6,100	2,890	560	69	1,440	10	7	5.5
HT6-424	1,220 x 7,315	3,410	560	55	1,140	8	6	4
HT6-428	1,200 x 8,530	3,970	560	32	660	4.5	3	2.5
HT6-616	1,830 x 4,880	3,175	1,040	112	2,340	16	12	9
HT6-618	1,830 x 5,490	3,480	1,040	81	1,680	11	8	6
HT6-620	1,830 x 6,100	3,780	1,040	69	1,440	10	7	5.5
HT6-624	1,830 x 7,310	4,630	1,040	55	1,140	8	6	4
HT6-628	1,830 x 8,530	5,300	1,040	37	780	5	4	3
HT6-816	2,440 x 4,880	3,830	1,630	95	1,980	13	10	7.5
HT6-818	2,440 x 5,490	4,240	1,630	89	1,860	12	10	7
HT6-820	2,440 x 6,100	4,720	1,630	75	1,560	11	8	6
HT6-824	2,440 x 7,310	5,570	1,630	55	1,140	8	6	4
HT6-828	2,440 x 8,530	6,210	1,630	35	720	5	3.5	3
HT6-1016	3,050 x 4,880	4,710	2,160	81	1,680	11	8	6
HT6-1018	3,050 x 5,490	5,240	2,160	75	1,560	11	8	6
HT6-1020	3,050 x 6,100	5,850	2,160	69	1,440	10	7	5.5
HT6-1024	3,050 x 7,310	7,210	2,160	58	1,200	8	6	4.5
HT6-1028	3,050 x 8,530	8,370	2,160	35	720	5	3.5	3

# HT8

## 200 mm “High Tensile” Steel Double Wall Trench Shield

### Purpose:

The HT8 is an excellent choice for deeper, more demanding work. The 200 mm 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:

- 180 mm 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

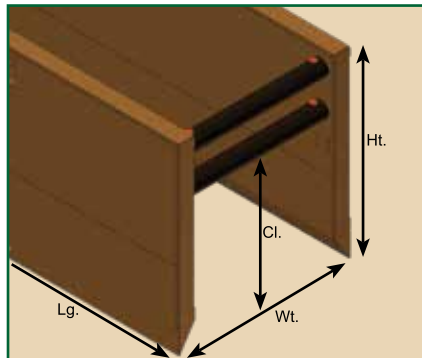
### Accessories - Page 5

#### 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 by soil type rating, i.e. 1,200 PSF / C-60 = 20 ft. (8 m)



HT8 200 mm Steel Double Wall Trench Shield								
Model (Ft.)	Ht. x Lg.	Weight	Pipe Cl.	Shield Capacity		Depth of Cut (m) Soil Type		
<i>HT8-Ht.Lg.</i>	(mm)	(kg)	(mm)	(kPa)	(PSF)	B	C-60	C-80
HT8-416	1,220 x 4,880	2,790	560	124	2,580	17	13	10
HT8-420	1,220 x 6,100	3,230	560	86	1,800	12	9	7
HT8-424	1,220 x 7,315	3,790	560	60	1,260	8	6	5
HT8-430	1,220 x 9,140	4,570	560	40	840	6	4	3
HT8-432	1,220 x 9,750	4,840	560	35	720	5	3	3
HT8-616	1,830 x 4,880	3,600	1,040	127	2,640	18	13	10
HT8-620	1,830 x 6,100	4,180	1,040	86	1,800	12	9	7
HT8-624	1,830 x 7,310	5,030	1,040	60	1,260	8	6	5
HT8-630	1,830 x 9,140	6,150	1,040	49	1,020	7	5	4
HT8-632	1,830 x 9,750	6,480	1,040	37	780	5	4	3
HT8-816	2,440 x 4,880	4,150	1,630	124	2,580	17	13	10
HT8-820	2,440 x 6,100	4,970	1,630	100	2,100	14	11	8
HT8-824	2,440 x 7,310	6,090	1,630	72	1,500	10	8	6
HT8-830	2,440 x 9,140	7,226	1,630	40	840	6	4	3
HT8-832	2,440 x 9,750	7,688	1,630	35	720	5	3	3
HT8-1016	3,050 x 4,880	5,660	2,130	107	2,220	15	11	8
HT8-1020	3,050 x 6,100	6,690	2,130	92	1,920	13	10	7
HT8-1024	3,050 x 7,310	7,380	2,130	81	1,680	11	8	6
HT8-1030	3,050 x 9,140	9,330	2,130	49	1,020	7	5	4
HT8-1032	3,050 x 9,750	9,980	2,130	35	720	5	3	3

# Heavy Duty Boxes

## 50 or 200 mm Heavy Duty Steel Double Wall Shield

### Purpose:

Heavy Duty models are available for Efficiency's 150 or 200 mm 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

- 180 mm collar pipe for 8" schedule 80 spreaders (standard)

#### HDHT8

- 180 mm 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.)** = 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 150 mm Heavy Duty Steel Double Wall Trench Shield								
Model (Ft.) HDHT6-Ht.Lg.	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
HDHT6-816-35	2,440 x 4,880	4,015	1,600	99	2,100	14	10.5	8
HDHT6-816-45	2,440 x 4,880	4,350	1,600	127	2,700	18	13.5	10
HDHT6-820-30	2,440 x 6,100	4,875	1,600	85	1,800	12	9	7
HDHT6-820-40	2,440 x 6,100	5,840	1,600	113	2,400	16	12	9
HDHT6-824-20	2,440 x 7,310	5,625	1,600	56	1,200	8	6	4.5
HDHT6-824-30	2,440 x 7,310	6,930	1,600	85	1,800	12	9	7
HDHT6-828-15	2,440 x 8,835	6,730	1,600	42	900	6	4.5	3.5
HDHT6-830-30	2,440 x 9,140	7,510	1,600	85	1,800	12	9	7
HDHT6-1016-30	3,050 x 4,880	4,860	2,100	85	1,800	12	9	7
HDHT6-1016-45	3,050 x 4,880	7,020	2,100	127	2,700	18	13.5	10
HDHT6-1020-25	3,050 x 6,100	6,010	2,100	71	1,500	10	7.5	6
HDHT6-1020-35	3,050 x 6,100	7,215	2,100	99	2,100	14	10.5	8
HDHT6-1024-25	3,050 x 7,310	7,870	2,100	71	1,500	10	7.5	6
HDHT6-1024-30	3,050 x 7,310	8,960	2,100	85	1,800	12	9	7
HDHT6-1028-15	3,050 x 8,835	9,315	2,100	42	900	6	4.5	3.5
HDHT6-1030-15	3,050 x 8,140	10,395	2,100	42	900	6	4.5	3.5
HDHT8 200 mm Heavy Duty Steel Double Wall Trench Shield								
Model (Ft.) HDHT8-Ht.Lg.	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m) Soil Type		
				(kPa)	(PSF)	B	C-60	C-80
HDHT8-816-45	2,440 x 4,880	4,405	1,600	127	2,700	18	13.5	10
HDHT8-816-50	2,440 x 4,880	49,230	1,600	141	3,000	20	15	11
HDHT8-820-40	2,440 x 6,100	5,535	1,600	113	2,400	16	12	9
HDHT8-820-45	2,440 x 6,100	6,390	1,600	127	2,700	18	13.5	10
HDHT8-824-30	2,440 x 7,310	6,525	1,600	85	1,800	12	9	7
HDHT8-824-40	2,440 x 7,310	8,280	1,600	113	2,400	16	12	9
HDHT8-828-20	2,440 x 8,835	7,245	1,600	56	1,200	8	6	5
HDHT8-828-30	2,440 x 8,835	11,240	1,600	85	1,800	12	9	7
HDHT8-830-15	2,440 x 9,140	7,305	1,600	42	900	6	4.5	3
HDHT8-830-25	2,440 x 9,140	10,080	1,600	71	1,500	10	7.5	6
HDHT8-1016-40	3,050 x 4,880	5,740	2,100	71	1,501	10	7.5	6
HDHT8-1016-60	3,050 x 4,880	6,205	2,100	169	3,600	24	18	14
HDHT8-1020-35	3,050 x 6,100	7,070	2,100	99	2,100	14	10.5	8
HDHT8-1020-45	3,050 x 6,100	8,190	2,100	127	2,700	18	13.5	10
HDHT8-1024-30	3,050 x 7,310	7,870	2,100	85	1,800	12	9	7
HDHT8-1024-40	3,050 x 7,310	10,460	2,100	113	2,400	16	12	9
HDHT8-1028-20	3,050 x 8,835	9,415	2,100	56	1,200	8	6	5
HDHT8-1028-30	3,050 x 8,835	7,945	2,100	85	1,800	12	9	7
HDHT8-1030-20	3,050 x 8,140	10,530	2,100	56	1,200	8	6	5
HDHT8-1030-25	3,050 x 8,140	11,880	2,100	71	1,500	10	7.5	6



HDHT6



HDHT8

# Inner Shield Liner

## 100 mm 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:

- 180 mm 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 100 mm Steel Double Wall Shield

Model (Ft.) (SL-Ht.Lg.-C60)	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Cap.		Depth of Cut (m)		Recom. Length Outer Shield
				(kPa)	(PSF)	C-60	C-80	
SL-614-20	1,830 x 4,270	2,270	1,040	56	1,200	6	4.5	5.5 - 6.1 m
SL-614-25	1,830 x 4,270	2,420	1,040	71	1,500	7.5	6	5.5 - 6.1 m
SL-616-20	1,830 x 4,880	2,685	1,040	56	1,200	6	4.5	6.1 - 6.7 m
SL-616-25	1,830 x 4,880	2,915	1,040	71	1,500	7.5	6	6.1 - 6.7 m
SL-618-20	1,830 x 5,490	3,010	1,040	56	1,200	6	4.5	6.7 - 7.3 m
SL-618-25	1,830 x 5,490	3,405	1,040	71	1,500	7.5	6	6.7 - 7.3 m
SL-620-20	1,830 x 6,100	3,250	1,040	56	1,200	6	4.5	7.3 - 7.9 m
SL-620-25	1,830 x 6,100	3,685	1,040	71	1,500	7.5	6	7.3 - 7.9 m

### 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

## 100 mm Single and Double Wall Manhole Shields

### Purpose:

Efficiency's 100 mm 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

- 180 mm collar pipe for 8" schedule 80 spreaders (standard)
- Spreader attach to sidewalls

#### MHXLDW

- 95 mm collar pipe for 4" schedule 40 spreaders (standard)
- 130 mm collar pipe for 6" schedule 80
- Spreader attach to wrap-around end walls

#### MHXLD-CEP & MHXLDW

- 4-pipe independent
- Custom collar sizes available

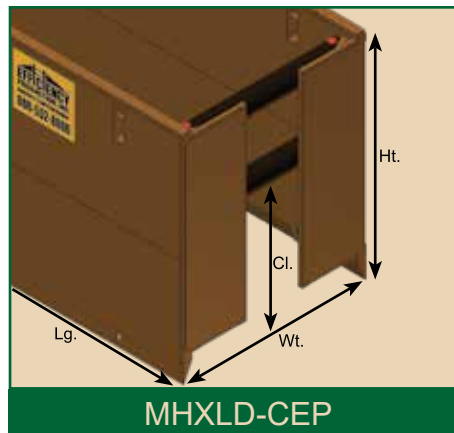
### Trench Shield Nomenclature

**MHXLD-CEP-810 (Model-Ht.Lg.) =**

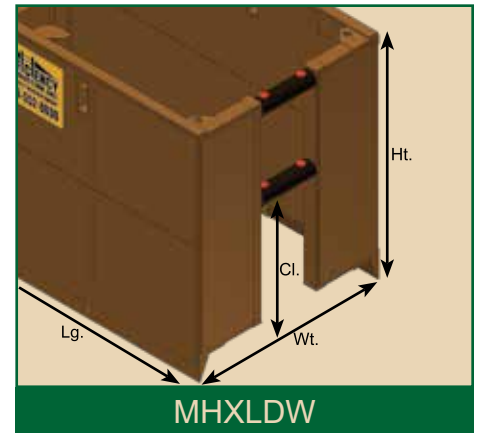
Manhole Xtra-Light  
4 in. Double wall trench shield with Corner End Plates;  
8 ft. high, 10 ft. long

**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 100 mm Steel Double Wall w/ CORNER END PLATE

Model (Ft.) MHXLD-CEP-Ht.Lg.	Ht. x Lg. (mm)	Weight (kg)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m)			Soil Type
				(kPa)	(PSF)	B	C-60	C-80	
MHXLD-CEP-48	1,220 x 2,440	1,170	560	126	2,520	17	12.5	9	
MHXLD-CEP-410	1,220 x 3,050	1,335	560	114	2,280	15	11.5	8.5	
MHXLD-CEP-412	1,220 x 3,660	1,530	560	96	1,920	13	9.5	7	
MHXLD-CEP-414	1,220 x 4,270	1,670	560	60	1,200	8	6	4.5	
MHXLD-CEP-416	1,220 x 4,880	1,865	560	60	1,200	8	6	4.5	
MHXLD-CEP-88	2,440 x 2,440	2,280	1,320	107	2,220	15	11	8.5	
MHXLD-CEP-810	2,440 x 3,050	2,580	1,320	95	1,980	13	1	7.5	
MHXLD-CEP-812	2,440 x 3,660	3,040	1,320	80	1,680	11	8.5	6.5	
MHXLD-CEP-814	2,440 x 4,270	3,360	1,320	69	1,440	10	7	5.5	
MHXLD-CEP-816	2,440 x 4,880	3,670	1,320	63	1,320	9	6.5	5	

### MHXLDW 100 mm Steel Double Wall w/ WRAP AROUND Corner End Plate

Model (Ft.) MHXLDW-Ht.Lg.	Ht. x Lg. (mm)	Weight (Lbs.)	Pipe Cl. (mm)	Shield Capacity		Depth of Cut (m)			Soil Type
				(kPa)	(PSF)	B	C-60	C-80	
MHXLDW-48	1,220 x 2,440	1,285	560	63	1,320	9	6.5	5	
MHXLDW-410	1,220 x 3,050	1,445	560	63	1,320	9	6.5	5	
MHXLDW-412	1,220 x 3,660	1,640	560	63	1,320	9	6.5	5	
MHXLDW-414	1,220 x 4,270	1,800	560	63	1,320	9	6.5	5	
MHXLDW-416	1,220 x 4,880	1,980	560	63	1,320	9	6.5	5	
MHXLDW-88	2,440 x 2,440	2,310	1,320	63	1,320	9	6.5	5	
MHXLDW-810	2,440 x 3,050	2,630	1,320	63	1,320	9	6.5	5	
MHXLDW-812	2,440 x 3,660	2,890	1,320	63	1,320	9	6.5	5	
MHXLDW-814	2,440 x 4,270	3,285	1,320	63	1,320	9	6.5	5	
MHXLDW-816	2,440 x 4,880	3,595	1,320	63	1,320	9	6.5	5	



# 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 (mm)	Weight (kg)
SP-24-1	600	50
SP-30-1	750	55
SP-36-1	900	65
SP-42-1	1,050	76
SP-48-1	1,200	85
SP-54-1	1,350	95
SP-60-1	1,500	105
SP-66-1	1,650	115
SP-72-1	1,800	125
SP-78-1	1,950	135
SP-84-1	2,100	145
SP-90-1	2,250	155
SP-96-1	2,400	165
SP-102-1	2,550	175
SP-108-1	2,700	185
SP-120-1	3,000	200
SP-132-1	3,300	220
SP-144-1	3,600	240
SP-156-1	3,900	260
SP-168-1	4,200	280
SP-180-1	4,500	300
SP-192-1	4,800	320
SP-204-1	5,100	340
SP-240-1	22,100	400

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. (600 mm)

**SP4-24-1 (Pipe O.D.-In. Wt.-One Spr.)** = One 4" Schedule 40 spreader pipe with Inside Width of 24 in. (600 mm)

**SPMPO-24 (MudPlate-In. Wt.)** = One Spreader Pipe Mud Plate Only with Inside Width of 24 in. (600 mm)

### 4" Schedule 40 Spreader Pipe

Model	Inside Width (mm)	Weight (kg)
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
SP4-144-1	3,600	59

Utilized on Models:

XLSM3/XLDM3	XLSM/XLDM
XLS	MHXLDW

### 6" Schedule 80 Spreader Pipe

Model	Inside Width (mm)	Weight (kg)
SP6-24-1	600	33
SP6-30-1	750	40
SP6-36-1	900	46
SP6-42-1	1,050	52
SP6-48-1	1,200	59
SP6-54-1	1,350	65
SP6-60-1	1,500	71
SP6-72-1	1,800	84
SP6-84-1	2,100	96
SP6-96-1	2,400	109
SP6-108-1	2,550	122
SP6-120-1	3,000	134
SP6-144-1	3,600	160

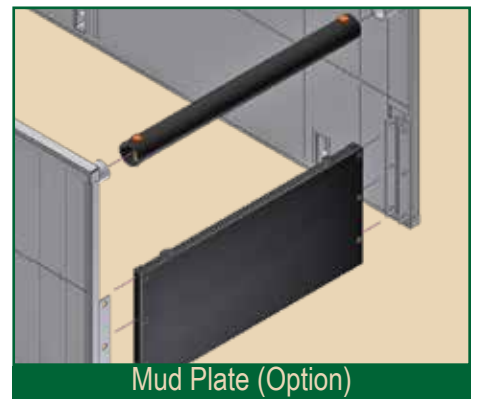
Utilized on Models:

XLSM3/XLDM3	XLSM/XLDM
XLS	MHXLDW



### Mud Plate Only

Model	Inside Width (mm)	Weight (kg)
SPMPO-24	600	117
SPMPO-30	750	135
SPMPO-36	900	151
SPMPO-42	1,050	171
SPMPO-48	1,200	189
SPMPO-54	1,350	205
SPMPO-60	1,500	223
SPMPO-66	1,650	239
SPMPO-72	1,800	257
SPMPO-78	1,950	277
SPMPO-84	2,100	295
SPMPO-90	2,250	313
SPMPO-96	2,400	329
SPMPO-102	2,550	372
SPMPO-108	2,700	414
SPMPO-120	3,000	457
SPMPO-132	3,300	495
SPMPO-144	3,600	533



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.

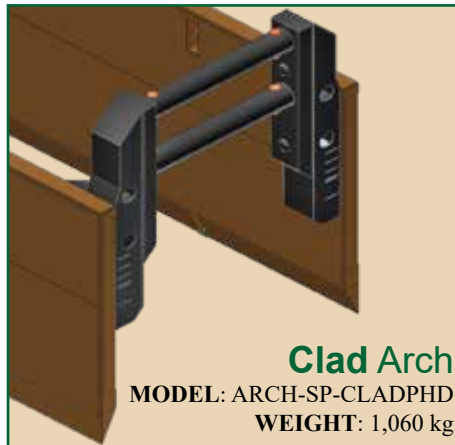
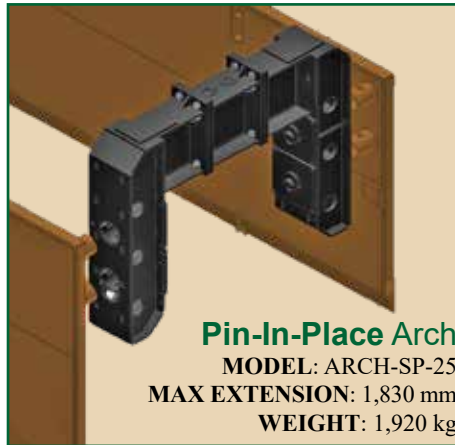
### Pin-in-Place Arch

Pin-in-Place arches provide 2,310 mm of clearance on 2.5 m tall shields, and 3,000 mm of clearance on 3 m tall shields; with a maximum width of 1.8 m 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

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## Catalogs & Brochures for Efficiency Production Products

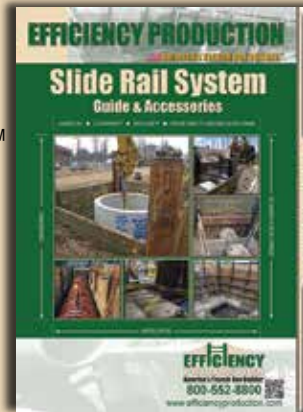
### Aluminum Trench Shield Product Application Guide

- 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



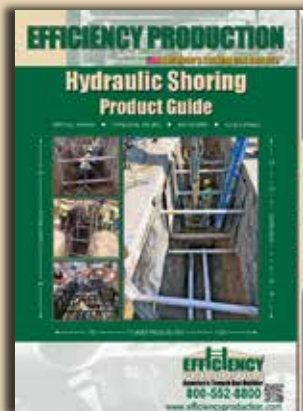
### Build-A-Box™ Modular Aluminum Trench Shielding

- 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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