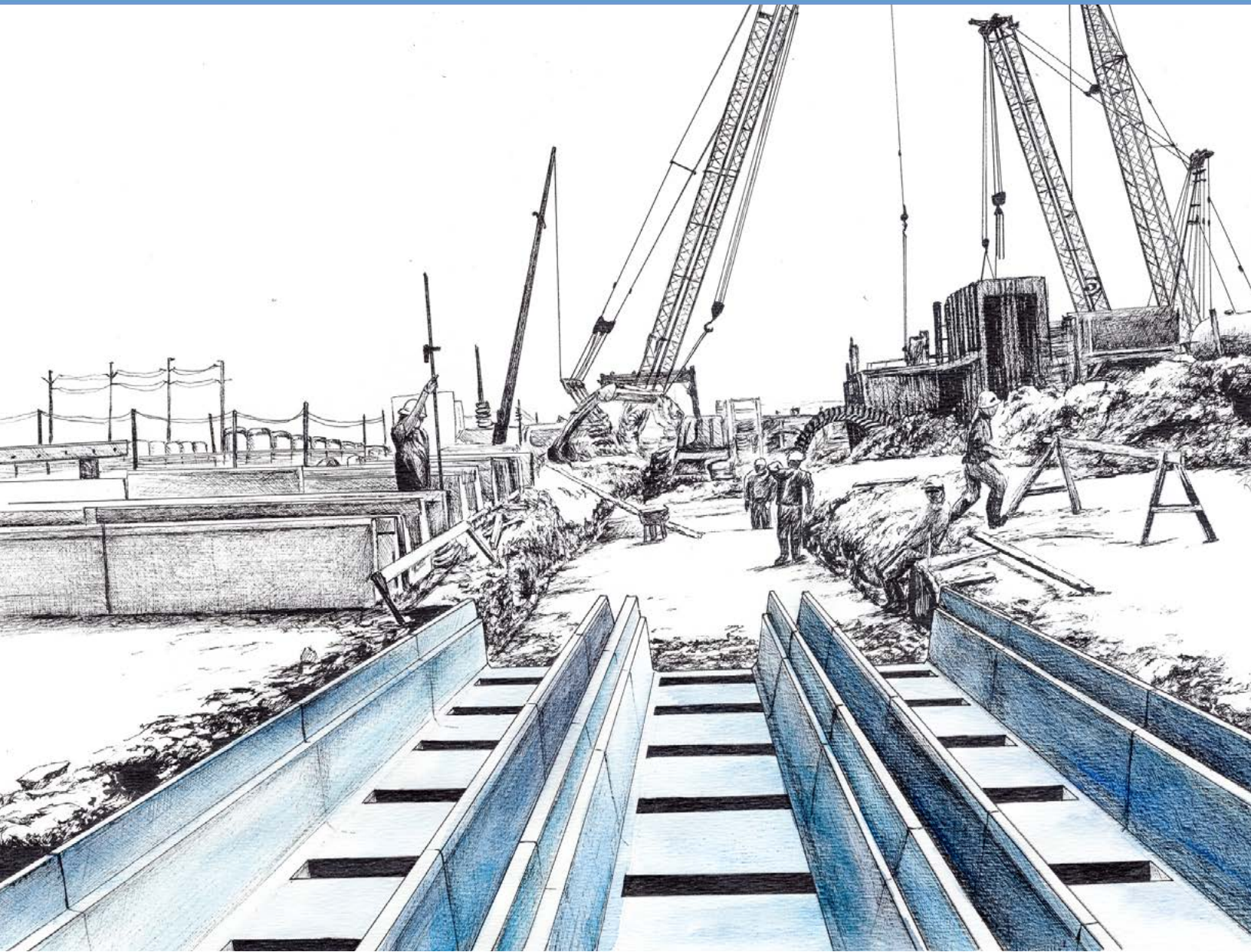




CONCAST

Fibercrete®

PRECISELY ENGINEERED HIGH STRENGTH CONCRETE



TRENCH SYSTEMS



Trench System Overview

IDEAL USES FOR CONCAST TRENCH SYSTEMS

Trench



SUBSTATIONS



INDUSTRIAL PIPING

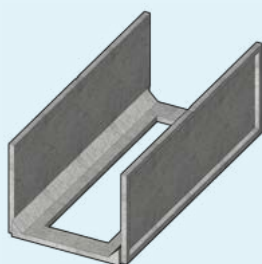


TRANSPORTATION

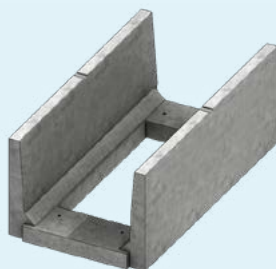


MISCELLANEOUS

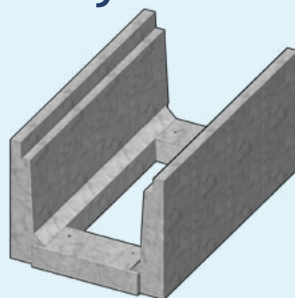
Concast Trench Systems



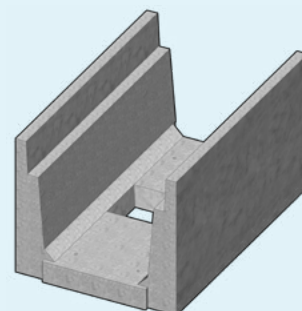
Fibercrete®
Pedestrian Rated
Trench Systems



Concrete
Pedestrian Rated
PT Trench Systems



Light Traffic
H-10 Rated
Trench Systems



Heavy Traffic
H-20 & H-20 Rated
Trench Systems

- Inside depths of 12 inches and 16 inches are available in all trench styles.
- PT channels are available in 24 inch deep. Heavy Traffic channels are also 36 inches deep.
- Also available are 8" wide by 6" deep and 12" wide by 12" wide by 8" and 16" deep channels.
- Standard channel lengths are 4' or 8' long. Other custom lengths available.
- Inside channel widths of 10", 20", 24", 30", 20", and 50" are standard.

Guide Specifications

Pull Boxes shall be constructed with Concast high strength concrete or approved equal. It shall be composed of cement mortar with steel reinforcing throughout.

Complete recommended specifications can be found in this catalog and online

Detail Drawings Provided

Concast will provide detail drawings for engineering approval, and to assist the construction crew with installation. Drawings will show overall product size, opening size, weight, and any accessories required such as inserts and knockouts.

You can access the installation guidelines online at www.concastinc.com

Fibercrete® Trench System



Trench System Overview

REDUCE INSTALLATION COSTS WITH CONCAST'S FIBERCRETE® PEDESTRIAN TRENCH SYSTEMS

IN-PLACE COST IS LESS than site-cast concrete, conventional precast concrete, plastic mortars, or fiberglass plastics.



Benefits:

- **HANDLING IS EASY.** Our pedestrian channels are lighter than conventional concrete. One or two men can install most channels without using hoist equipment.
- **3 TIMES THE STRENGTH OF CONCRETE;** with superior crack resistance and long-term durability.
- **NON-SKID WALKWAY.** Fibercrete covers provide a skid-proof surface.
- **INSTALLATION IS SIMPLE.** The concast trench system has fewer parts to manage. No special hardware are required at the corners or tees. One universal channel will form a tee, ell, or cross. Interlocking male/female ends eliminate the need for special tools or hardware.
- **LESS EXCAVATION REQUIRED.** Fibercrete® trench is a compact system. It's outside dimensions are much smaller than that of other trench systems. As a result, less clearance is needed around control houses, tower footings, and foundations.
- **SUBSTATION EXPANSION.** Manual installation removes the need for cranes in stations where overhead towers and power lines exist. Fibercrete® trench is ideal for expansion since it can adapt to existing trench installations. A universal channel can be strategically placed in trench runs with end plates temporarily closing off the side-walls to allow for future expansion. This results in significant potential labor savings during future modifications to the substation.
- **IMMEDIATE USE.** Installation of precast sections of H-20 rated, heavy traffic channels in conjunction with pedestrian trench facilitates immediate road crossing traffic.



Features:

- **3 TIMES THE STRENGTH OF CONCRETE.** Has superior crack resistance and long-term durability.
- **OPEN BOTTOM DESIGN.** The Fibercrete® pedestrian rated trench system is designed with an open bottom for drainage and to allow conduit routing.
- **ABOVE OR BELOW GRADE.** Fibercrete® trench can be installed either above or below grade. No special hardware is required.

Fibercrete® Trench System



Ped. Rated Std. Fibercrete Channels

Trench

PEDESTRIAN FIBERCRETE® CHANNEL

CHANNEL L = 4 ft.	CHANNEL L = 8 ft.	INSIDE WIDTH	INSIDE DEPTH
8010	8810	10"	12"
8020	8820	20"	12"
8024	8824	24"	12"
8030	8830	30"	12"
8040	8840	40"	12"
8050	8850	50"	12"
801016	881016	10"	16"
802016	882016	20"	16"
802416	882416	24"	16"
803016	883016	30"	16"
804016	884016	40"	16"
805016	885016	50"	16"

Pedestrian Channels are rated for 200 lbs./ft²

Channel Options Page 22

- Solid Bottom Channel
- Special Length Channel
- Elevation Changes
- Angled Channel
- Complex Intersections

FLUSH PEDESTRIAN CHANNEL

CHANNEL L = 4 ft.	CHANNEL L = 8 ft.	INSIDE WIDTH	INSIDE DEPTH
8010F	8810F	10"	12"
8020F	8820F	20"	12"
8024F	8824F	24"	12"
8030F	8830F	30"	12"
8040F	8840F	40"	12"
8050F	8850F	50"	12"
801016F	881016F	10"	16"
802016F	882016F	20"	16"
802416F	882416F	24"	16"
803016F	883016F	30"	16"
804016F	884016F	40"	16"
805016F	885016F	50"	16"

SIDE BY SIDE CHANNEL COMPARISON

STANDARD CHANNEL

Our standard channel will work for all pedestrian rated applications that do not require the covers to be flush with the grade.

R=2-1/4": minimum clearance recommended by Concast

VS.

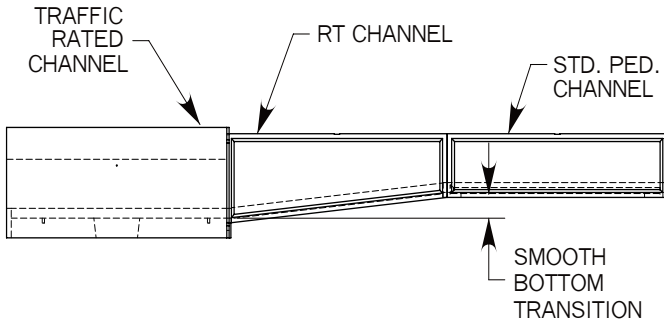
FLUSH CHANNEL

Used where the surrounding rock, asphalt, or concrete needs to be flush with the covers. It can be purchased with solid and/or grated covers for drainage trench.



Ped. Rated Transition Channels (RT)

TYPICAL RT ELEVATION DETAIL



RT solid-bottom channels have "female" stops on both ends of the channel to accommodate various assembly locking configurations. These channels are utilized to create a smooth bottom transition in all layouts that have both pedestrian and traffic rated channel. Also can be used at the control house if a deeper inlet is required. These channels all have a solid bottom design.

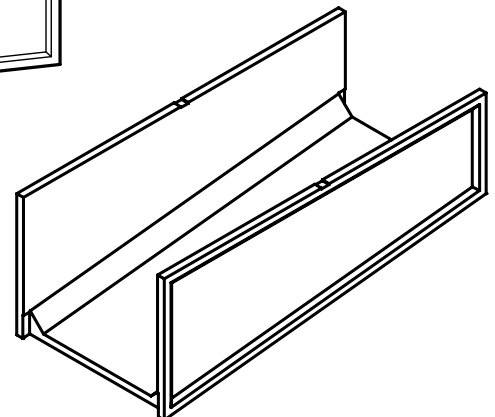
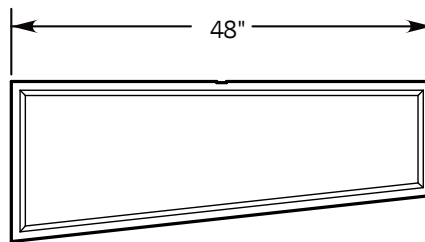
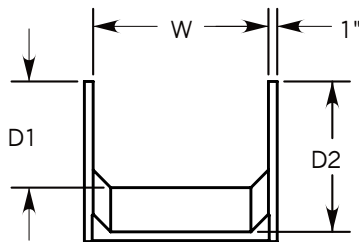
Trench System

TRANSITION TO HT OR HT20 CHANNEL

TRANSITION CHANNEL	FLUSH RT CHANNEL	INSIDE WIDTH "W"	INSIDE DEPTH "D1"	INSIDE DEPTH "D2"
8010SRT	8010FSRT	10"	12"	17.25"
8020SRT	8020FSRT	20"	12"	17.25"
8024SRT	8024FSRT	24"	12"	17.25"
8030SRT	8030FSRT	30"	12"	17.25"
8040SRT	8040FSRT	40"	12"	17.25"
8050SRT	8050FSRT	50"	12"	17.25"
801016DRT	801016FDRT	10"	16"	21.25"
802016DRT	802016FDRT	20"	16"	21.25"
802416DRT	802416FDRT	24"	16"	21.25"
803016DRT	803016FDRT	30"	16"	21.25"
804016DRT	804016FDRT	40"	16"	21.25"
805016DRT	805016FDRT	50"	16"	21.25"

TRANSITION TO LT OR HTSG CHANNEL

TRANSITION CHANNEL	FLUSH RT CHANNEL	INSIDE WIDTH "W"	INSIDE DEPTH "D1"	INSIDE DEPTH "D2"
8010RT	8010FRT	10"	12"	13.88"
8020RT	8020FRT	20"	12"	13.88"
8024RT	8024FRT	24"	12"	13.88"
8030RT	8030FRT	30"	12"	13.88"
8040RT	8040FRT	40"	12"	13.88"
801016RT	801016FRT	10"	16"	17.88"
802016RT	802016FRT	20"	16"	17.88"
802416RT	802416FRT	24"	16"	17.88"
803016RT	803016FRT	30"	16"	17.88"
804016RT	804016FRT	40"	16"	17.88"

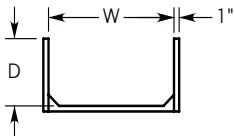
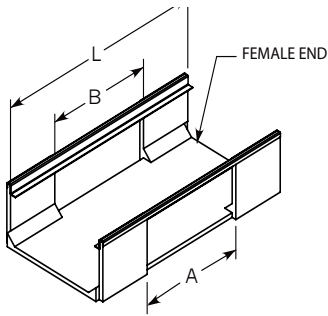


See Concast's website for drawings of transition channel in both PDF & AutoCAD format.

Universals & End Plates



Trench



Universal channels are shipped with removable aluminum cover supports mounted to the top ledges.

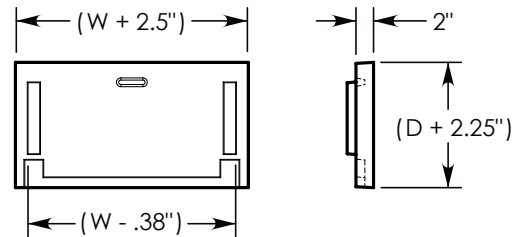
Openings are centered on the sides, but can be offset if necessary.

PEDESTRIAN RATED FIBERCRETE® UNIVERSAL CHANNELS						
STANDARD UNIVERSAL	FLUSH UNIVERSAL	INSIDE WIDTH	INSIDE DEPTH	LENGTH "L"	OPENING "A"	OPENING "B"
8012 (10X10)	8012F (10X10)	10"	12"	48"	10"	10"
8022 (20X20)	8022F (20X20)	20"	12"	48"	20"	20"
8026 (24X24)	8026F (24X24)	24"	12"	48"	24"	24"
8032 (30X30)	8032F (30X30)	30"	12"	48"	30"	30"
8042 (40X40)	8042F (40X40)	40"	12"	48"	20"	20"
8852 (50X50)	8852F (50X50)	50"	12"	96"	50"	50"
801216 (10X10)	801216F (10X10)	10"	16"	48"	10"	10"
802216 (20X20)	802216F (20X20)	20"	16"	48"	20"	20"
802616 (24X24)	802616F (24X24)	24"	16"	48"	24"	24"
803216 (30X30)	803216F (30X30)	30"	16"	48"	30"	30"
804216 (40X40)	804216F (40X40)	40"	16"	48"	20"	20"
885216 (50X50)	885216F (50X50)	50"	16"	96"	50"	50"
EXAMPLES OF NON-STANDARD UNIVERSAL CHANNELS						
8022 (20X20)	8022F (20X20)	20"	12"	48"	20"	20"
803216 (30X30)	803216F (30X30)	30"	16"	48"	None	30"

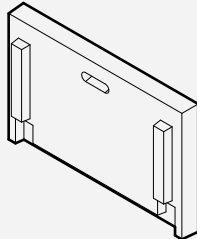
Universal channels can be used to make tees, ells, or crosses. They can also be used to form a smooth transition from one width trench to another. The channel has a solid bottom for additional strength. There is such a large number of universal channel configurations, that only a few are depicted in the tables. To obtain the correct part number, refer to the diagram and apply the appropriate numbers. More information is available on the Concast website.

PEDESTRIAN END PLATES		
PEDESTRIAN END PLATE	PED. CHANNEL INSIDE WIDTH "W"	PED. CHANNEL INSIDE DEPTH "D"
8013	10"	12"
8023	20"	12"
8027	24"	12"
8033	30"	12"
8043	40"	12"
8053	50"	12"
801316	10"	16"
802316	20"	16"
802716	24"	16"
803316	30"	16"
804316	40"	16"
805316	50"	16"

Pedestrian End Plates are rated for 200 lbs./ft²



PEDESTRIAN END PLATES



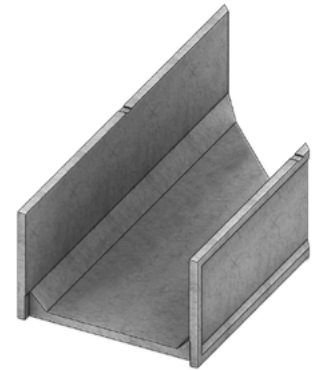
End plates are used to close up unused universal channel openings, and also to terminate trench runs. These end plates are designed to fit Concast's pedestrian rated Fibercrete® channels; and are available in all standard channel widths.

Ped. Rated Angled Fibercrete Channels



PEDESTRIAN FIBERCRETE® ANGLED CHANNEL

CHANNEL 22.5 DEGREE LEFT	CHANNEL 22.5 DEGREE RIGHT	CHANNEL 45 DEGREE LEFT	CHANNEL 45 DEGREE LEFT	INSIDE WIDTH	INSIDE DEPTH
8010 22.5L	8010 22.5R	8010 45L	8010 45R	10"	12"
8020 22.5L	8020 22.5R	8020 45L	8020 45R	20"	12"
8024 22.5L	8024 22.5R	8024 45L	8024 45R	24"	12"
8030 22.5L	8030 22.5R	8030 45L	8030 45R	30"	12"
8040 22.5L	8040 22.5R	8040 45L	8040 45R	40"	12"
8050 22.5L	8050 22.5R	8050 45L	8050 45R	50"	12"
801016 22.5L	801016 22.5R	801016 45L	801016 45R	10"	16"
802016 22.5L	802016 22.5R	802016 45L	802016 45R	20"	16"
802416 22.5L	802416 22.5R	802416 45L	802416 45R	24"	16"
803016 22.5L	803016 22.5R	803016 45L	803016 45R	30"	16"
804016 22.5L	804016 22.5R	804016 45L	804016 45R	40"	16"
805016 22.5L	805016 22.5R	805016 45L	805016 45R	50"	16"



PEDESTRIAN FIBERCRETE® ANGLED FLUSH CHANNEL

CHANNEL 22.5 DEGREE LEFT	CHANNEL 22.5 DEGREE RIGHT	CHANNEL 45 DEGREE LEFT	CHANNEL 45 DEGREE LEFT	INSIDE WIDTH	INSIDE DEPTH
8010F 22.5L	8010F 22.5R	8010F 45L	8010F 45R	10"	12"
8020F 22.5L	8020F 22.5R	8020F 45L	8020F 45R	20"	12"
8024F 22.5L	8024F 22.5R	8024F 45L	8024F 45R	24"	12"
8030F 22.5L	8030F 22.5R	8030F 45L	8030F 45R	30"	12"
8040F 22.5L	8040F 22.5R	8040F 45L	8040F 45R	40"	12"
8050F 22.5L	8050F 22.5R	8050F 45L	8050F 45R	50"	12"
801016F 22.5L	801016F 22.5R	801016F 45L	801016F 45R	10"	16"
802016F 22.5L	802016F 22.5R	802016F 45L	802016F 45R	20"	16"
802416F 22.5L	802416F 22.5R	802416F 45L	802416F 45R	24"	16"
803016F 22.5L	803016F 22.5R	803016F 45L	803016F 45R	30"	16"
804016F 22.5L	804016F 22.5R	804016F 45L	804016F 45R	40"	16"
805016F 22.5L	805016F 22.5R	805016F 45L	805016F 45R	50"	16"

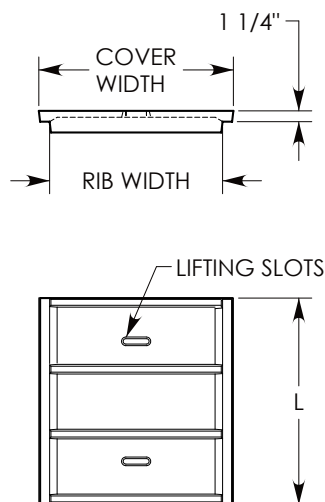
Pedestrian Channels are rated for 200 lbs./ft²

See Concast's website for drawings of pedestrian rated channel in both PDF & AutoCAD format.



Ped. Fibercrete & Polymer Covers

Trench



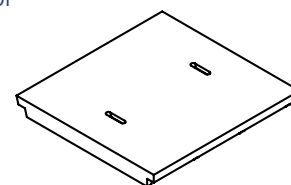
PEDESTRIAN RATED TRENCH COVERS

FIBERCRETE COVER	POLYMER COVER	RIB WIDTH*	WIDTH	LENGTH
8011	8011P	10"	12.50"	24"
8021	8021P	20"	22.50"	24"
8025	8025P	24"	26.50"	24"
8031	8031P	30"	32.50"	24"
8041	8041P	40"	42.50"	24"
NA	8051P	50"	52.50"	16"
EXAMPLES OF SPECIAL LENGTH COVERS				
8011 20"	8011P 20"	10"	12.50"	20"
8031 16"	8031P 16"	30"	32.50"	16"

Fibercrete® covers are fiber and wire reinforced; they have lifting slots cast into them for easy removal.

*Rib Width is 1/2" under corresponding channel width.

Covers can be customized via the addition of notches, special holes, or they can have bolt-down hardware added.



FIBERCRETE® PEDESTRIAN RATED ANGLED TRENCH COVERS

COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT	RIB WIDTH*	WIDTH	LENGTH
8011 22.5L	8011 22.5R	8011 45L	8011 45R	10"	12.50"	24"
8021 22.5L	8021 22.5R	8021 45L	8021 45R	20"	22.50"	24"/48"
8025 22.5L	8025 22.5R	8025 45L	8025 45R	24"	26.50"	24"/48"
8031 22.5L	8031 22.5R	8031 45L	8031 45R	30"	32.50"	24"/48"
8041 22.5L	8041 22.5R	NA	NA	40"	42.50"	48"

POLYMER PEDESTRIAN RATED ANGLED TRENCH COVERS

COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT	RIB WIDTH*	WIDTH	LENGTH
8011 22.5L	8011 22.5R	8011 45L	8011 45R	10"	12.50"	24"
8021 22.5L	8021 22.5R	8021 45L	8021 45R	20"	22.50"	24"/48"
8025 22.5L	8025 22.5R	8025 45L	8025 45R	24"	26.50"	24"/48"
8031 22.5L	8031 22.5R	8031 45L	8031 45R	30"	32.50"	24"/48"
8041 22.5L	8041 22.5R	NA	NA	40"	42.50"	48"

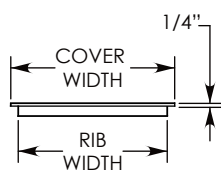
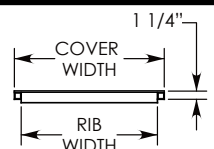
Fibercrete® Trench System



Ped. Steel & Aluminum Covers

ALUMINUM OR GALVANIZED STEEL PEDESTRIAN RATED TRENCH COVERS

Trench System

COVER END VIEWS	ALUMINUM COVER	GALV. STEEL COVER	RIB WIDTH*	WIDTH	LENGTH	HEIGHT
"A" or "SG"  <p>Use these covers in standard pedestrian trench runs with no fibercrete covers.</p>	8011A	8011SG	10"	12"	48"	0.25"
	8021A	8021SG	20"	22"	48"	0.25"
	8025A	8025SG	24"	26"	24"	0.25"
	8031A	8031SG	30"	32"	24"	0.25"
	8041A	8041SG	40"	42"	24"	0.25"
	8051A	8051SG	50"	52"	16"	0.25"
"AT" or "SGT"  <p>These covers can be interchanged with a std. Fibercrete cover, and can be used in any flush channel run.</p>	8011AT	8011SGT	10"	12"	48"	1.25"
	8021AT	8021SGT	10"	22"	48"	1.25"
	8025AT	8025SGT	24"	26"	24"	1.25"
	8031AT	8031SGT	30"	32"	24"	1.25"
	8041AT	8041SGT	40"	42"	24"	1.25"
	8051AT	8051SGT	50"	52"	16"	1.25"

BOLT-DOWN PEDESTRIAN COVERS



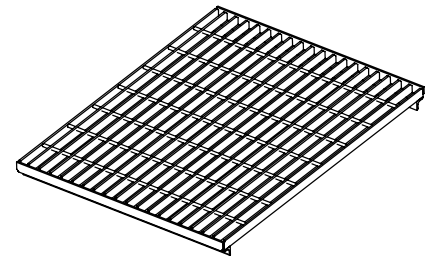
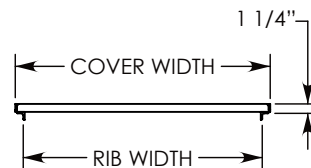
VENTILATED STEEL PED. TRENCH COVERS

VENT. COVER	RIB WIDTH*	WIDTH	LENGTH	HEIGHT
8011V	9.75"	12"	48"	1.25"
8021V	19.75"	22"	48"	1.25"
8025V	23.75"	26"	24"	1.25"
8031V	29.75"	32"	24"	1.25"
8041V	39.75"	42"	24"	1.25"
8051V	49.75"	52"	16"	1.25"

Concast's galvanized steel ventilated covers are perfect for special trench runs requiring a free air rating.

*Rib Width is 1/4" under corresponding channel width.

Covers are rated for 200 lbs./ft²



Concast's standard Fibercrete covers can be produced with a bolt-down option for added security. Covers have recessed holes in them for 3/8" diameter pentahead bolts that interface with special bracketing attached to the inside walls of the channel.

Fibercrete[®] Trench System

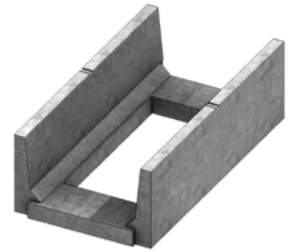
Ped. Rated PT Concrete Channels



PEDESTRIAN RATED CONCRETE PT CHANNEL

OPEN BOTTOM CHANNEL 4 ft. Long	OPEN BOTTOM CHANNEL 8 ft. Long	SOLID BOTTOM CHANNEL 4 ft. Long	SOLID BOTTOM CHANNEL 8 ft. Long	INSIDE WIDTH	INSIDE DEPTH
8020PT	8820PT	8020PTSB	8820PTSB	20"	12"
8024PT	8824PT	8024PTSB	8824PTSB	24"	12"
8030PT	8830PT	8030PTSB	8830PTSB	30"	12"
8040PT	8840PT	8040PTSB	8840PTSB	40"	12"
8050PT	8850PT	8050PTSB	8850PTSB	50"	12"
802016PT	882016PT	802016PTSB	882016PTSB	20"	16"
802416PT	882416PT	802416PTSB	882416PTSB	24"	16"
803016PT	883016PT	803016PTSB	883016PTSB	30"	16"
804016PT	884016PT	804016PTSB	884016PTSB	40"	16"
805016PT	885016PT	805016PTSB	885016PTSB	50"	16"
802024PT	882024PT	802024PTSB	882024PTSB	20"	24"
802424PT	882424PT	802424PTSB	882424PTSB	24"	24"
803024PT	883024PT	803024PTSB	883024PTSB	30"	24"
804024PT	884024PT	804024PTSB	884024PTSB	40"	24"
805024PT	885024PT	805024PTSB	885024PTSB	50"	24"

Pedestrian Channels are rated for 200 lbs./ft²



PEDESTRIAN RATED ANGLED CONCRETE PT CHANNEL

CHANNEL 22.5 DEGREE LEFT	CHANNEL 22.5 DEGREE RIGHT	CHANNEL 45 DEGREE LEFT	CHANNEL 45 DEGREE LEFT	INSIDE WIDTH	INSIDE DEPTH
8020PT 22.5L	8020PT 22.5R	8020PT 45L	8020PT 45R	20"	12"
8024PT 22.5L	8024PT 22.5R	8024PT 45L	8024PT 45R	24"	12"
8030PT 22.5L	8030PT 22.5R	8030PT 45L	8030PT 45R	30"	12"
8040PT 22.5L	8040PT 22.5R	8040PT 45L	8040PT 45R	40"	12"
8050PT 22.5L	8050PT 22.5R	8050PT 45L	8050PT 45R	50"	12"
802016PT 22.5L	802016PT 22.5R	802016PT 45L	802016PT 45R	20"	16"
802416PT 22.5L	802416PT 22.5R	802416PT 45L	802416PT 45R	24"	16"
803016PT 22.5L	803016PT 22.5R	803016PT 45L	803016PT 45R	30"	16"
804016PT 22.5L	804016PT 22.5R	804016PT 45L	804016PT 45R	40"	16"
805016PT 22.5L	805016PT 22.5R	805016PT 45L	805016PT 45R	50"	16"
802024PT 22.5L	802024PT 22.5R	802024PT 45L	802024PT 45R	20"	24"
802424PT 22.5L	802424PT 22.5R	802424PT 45L	802424PT 45R	24"	24"
803024PT 22.5L	803024PT 22.5R	803024PT 45L	803024PT 45R	30"	24"
804024PT 22.5L	804024PT 22.5R	804024PT 45L	804024PT 45R	40"	24"
805024PT 22.5L	805024PT 22.5R	805024PT 45L	805024PT 45R	50"	24"

Pedestrian Channels are rated for 200 lbs./ft²

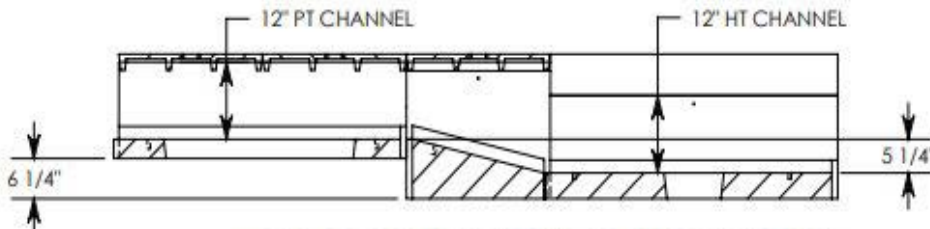
Fibercrete[®] Trench System

Trench



PT Transition Channels (PTRT)

TYPICAL RT ELEVATION DETAIL

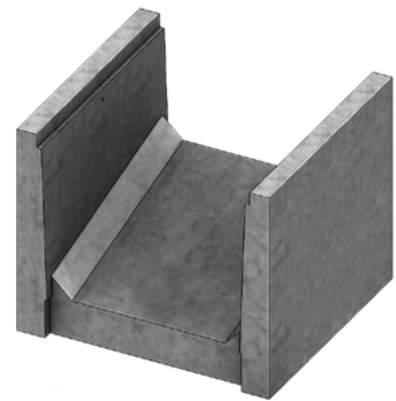


PTRT solid-bottom channels have female ends to accommodate various assembly locking configurations. These channels are utilized to create a smooth bottom transition in all layouts that have both pedestrian and traffic rated channel. Also can be used at the control house if a deeper inlet is required. These channels all have a solid bottom design.

Trench System

TRANSITION TO HT/HT6F CHANNEL

TRANSITION CHANNEL	INSIDE WIDTH	INSIDE DEPTH
8020PTRT1	20"	12"
8024PTRT1	24"	12"
8030PTRT1	30"	12"
8040PTRT1	40"	12"
8050PTRT1	50"	12"
802016PTRT1	20"	16"
802416PTRT1	24"	16"
803016PTRT1	30"	16"
804016PTRT1	40"	16"
805016PTRT1	50"	16"
802024PTRT1	20"	24"
802424PTRT1	24"	24"
803024PTRT1	30"	24"
804024PTRT1	40"	24"
805024PTRT1	50"	24"



TRANSITION TO LT/HT3/HTF CHANNEL

TRANSITION CHANNEL	INSIDE WIDTH	INSIDE DEPTH
8020PTRT2	20"	12"
8024PTRT2	24"	12"
8030PTRT2	30"	12"
8040PTRT2	40"	12"
8050PTRT2	50"	12"
802016PTRT2	20"	16"
802416PTRT2	24"	16"
803016PTRT2	30"	16"
804016PTRT2	40"	16"
805016PTRT2	50"	16"
802024PTRT2	20"	24"
802424PTRT2	24"	24"
803024PTRT2	30"	24"
804024PTRT2	40"	24"
805024PTRT2	50"	24"

Channel Options Page 22

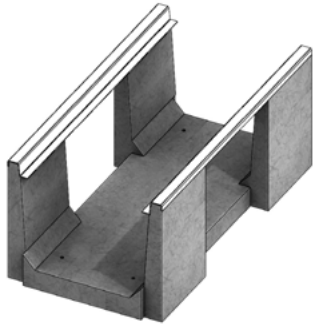
- Solid Bottom Channel
- Special Length Channel
- Elevation Changes
- Angled Channel
- Complex Intersections

See Concast's website for drawings of pedestrian rated PT channel in both PDF & AutoCAD format.

PT Universals & PT End Plates



Trench



Universal PT channels are shipped with removable aluminum cover supports mounted to the top ledges.

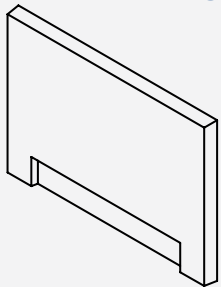
Openings are centered on the sides, but can be offset if necessary.

PEDESTRIAN RATED FIBERCRETE® UNIVERSAL PT CHANNELS						
OPENINGS IN BOTH SIDEWALLS	OPENINGS IN ONE SIDEWALL	INSIDE WIDTH	INSIDE DEPTH	LENGTH "L"	OPENING "A"	OPENING "B"
8022PT (20X20)	8022PT (0X20)	20"	12"	48"	20"/None	20"
8026PT (24X24)	8026PT (0X24)	24"	12"	48"	24"/None	24"
8032PT (30X30)	8032PT (0X30)	30"	12"	48"	30"/None	30"
8042PT (40X40)	8042PT (0X40)	40"	12"	48"	40"/None	40"
8852PT (50X50)	8852PT (0X50)	50"	12"	96"	50"/None	50"
802216PT (20X20)	802216PT (0X20)	20"	16"	48"	20"/None	20"
802616PT (24X24)	802616PT (0X24)	24"	16"	48"	24"/None	24"
803216PT (30X30)	803216PT (0X30)	30"	16"	48"	30"/None	30"
804216PT (40X40)	804216PT (0X40)	40"	16"	48"	40"/None	40"
885216PT (50X50)	885216PT (0X50)	50"	16"	96"	50"/None	50"
802224PT (20X20)	802224PT (0X20)	20"	16"	48"	20"/None	20"
802624PT (24X24)	802624PT (0X24)	24"	16"	48"	24"/None	24"
803224PT (30X30)	803224PT (0X30)	30"	16"	48"	30"/None	30"
804224PT (40X40)	804224PT (0X40)	40"	16"	48"	40"/None	40"
885224PT (50X50)	885224PT (0X50)	50"	16"	96"	50"/None	50"
EXAMPLES OF NON-STANDARD UNIVERSAL CHANNELS						
8022PT (20X20)	8022FPT (20X20)	20"	12"	48"	20"	20"
803216PT (0X30)	803216FPT (0X20)	30"	16"	48"	None	30"

Universal channels can be used to make tees, ells, or crosses. They can also be used to form a smooth transition from one width trench to another. The channel has a solid bottom for additional strength. There is such a large number of universal channel configurations, that only a few are depicted in the tables. To obtain the correct part number, refer to the diagram and apply the appropriate numbers. More information is available on the Concast website.

PT END PLATE	PT CHNL WIDTH	PT CHNL DEPTH
8023PT	20"	12"
8027PT	24"	12"
8033PT	30"	12"
8043PT	40"	12"
8053PT	50"	12"
802316PT	20"	16"
802716PT	24"	16"
803316PT	30"	16"
804316PT	40"	16"
805316PT	50"	16"
802324PT	20"	24"
802724PT	24"	24"
803324PT	30"	24"
804324PT	40"	24"
805324PT	50"	24"

PEDESTRIAN PT END PLATES



End plates are used to close up unused universal channel openings, and also to terminate trench runs. These end plates are designed to fit Concast's pedestrian rated PT channels; and are available in all standard channel widths.

Fibercrete® Trench System



Trench Partition Boards

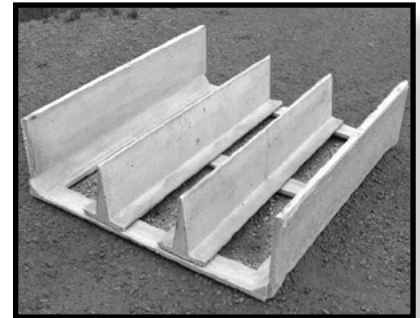
FREE STANDING PARTITION BOARDS

Partition boards provide physical separation of cables in Concast trench channel. The most often used design is part number 8001; it has a wide base and is free-standing. The 8001-6B and the 3.5" wide base boards are designed for narrower trench channels or channels requiring multiple separations.

BOLT-DOWN PARTITION BOARDS

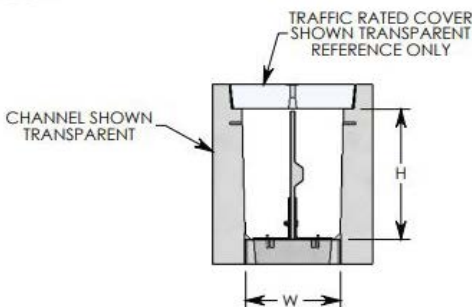
The 3.5" wide & 9.5" wide base boards are typically secured with provided hardware. The 9.5" wide base boards can be free-standing in some instances.

The boards that are XX.5" tall are designed to allow clearance for cover ribs such as those seen in pedestrian rated covers. HT or HT3 series covers do not have ribs, and will use the XX.75" tall boards for full height separation.



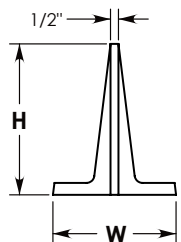
Trench System

PARTITION BOARD 4 FT LONG	PARTITION BOARD 8 FT LONG	HEIGHT & BASE (Inches)	FITS 8" DEEP CHANNEL	FITS 12" DEEP CHANNEL	FITS 16" DEEP CHANNEL	FITS 24" DEEP CHANNEL	FITS 36" DEEP CHANNEL
8001		9.5 X 7.75		✓	✓	✓	✓
8001-6B		9.5 X 6		✓	✓	✓	✓
800108-3.5	880108-3.5	7.75 x 3.5	✓	✓	✓	✓	✓
800108-9.5	880108-9.5	7.75 x 9.5	✓	✓	✓	✓	✓
800110.5-3.5	880110.5-3.5	10.5 x 3.5		✓	✓	✓	✓
800110.5-9.5	880110.5-9.5	10.5 x 9.5		✓	✓	✓	✓
800112-3.5	880112-3.5	11.75 X 3.5		✓	✓	✓	✓
800112-9.5	880112-9.5	11.75 X 3.5		✓	✓	✓	✓
800114.5-3.5	880114.5-3.5	14.5 X 3.5			✓	✓	✓
800114.5-9.5	880114.5-9.5	14.5 X 9.5			✓	✓	✓
800116-3.5	880116-3.5	15.75 X 3.5			✓	✓	✓
800116-9.5	880116-9.5	15.75 X 9.5			✓	✓	✓
800122.5-3.5	880122.5-3.5	22.5 X 3.5				✓	✓
800122.5-9.5	880122.5-9.5	22.5 X 9.5				✓	✓
800124-3.5	880124-3.5	23.75 X 3.5				✓	✓
800124-9.5	880124-9.5	23.75 X 9.5				✓	✓
800136-3.5	880136-3.5	35.75 x 3.5					✓
800136-9.5	880136-9.5	35.75 x 9.5					✓

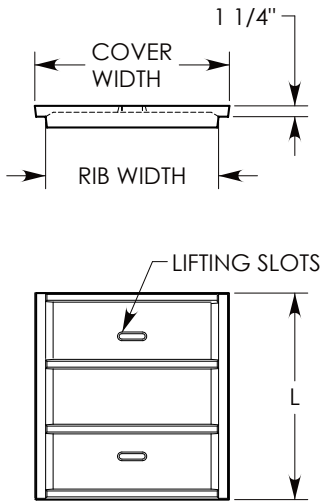


See Website for 8 foot long partition board part numbers & drawings in pdf format

https://www.concastinc.com/Trench_Systems/Trench_Accessories/partition_board/index.php



Fibercrete® Trench System



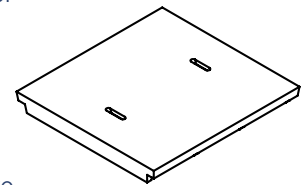
PEDESTRIAN RATED TRENCH COVERS

FIBERCRETE COVER	POLYMER COVER	RIB WIDTH*	WIDTH	LENGTH
8021PT	8021PTP	21.75"	26"	24"
8025PT	8025PTP	25.75"	30"	24"
8031PT	8031PTP	31.75"	36"	24"
8041PT	8041PTP	41.75"	46"	24"
8051PT	8051PTP	51.75"	56"	16"
EXAMPLES OF SPECIAL LENGTH COVERS				
8021PT 20"	8021PTP 20"	21.75"	26"	20"
8031PT 16"	8031PTP 16"	31.75"	36"	16"

Fibercrete® covers are fiber and wire reinforced; they have lifting slots cast into them for easy removal.

*Rib Width is 1/4" under corresponding channel width.

Covers can be customized via the addition of notches, special holes, or they can have bolt-down hardware added.



FIBERCRETE® PEDESTRIAN RATED ANGLED PT TRENCH COVERS

COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT	RIB WIDTH*	WIDTH	LENGTH
8021PT 22.5L	8021PT 22.5R	8021PT 45L	8021PT 45R	21.75"	26"	24"/48"
8025PT 22.5L	8025PT 22.5R	8025PT 45L	8025PT 45R	25.75"	30"	24"/48"
8031PT 22.5L	8031PT 22.5R	8031PT 45L	8031PT 45R	31.75"	36"	24"/48"
8041PT 22.5L	8041PT 22.5R	NA	NA	41.75"	46"	48"

POLYMER PEDESTRIAN RATED ANGLED PT TRENCH COVERS

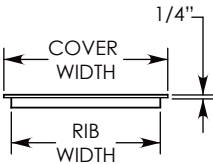
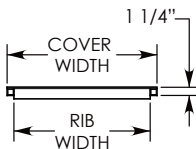
COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT	RIB WIDTH*	WIDTH	LENGTH
8021PTP 22.5L	8021PTP 22.5R	8021PTP 45L	8021PTP 45R	21.75"	26"	24"/48"
8025PTP 22.5L	8025PTP 22.5R	8025PTP 45L	8025PTP 45R	25.75"	30"	24"/48"
8031PTP 22.5L	8031PTP 22.5R	8031PTP 45L	8031PTP 45R	31.75"	36"	24"/48"
8041PTP 22.5L	8041PTP 22.5R	NA	NA	41.75"	46"	48"

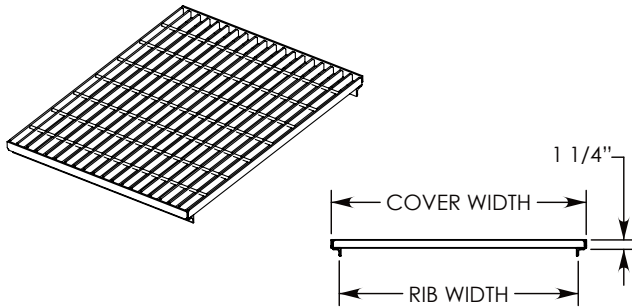
See Concast's website for drawings of pedestrian rated PT covers in both PDF format.

Ped. Steel & Aluminum PT Covers



ALUMINUM OR GALVANIZED STEEL PED. RATED PT TRENCH COVERS

COVER END VIEWS	ALUMINUM COVER	GALV. STEEL COVER	RIB WIDTH*	WIDTH	LENGTH	HEIGHT
"PTA" or "PTSG" Use these covers in standard pedestrian trench runs with no fibercrete covers. 	8021PTA	8021PTSG	21.5"	26"	48"	0.25"
	8025PTA	8025PTSG	25.5"	30"	24"/48"	0.25"
	8031PTA	8031PTSG	31.5"	36"	24"/48"	0.25"
	8041PTA	8041PTSG	41.5"	46"	48"/72"	0.25"
	8051PTA	8051PTSG	51.5"	56"	48"/72"	0.25"
"PTAT" or "PTSGT" These covers can be interchanged with a std. Fibercrete cover, and can be used in any flush channel run. 	8021PTAT	8021PTSGT	21.5"	26"	48"	1.25"
	8025PTAT	8025PTSGT	25.5"	30"	24"/48"	1.25"
	8031PTAT	8031PTSGT	31.5"	36"	24"/48"	1.25"
	8041PTAT	8041PTSGT	41.5"	46"	48"/72"	1.25"
	8051PTAT	8051PTSGT	51.5"	56"	48"/72"	1.25"



VENTILATED STEEL PED. TRENCH PT COVERS

VENT. COVER	RIB WIDTH*	WIDTH	LENGTH	HEIGHT
8021PTV	21.75"	26"	48"	1.25"
8025PTV	25.75"	30"	24"	1.25"
8031PTV	31.75"	36"	24"	1.25"
8041PTV	41.75"	46"	24"	1.25"
8051PTV	51.75"	56"	16"	1.25"

Concast's galvanized steel ventilated covers are perfect for special trench runs requiring a free air rating.

*Rib Width is 1/4" under corresponding channel width.

Covers are rated for 200 lbs./ft²

VENTILATED STEEL GALV. PEDE. RATED ANGLED PT TRENCH COVERS

COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT	RIB WIDTH*	WIDTH	LENGTH
8021PTV 22.5L	8021PTV 22.5R	8021PTV 45L	8021PTV 45R	21.75"	26"	48"
8025PTV 22.5L	8025PTV 22.5R	8025PTV 45L	8025PTV 45R	25.75"	30"	48"
8031PTV 22.5L	8031PTV 22.5R	8031PTV 45L	8031PTV 45R	31.75"	36"	48"
8041PTV 22.5L	8041PTV 22.5R	NA	NA	41.75"	46"	48"

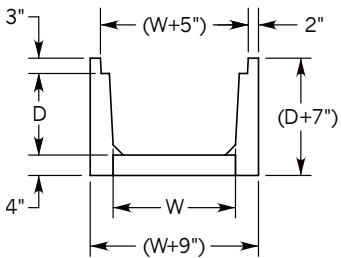
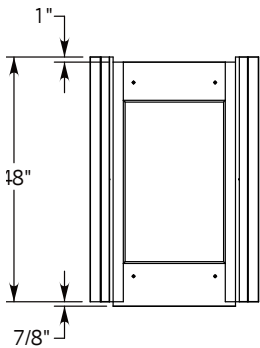
Concast's standard Fibercrete covers can be produced with a bolt-down option for added security. Covers have recessed holes in them for 3/8" diameter pentahead bolts that interface with special bracketing attached to the inside walls of the channel.

Light Traffic H-10 (LT) Trench



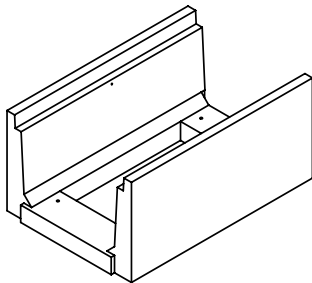
LIGHT TRAFFIC H-10 RATED (LT)

Trench



CHANNEL 4 foot long Steel Top Rail	CHANNEL 4 foot long FRP Top Rail	CHANNEL 8 foot long Steel Top Rail	CHANNEL 8 foot long FRP Top Rail	INSIDE WIDTH "W"	INSIDE DEPTH "D"
8010LT	LTF1012 48"	8810LT	LTF1012	10"	12"
8020LT	LTF2012 48"	8820LT	LTF2012	20"	12"
8024LT	LTF2412 48"	8824LT	LTF2412	24"	12"
8030LT	LTF3012 48"	8830LT	LTF3012	30"	12"
8040LT	LTF4012 48"	8840LT	LTF4012	40"	12"
801016LT	LTF1016 48"	881016LT	LTF1016	10"	16"
802016LT	LTF2016 48"	882016LT	LTF2016	20"	16"
802416LT	LTF2416 48"	882416LT	LTF2416	24"	16"
803016LT	LTF3016 48"	883016LT	LTF3016	30"	16"
804016LT	LTF4016 48"	884016LT	LTF4016	40"	16"
801024LT	LTF1024 48"	881024LT	LTF1024	10"	24"
802024LT	LTF2024 48"	882024LT	LTF2024	20"	24"
802424LT	LTF2424 48"	882424LT	LTF2424	24"	24"
803024LT	LTF3024 48"	883024LT	LTF3024	30"	24"
804024LT	LTF4024 48"	884024LT	LTF4024	40"	24"

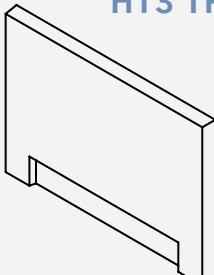
- LT Channels are steel reinforced to meet AASHTO-H-10 light Equipment requirement of 16,000 Lbs. per axle load.
- An HT3 universal channel is generally used wherever an ell, tee, or cross is needed in a trench run. An example of an LT/HT3 universal P/N is 8022HT3 (0X20).
- An HT3 angled channel is generally used wherever an angle in the trench run is required. IE: 8020HT3 22.5L
- Four 1/2" dia. threaded inserts are cast into the floor of the channel for lifting. It is recommended to use these in conjunction with a swivel hoist ring (Concast P/N: 9002) and 4-Way lifting chain (Concast P/N: 9003).



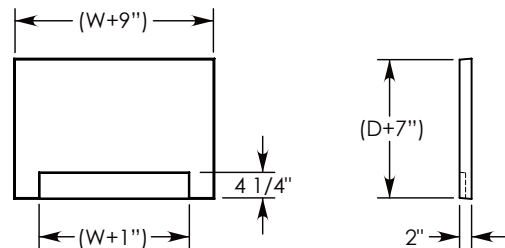
Channel Options
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Solid Bottom Channel
Special Length Channel
Elevation Changes
Angled Channel
Complex Intersections

HT3 TRENCH END PLATES



End plates are used to close up unused universal channel openings, and also to terminate trench runs. These end plates are designed to fit Concast's light traffic rated LT & HT3 channels; and are available in all standard channel widths.

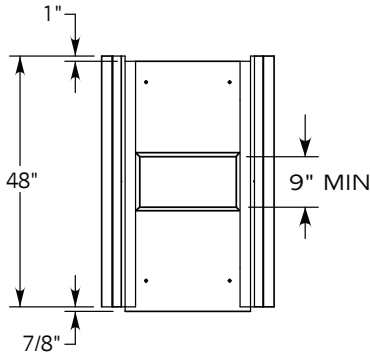


Fibercrete[®] Trench System

Heavy Traffic H-40 (HT3/HTF/HT4/HT4F)

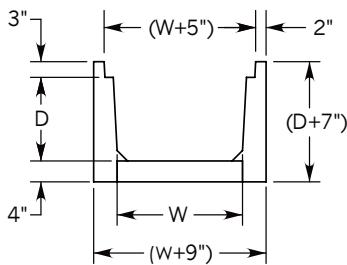


H-40 HEAVY TRAFFIC CHANNEL FOR 2" THICK COVERS

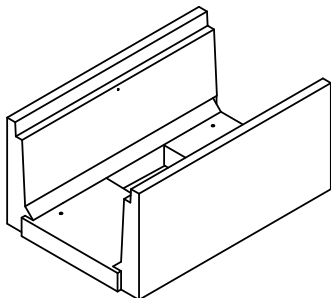


CHANNEL 4 foot long Steel Top Rail	CHANNEL 4 foot long FRP Top Rail	CHANNEL 8 foot long Steel Top Rail	CHANNEL 8 foot long FRP Top Rail	INSIDE WIDTH "W"	INSIDE DEPTH "D"
HT0608 48"	HTF0608 48"	HT0608	HTF0608	6"	8"

H-20 HEAVY TRAFFIC CHANNEL FOR 3" THICK COVERS



CHANNEL 4 foot long Steel Top Rail	CHANNEL 4 foot long FRP Top Rail	CHANNEL 8 foot long Steel Top Rail	CHANNEL 8 foot long FRP Top Rail	INSIDE WIDTH "W"	INSIDE DEPTH "D"
8010HT3	HTF1012 48"	8810HT3	HTF1016	10"	12"
HT1208 48"	HTF1208 48"	HT1208	HTF1208	20"	12"
8020HT3	HTF2012 48"	8820HT3	HTF2016	12"	8"
8024HT3	HTF2412 48"	8824HT3	HTF2416	24"	12"
8030HT3	HTF3012 48"	8830HT3	HTF3016	30"	12"
8040HT3	HTF4012 48"	8840HT3	HTF4016	40"	12"
801016HT3	HTF1016 48"	881016HT3	HTF1016	10"	16"
HT1216 48"	HTF1216 48"	HT1216	HTF1216	12"	16"
802016HT3	HTF2016 48"	882016HT3	HTF2016	20"	16"
802416HT3	HTF2416 48"	882416HT3	HTF2416	24"	16"
803016HT3	HTF3016 48"	883016HT3	HTF3016	30"	16"
804016HT3	HTF4016 48"	884016HT3	HTF4016	40"	16"
801024HT3	HTF1024 48"	881024HT3	HTF1024	10"	24"
802024HT3	HTF2024 48"	882024HT3	HTF2024	20"	24"
802424HT3	HTF2424 48"	882424HT3	HTF2424	24"	24"
803024HT3	HTF3024 48"	883024HT3	HTF3024	30"	24"
804024HT3	HTF4024 48"	884024HT3	HTF4024	40"	24"
802036HT3	HTF2036 48"	882036HT3	HTF2036	20"	36"
802436HT3	HTF2436 48"	882436HT3	HTF2436	24"	36"
803036HT3	HTF3036 48"	883036HT3	HTF3036	30"	36"
804036HT3	HTF4036 48"	884036HT3	HTF4036	40"	36"



- These Concrete Channels are steel & fiber reinforced to meet AASHTO-H-20 Heavy Equipment requirement of 32,000 lb./axle load.
- Four 1/2" dia. threaded inserts are cast into the floor of the channel for lifting. It is recommended to use these in conjunction with a swivel hoist ring (Concast P/N: 9002) and 4-Way lifting chain (Concast P/N: 9003).

H-20 HEAVY TRAFFIC CHANNEL FOR 4" THICK COVERS

CHANNEL 4 foot long Steel Top Rail	CHANNEL 4 foot long FRP Top Rail	CHANNEL 8 foot long Steel Top Rail	CHANNEL 8 foot long FRP Top Rail	INSIDE WIDTH "W"	INSIDE DEPTH "D"
8020HT4	HT4F2012 48"	8820HT4	HT4F2016	20"	12"
802016HT4	HT4F2016 48"	882016HT4	HT4F2016	20"	16"
802024HT4	HT4F2024 48"	882024HT4	HT4F2024	20"	24"
802036HT4	HT4F2036 48"	882036HT4	HT4F2036	20"	24"

Covers for LT & HT3/HTF/HTC Trench H-20



Trench

CONCRETE H-20 COVERS

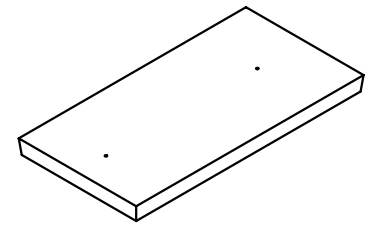
48"

Ø 3/8" THREADED INSERT (2X)

3"

W

GALV. STEEL COVER	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
HTC06	8.63"	48"	2"	H-20
8011HT3	14.88"	48"	3"	H-20
8011HT3 24"	14.88"	24"	3"	H-20
8021HT3	24.88"	48"	3"	H-20
8021HT3 16"	24.88"	16"	3"	H-20
8021HT3 24"	24.88"	24"	3"	H-20
8025HT3	28.88"	48"	3"	H-20
8025HT3 16"	28.88"	16"	3"	H-20
8025HT3 24"	28.88"	24"	3"	H-20
8031HT3	34.88"	48"	3"	H-20
8031HT3 16"	34.88"	16"	3"	H-20
8031HT3 24"	34.88"	24"	3"	H-20
EXAMPLES OF SPECIAL LENGTH COVERS				
8011HT3 30"	14.88"	30"	3"	H-20
8031HT3 14"	34.88"	14"	3"	H-20



- See the website at <https://concastinc.com> to get more detail on these covers
- Polymer Covers have lifting slots for easy removal.
- Concrete covers have cast-in threaded inserts for lifting

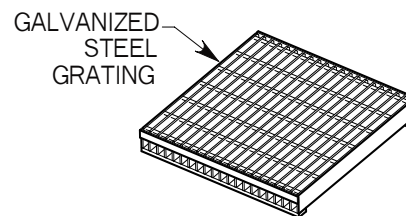


HEAVY TRAFFIC RATED			
POLYMER COVER	WIDTH	LENGTH	HEIGHT
HTCP06	8.75"	24"	2"
HTCP06 24"	8.63"	24"	2"
8011HT3P	14.88"	48"	3"
8021HT3P	24.88"	24"	3"
8025HT3P	28.88"	24"	3"
8031HT3P	34.88"	24"	3"
8041HT3P 16"	44.88"	16"	3"

ANGLED HEAVY TRAFFIC RATED POLYMER COVERS			
COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT
HTCP06 22.5L	HTCP06 22.5R	HTCP06 45L	HTCP06 45R
8011HT3P 22.5L	8011HT3P 22.5R	8011HT3P 45L	8011HT3P 45R
8021HT3P 22.5L	8021HT3P 22.5R	8021HT3P 45L	8021HT3P 45R
8025HT3P 22.5L	8025HT3P 22.5R	8025HT3P 45L	8025HT3P 45R
8031HT3P 22.5L	8031HT3P 22.5R	8031HT3P 45L	8031HT3P 45R

VENTILATED STEEL HTSGV H-20 COVERS

VENT. COVER	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
HTCV06	8.75"	48"	2"	H-20
HTCV06 24"	8.75"	24"	2"	H-20
8011HTSGV	14.75"	48"	3"	H-20
8021HTSGV	24.75"	24"	3"	H-20
8025HTSGV	28.75"	24"	3"	H-20
8031HTSGV	34.75"	24"	3"	H-20
8041HTSGV	44.75"	24"	3"	H-20



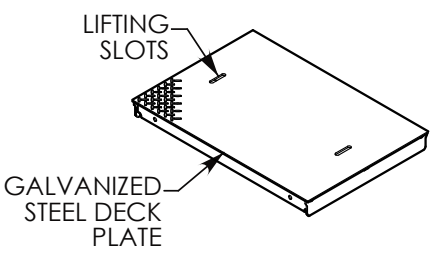
Concast's galvanized steel ventilated covers are perfect for Light Traffic & Heavy Traffic trench runs requiring a free air rating.

Fibercrete[®] Trench System

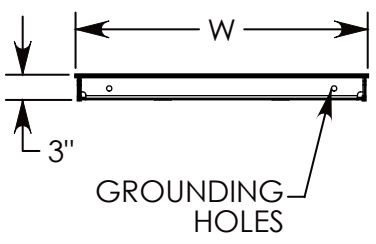
Covers for HT3/HTF/HTC Trench H-40



GALVANIZED STEEL HEAVY TRAFFIC HTSG TRENCH COVERS



GALV. STEEL COVER	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
HTCSG06	8.63"	48"	2"	H-40
HTCSG06 24"	8.63"	24"	2"	H-40
8011HTSG	14.88"	48"	3"	H-40
8021HTSG	24.88"	24"	3"	H-40
8025HTSG	28.88"	24"	3"	H-40
8031HTSG	34.88"	24"	3"	H-40
8041HTSG	44.88"	24"	3"	H-40



Channel Options
Page 22

- Solid Bottom Channel
- Special Length Channel
- Elevation Changes
- Angled Channel
- Complex Intersections

ANGLED H-20 & H-40 RATED GALVANIZED STEEL COVERS							
COVER 22.5 DEGREE LEFT	COVER 22.5 DEGREE RIGHT	COVER 45 DEGREE LEFT	COVER 45 DEGREE RIGHT	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
HTCSG06 22.5L	HTCSG06 22.5R	HTCSG06 45L	HTCSG06 45R	14.75"	48"	2"	H-40
8011HTSG 22.5L	8011HTSG 22.5R	8011HTSG 45L	8011HTSG 45R	14.75"	48"	3"	H-40
8021HTSG 22.5L	8021HTSG 22.5R	8021HTSG 45L	8021HTSG 45R	24.75"	24"/48"	3"	H-40
8025HTSG 22.5L	8025HTSG 22.5R	8025HTSG 45L	8025HTSG 45R	28.75"	24"/48"	3"	H-40/H-20
8031HTSG 22.5L	8031HTSG 22.5R	8031HTSG 45L	8031HTSG 45R	34.75"	24"/48"	3"	H-20
8041HTSG 22.5L	8041HTSG 22.5R	8041HTSG 45L	8041HTSG 45R	44.75"	48"/72"	3"	H-20

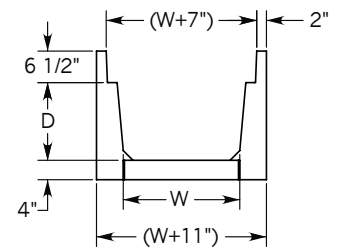
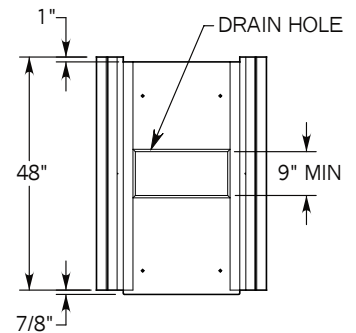
See Concast's website for drawings of H-20 rated 3" thick covers in both PDF format.

Heavy Traffic H-40 (HT) Trench

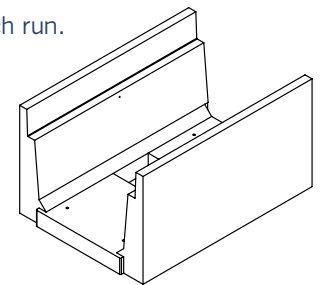


HEAVY TRAFFIC (HT) CHANNEL - USES 6.5" THICK COVERS

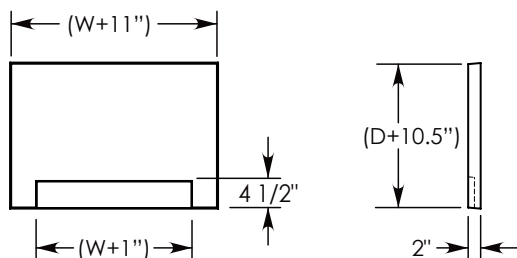
CHANNEL 4 foot long Steel Top Rail	CHANNEL 4 foot long FRP Top Rail	CHANNEL 8 foot long Steel Top Rail	CHANNEL 8 foot long FRP Top Rail	INSIDE WIDTH "W"	INSIDE DEPTH "D"	MAX TRAFFIC RATING
8010HT	HT6F1012 48"	8810HT	HT6F1012	10"	12"	H-40
8020HT	HT6F2012 48"	8820HT	HT6F2012	20"	12"	H-40
8024HT	HT6F2412 48"	8824HT	HT6F2412	24"	12"	H-40
8030HT	HT6F3012 48"	8830HT	HT6F3012	30"	12"	H-40
8040HT	HT6F4012 48"	8840HT	HT6F4012	40"	12"	H-40
8050HT	HT6F5012 48"	8850HT	HT6F5012	50"	12"	H-40
801016HT	HT6F1016 48"	881016HT	HT6F1016	10"	16"	H-40
802016HT	HT6F2016 48"	882016HT	HT6F2016	20"	16"	H-40
802416HT	HT6F2416 48"	882416HT	HT6F2416	24"	16"	H-40
803016HT	HT6F3016 48"	883016HT	HT6F3016	30"	16"	H-40
804016HT	HT6F4016 48"	884016HT	HT6F4016	40"	16"	H-40
805016HT	HT6F5016 48"	885016HT	HT6F5016	50"	16"	H-40
801024HT	HT6F1024 48"	881024HT	HT6F1024	10"	24"	H-40
802024HT	HT6F2024 48"	882024HT	HT6F2024	20"	24"	H-40
802424HT	HT6F2424 48"	882424HT	HT6F2424	24"	24"	H-40
803024HT	HT6F3024 48"	883024HT	HT6F3024	30"	24"	H-40
804024HT	HT6F4024 48"	884024HT	HT6F4024	40"	24"	H-40
805024HT	HT6F5024 48"	885024HT	HT6F5024	50"	24"	H-40



- See page 17 for more H-40 rated channels that use 2 inch, 3 inch & 4 inch thick covers.
- HT Channels are steel reinforced to meet AASHTO-H-40 Heavy Equipment requirement of 64,000 lb./axle load..
- An HT universal channel is generally used wherever an ell, tee, or cross is needed in an HT trench run.
- Two special angled channels can be used for any degree angle change in the run.
- Four 1/2" dia. threaded inserts are cast into the floor of the channel for lifting.



See Concast's website for drawings of Heavy Traffic rated channels in both PDF & AutoCAD format.



HT TRENCH END PLATES

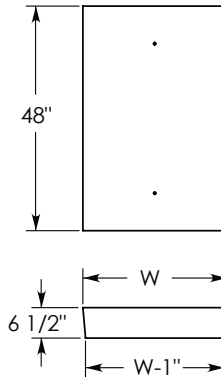
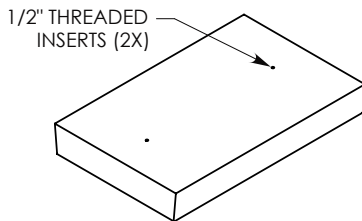
End plates are used to close up unused universal channel openings, and also to terminate trench runs. These end plates are designed to fit Concast's heavy traffic rated HT channels; and are available in all standard channel widths.

Fibercrete® Trench System



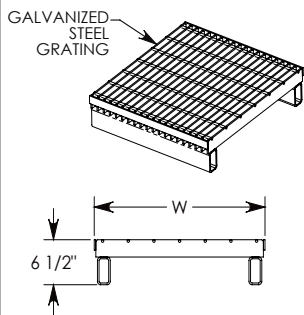
Covers for HT Trench H-20 & H-40

See website for more details; including drawings of HT Heavy Traffic rated precast trench system components such as universal channel & covers in both PDF and Auto-CAD format.



CONCRETE COVER	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
8011HT	16.63"	48"	6.5"	H-40
8021HT	26.63"	48"	6.5"	H-40
8025HT	30.63"	48"	6.5"	H-40
8031HT	36.63"	48"	6.5"	H-40
8041HT	46.63"	48"	6.5"	H-40
8051HT	56.63"	48"	6.5"	H-40

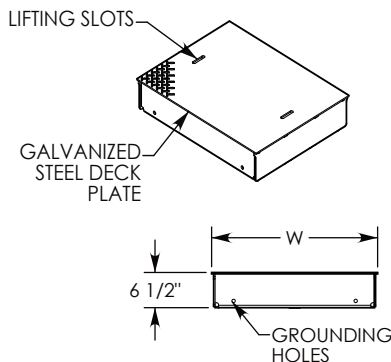
VENTILATED GALV. STEEL HTV TRENCH COVERS



VENTILATED COVER	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
8011HTV	16.63"	24"	6.5"	H-20
8021HTV	26.63"	24"	6.5"	H-20
8025HTV	30.63"	24"	6.5"	H-20
8031HTV	36.63"	24"	6.5"	H-20
8041HTV	46.63"	24"	6.5"	H-20
8051HTV	56.63"	24"	6.5"	H-20

- All HT & HTSG40 Heavy Traffic covers are H-40 rated at 64,000 lb./axle load.
- All HTV Ventilated Heavy Traffic covers are H-20 rated at 32,000 lb./axle load.
- Concrete covers have two 1/2" diameter threaded inserts cast into the top surface for mechanical lifting.
- Galvanized steel ventilated HTV covers are great for H-20 rated trench runs requiring a free air rating.

GALVANIZED STEEL HEAVY TRAFFIC HTSG40 TRENCH COVERS



GALV. STEEL COVER	WIDTH	LENGTH	HEIGHT	TRAFFIC RATING
8011HTSG40	16.63"	48"	6.5"	H-40
8021HTSG40	26.63"	24"	6.5"	H-40
8025HTSG40	30.63"	24"	6.5"	H-40
8031HTSG40	36.63"	24"	6.5"	H-40
8041HTSG40	46.63"	24"	6.5"	H-40
8051HTSG40	56.63"	24"	6.5"	H-40

HTSG40 covers are rated for 64,000 lbs./axle load

HTSG40 COVER FACTS

- All HTSG40 Heavy Traffic covers are H-40 rated at 64,000 lbs./axle load.
- The galvanized steel HTSG40 covers are the only Concast covers with an H-40 rating.
- HT-40 rated trench system uses standard HT end plates.
- These covers can be maneuvered with Concast's heavy lifting tool (P/N: 8000L or 9001-T).

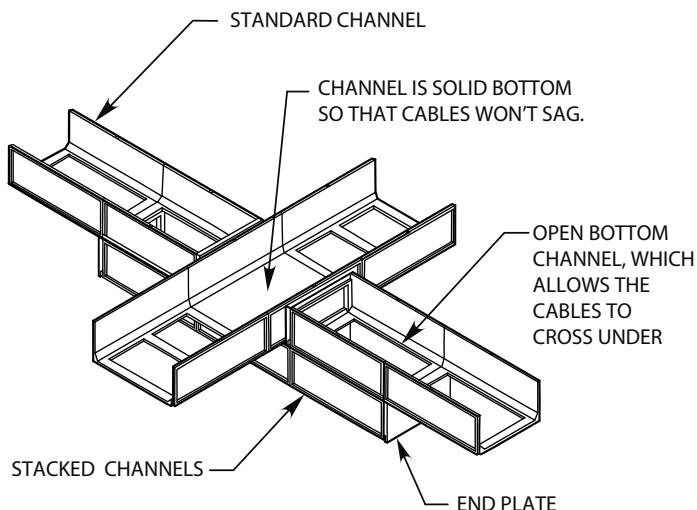


Trench System Layout Options

Trench

CROSS-OVERS & CROSS-UNDERS

When trench runs meet, a cross-over or cross-under can be used to keep cables separated if needed.



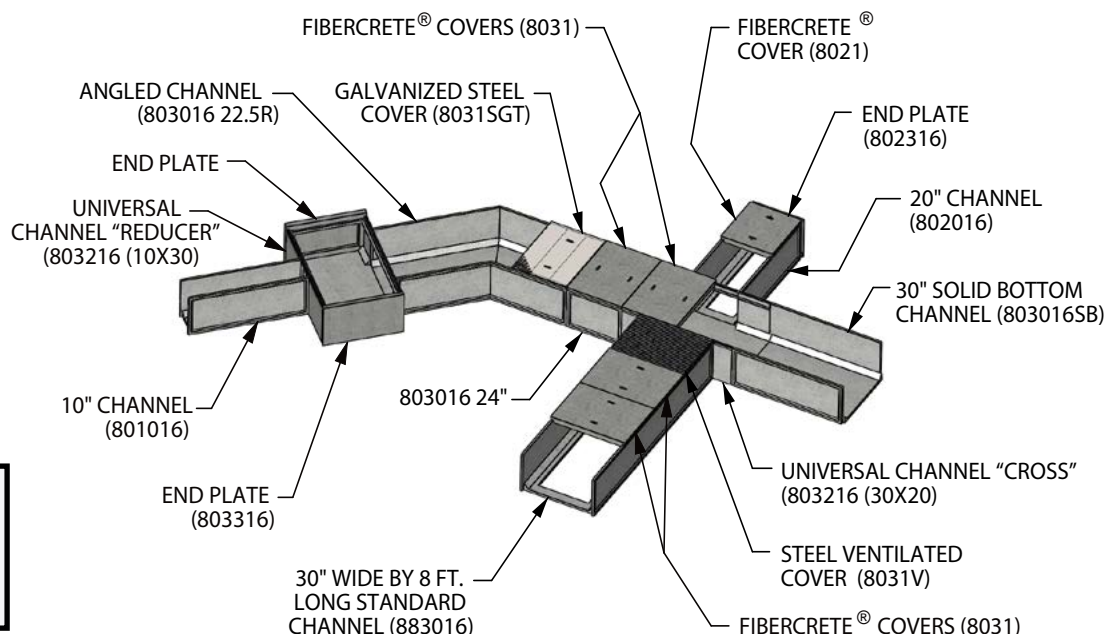
CUSTOM ELEVATION CHANGE CHANNELS

ANY ANGLE

Each special channel is named (SP), marked, and the layout drawings show exactly where each channel is located in relation to each other. Note that custom covers are usually supplied to match each special (SP) channel.

Concast pedestrian rated channels can be stacked with the help of trench support frames. Special cover supports are also available for instances where part of the channel needs to remain open etc.

TRENCH SYSTEM OPTIONS ILLUSTRATION



- Solid bottom channel is part numbered with an "SB" suffix. IE:8020LT SB is a Light Traffic channel with a solid bottom. Solid bottom channels have no openings in the base of the unit.
- Special length channels are under 8 feet long. The length designation is appended to the standard part number. IE:803016 24" is a pedestrian channel that is 24 inches long. Special length channels often have a solid bottom.
- Angled channels can be provided for trench runs with horizontal or vertical deviations. These channels and their angled covers are usually named by Concast per job.
- Universal channels are often used for any sort of 90 degree trench run change. They can also be used as channel reducers.

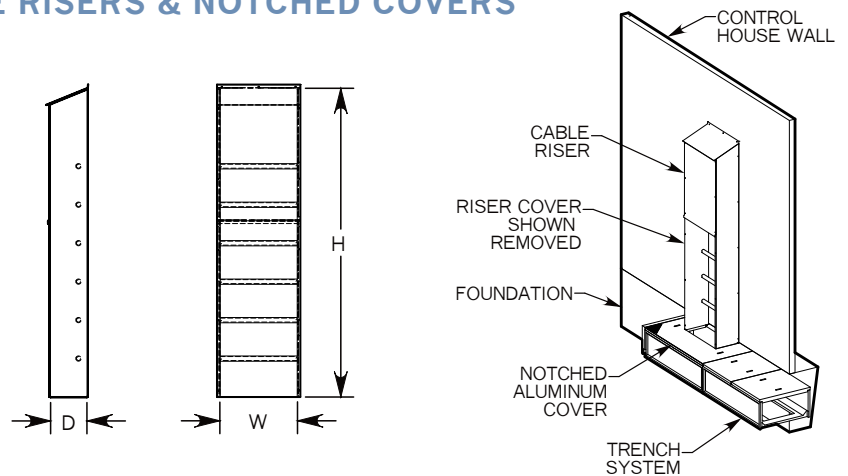


Trench System Cable Risers

ALUMINUM CABLE RISERS & NOTCHED COVERS

CABLE RISER PART NUMBERS

CABLE RISER	INSIDE	INSIDE DEPTH "D"	RISER HEIGHT "H"
CR-10-8-96	10"	8"	96"
CR-10-8-120	10"	8"	120"
CR-10-12-96	10"	12"	96"
CR-10-12-120	10"	12"	120"
CR-10-18-120	10"	18"	120"
CR-20-12-96	20"	12"	96"
CR-20-12-120	20"	12"	120"
CR-20-18-120	20"	18"	120"
CR-24-12-96	24"	12"	96"
CR-24-12-120	24"	12"	120"
CR-24-18-120	24"	18"	120"
CR-30-12-96	30"	12"	96"
CR-30-12-120	30"	12"	120"
CR-30-18-120	30"	18"	120"
CR-20-12-96	20"	12"	96"
CR-20-12-120	20"	12"	120"
CR-20-18-120	20"	18"	120"
CR-50-12-96	50"	12"	96"
CR-50-12-120	50"	12"	120"
CR-50-18-120	50"	18"	120"



Trench System

Cable risers are generally used to facilitate vertical cabling from Concast channel or a pull box to an elevated point in a control building. This usually requires an opening in the channel cover. Concast recommends using their light-weight, aluminum bases in conjunction with a section of pedestrian rated Concast trench for optimum post-installation field accessibility. The charts list only a few of the available sizes; many other sizes of risers and covers are available upon request. They may also be constructed from galvanized steel if desired.

Examples of Riser Notched Ped. Cover Part Numbers

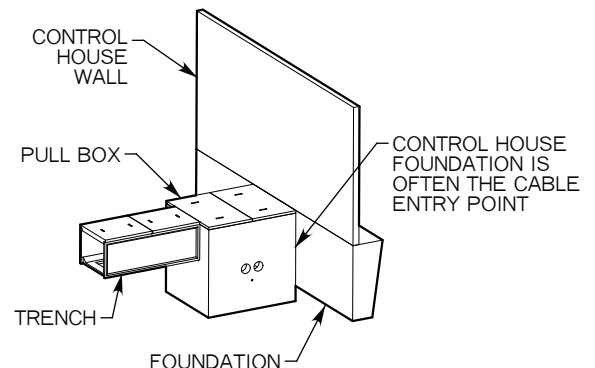
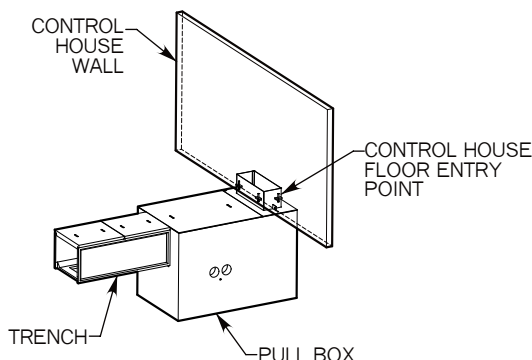
ALUM. NOTCHED COVER PART NO.	RIB	COVER LENGTH	NOTCH DIMS	CORRESPONDING CABLE RISER**
8021ATN (22X12)	20"	48"	22" x 12"	CR-20-12-XX
8025ATN (22X18)	24	48"	22" X 18"	CR-20-18-XX
8031ATN (32X18)	30"	48"	32" x 18"	CR-30-18-XX
8031ATN (42X12)	30"	48"	42" x 12"	CR-20-12-XX
8041ATN (42X18)	20"	48"	42" x 18"	CR-20-18-XX

*Rib width corresponds to channel inside width.

**Covers are designed to fit around designated risers.

Concast offers pull boxes for use with their trench system. Pull boxes can be used for grade changes, cross-overs, cross-unders, and next to control buildings with or without cable risers. They can stand alone in other substation applications too. See the pull box section of this catalog and www.concastinc.com for more detail.

PULL BOX TO CONTROL HOUSE INTERFACE OPTIONS



Fibercrete® Trench System



Trench System Accessories

Trench

ALUMINUM TRENCH SUPPORT



Used for stacking Fibercrete® pedestrian channels vertically. Stacking typically occurs where the cabling must be routed to different elevations. Concast will work with you

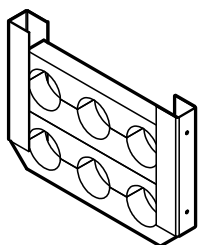
to identify the correct trench support for your project. See website for size and part number chart.

*Span width corresponds to the inside width of a Concast pedestrian rated channel. IE: 8020TS fits on an 8020 channel.



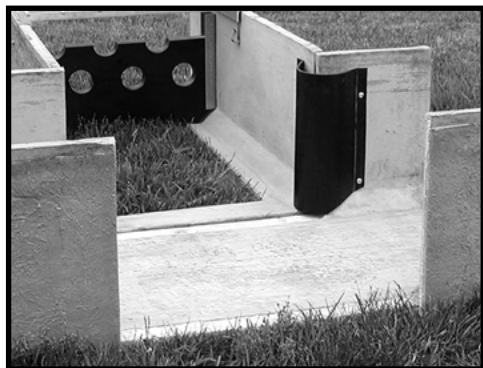
TRENCH SUPPORT	SPAN WIDTH*	FRAME LENGTH
8010TS	10"	48"
8020TS	20"	48"
8024TS	24"	48"
8030TS	30"	48"
8020TS	20"	48"
8050TS	50"	48"
8810TS	10"	96"
8820TS	20"	96"
8824TS	24"	96"
8830TS	30"	96"
8820TS	20"	96"
8850TS	50"	96"

CABLE SUPPORT BLOCKS

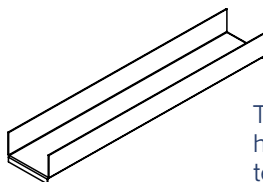


These block assemblies are used to separate, stabilize, and support cables in a precast concrete trench system. Two aluminum sleeves on the ends of the HDPE block layers are screwed into the sidewalls of the trench

for a secure fit. Concast, Inc. will work with you to produce a custom support block assembly that will satisfy the requirements of your project. Many hole sizes and configurations are available.



ALUMINUM GUTTERS

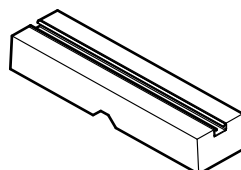


These lightweight aluminum gutters help to prevent the formation of water dams in high runoff areas. They are designed to fit into Concast's special notched pedestrian channel.



Notched channels can be specified by adding a "GN" suffix to a standard pedestrian part number. For example, a 20 inch wide notched channel would be called "8020GN".

PIPE SUPPORT BLOCKS



Pipe support blocks are used to separate, stabilize, and support heavy pipe in a precast concrete trench system. They are freestanding and constructed from concrete, with cast-in Unistrut to facilitate strapping the pipes to the support. Concast, Inc. will work with you to produce a support block assembly that will satisfy the requirements of your application.



Trench System Accessories

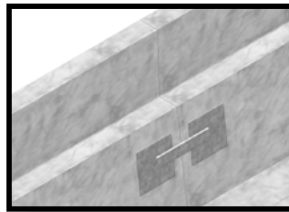
WELD PLATES

Weld plates can be cast into channels where needed for securing support members, trays, or piping.

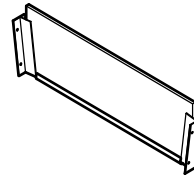


TIE STRAPS OR WELD STRAPS

Tie straps and weld straps are optional metal accessories that are used to attach channels to one another, and to prevent them from moving independently. They are usually attached via weld plate or threaded inserts.

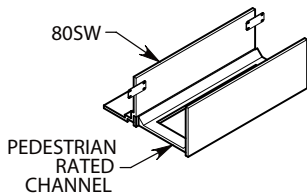


CHANNEL FIRE STOP



Concast firestops are comprised of a 1/2 inch thick Fibercrete® sheet that is mounted in the channel via 2 aluminum sleeves and Tapcon screws. The channel will need to be drilled at the desired locations for installation of the screws. The sheet height can be cut to fit after the cables are installed.

REPLACEMENT SIDEWALL CHANNEL



Accidentally drive over a pedestrian rated section of trench? Concast offers a pedestrian rated L-shaped sidewall that can be spliced into an existing trench run that has been broken. The channel is designed to work with either 12 inch deep or 16 inch deep Concast pedestrian trench.

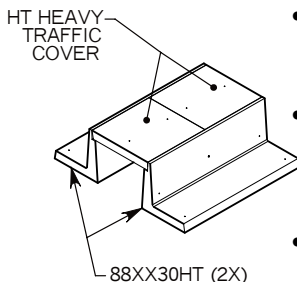
- Sidewall channel part number is 80SW.
- Additional brackets are part number 80SW-BP.

ALUMINUM COVER SUPPORTS

Custom aluminum braces used in trench runs to give extra support to covers that must span openings in pedestrian channel. They are standard in all pedestrian rated universal channels. These aluminum frames can be custom fit for each application.



HEAVY TRAFFIC H-20 RETROFIT "L" CHANNEL



- Shore up damaged trench walls and protect them from further damage.
- House and protect existing pedestrian trench from drive-over damage if you need to add a road crossing.
- Installed retrofit channel around existing cabling; thus eliminating the need to excavate & move a cable system that needs additional protection.
- Part number is 88XX30HT.



Trench System Accessories

Trench

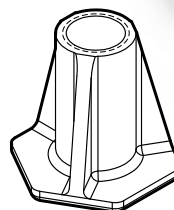
UNISTRUT



Unistrut is a great way to create an adjustable mounting mechanism. Unistrut is often supplied with a threaded spring nut (pictured). It is available in several materials including stainless steel, galvanized steel, and fiberglass. These channels can be either cast into or screwed onto Concast trench walls and/or base.

THREADED INSERTS

Threaded inserts can be cast into the floor of a trench section for lifting purposes. Insert sizes range from 1/4" to 1" diameter.



INSERT PLUGS

To keep threaded inserts from filling with debris and water, Concast offers a line of insert plugs. Available in both plastic and stainless steel.



INSERT PLUG	PLUG FIT DIAMETER	PLUG MATERIAL
IPB.388	3/8-16 UNC	Stainless Steel
IPB.5	1/2-13 UNC	Stainless Steel
IPB.388	3/8"	Plastic
IPB.5	1/2"	Plastic



HOLES & KNOCKOUTS



When conduit/cables cannot be routed deeply enough to enter the bottom of the trench run floor, holes or knockouts can be built into the system's side walls, covers, or end plates to allow access. Concast can predrill or void out any required holes or knockouts (KO). Fibercrete® can also be drilled with any masonry tools onsite.





Trench Accessories

CON-DUCT TERMINATORS



Concast offers plastic cable conduit terminators called Con-Duct. Each piece is cast into the concrete side wall and provides a smooth edge for pulling cables. The center plastic membrane can be knocked out when you are ready to use the opening.

Standard Con-Duct terminators are sized for 4 inch PVC, they are 6-1/4" apart on center, and they are Concast part number CD-464. Other sizes and spacings are available upon request.

For more information such as sizes and part numbers, see our website at www.concastinc.com/accessories/Con-Duct or contact your local Concast sale representative.

REDUCING COUPLERS

- The perfect solution for transitions from multiple sizes of PVC pipe into the standard Con-Duct terminators cast into Concast boxes.
- They can be cut to fit the following PVC pipe sizes: 1 inch, 1.5 inch, 2 inch, 2.5 inch, 3 inch, and 3.5 inch.
- Reducing Couplers are to be ordered under part number RC41.



VULKEM SEALANT



Vulkem polyurethane sealant is colored concrete gray and can be ordered under Concast P/N: 8004. It is delivered in tubes and is designed for use on poured and precast concrete surfaces. Vulkem 116 has demonstrated superior primerless adhesion to porous substrates for over 30 years and is the sealant of choice for commercial industrial expansion joints.

NEO PADS & JOINT SEALANT



Self-Adhesive Neoprene strips can be installed into the handholes to cushion the covers. They are colored gray and can be ordered under Concast P/N: NEO.

C-56 Butyl Mastic Joint Sealant comes in a coil of rope & can be used to form a permanent bond to the concrete. Order under part number 8004B.



Trench Accessories

Trench

4-WAY LIFT CHAIN



- Concast Part Number: 9003
- Can be used in conjunction with the Swivel Hoist Rings for lifting pull boxes
- The 9100 pound maximum rated load is contingent on maintaining a horizontal lift angle that is less than 60 degrees

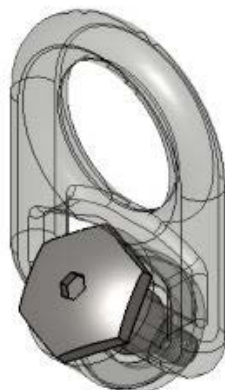


SWIVEL HOIST RING

HOIST RING	THREADED ROD DIA.	THREADED ROD LENGTH	MAX RATED LOAD
9002.38	3/8-16 UNC	1 inch	1000 Lbs.
9002	1/2-13 UNC	1.25 inch	2500 Lbs.
9002.75	3/4-10 UNC	1.5 inch	5000 Lbs.
9002L	1/2-13 UNC	2 inch	2500 Lbs.

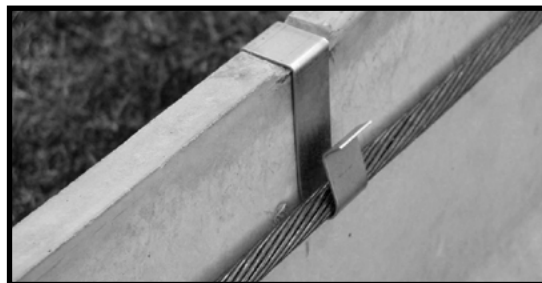
The forged swivel hoist ring is designed to thread into the cast-in inserts located in Concast's heavier products. Hoist rings are designed for lifting at any angle because they can swivel 360° and pivot. We recommend using our 4-way lifting chain (or equivalent) in conjunction with the hoist ring.

9002RB REPLACEMENT BOLT



CABLE CLIPS

All of Concast's channel are designed to use stainless steel cable clips. These clips are used to hold grounding wires on trench walls.



CABLE CLIP	CONCAST CHANNEL
8002	Std. Pedestrian
8002F	Flush Pedestrian
8002PT	PT Pedestrian
8002T	3" Thick Wall
8002R	Traffic Rated



Fibercrete[®] Trench System



Trench Cover Letter ID Plates

LETTER ID PLATES

LETTER ID PLATES	IDENTIFICATION TEXT	PLATE LENGTH	PLATE WIDTH
LTR-ID	CONCAST	14"	2.5"
LTR-ID-AUXV2	AUXILIARY	14"	2.5"
LTR-ID-AV	AV	14"	2.5"
LTR-ID-C	COMMUNICATION	14"	2.5"
LTR-ID-C2	COMMUNICATION (NO CONCAST)	14"	2.5"
LTR-ID-CO	CONTROL	14"	2.5"
LTR-ID-D	DATA	14"	2.5"
LTR-ID-DE	DATA/ELECTRIC	14"	2.5"
LTR-ID-DHV	DANGER-HIGH VOLTAGE-KEEP OUT	14"	2.5"
LTR-ID-E	ELECTRIC	14"	2.5"
LTR-ID-E2	ELECTRICITE	14"	2.5"
LTR-ID-E3	ELECTRICAL	14"	2.5"
LTR-ID-EC	ELECTRIC/COMM	14"	2.5"
LTR-ID-F	FIBER OPTIC	14"	2.5"
LTR-ID-FA	FIRE ALARM	14"	2.5"
LTR-ID-FAAP	FAA POWER	14"	2.5"
LTR-ID-FDOETHV	FDOT HIGH VOLTAGE	14"	2.5"
LTR-ID-G	GAS	14"	2.5"
LTR-ID-GR	GROUND	14"	2.5"
LTR-ID-HV	HIGH VOLTAGE	14"	2.5"
LTR-ID-I	IRRIGATION	14"	2.5"
LTR-ID-L	LIGHTING	14"	2.5"
LTR-ID-LV	LOW VOLTAGE	14"	2.5"
LTR-ID-P	POWER	14"	2.5"
LTR-ID-PRIMARY	PRIMARY	14"	2.5"
LTR-ID-SECONDARY	SECONDARY	14"	2.5"
LTR-ID-T	TELECOM	14"	2.5"
LTR-ID-W	WATER	14"	2.5"
LTR-ID-480V	480V	14"	2.5"

- LTR-ID is the plate that is used by default in all trench covers.
- All standard listed plates are interchangeable with the default plate.



Trench Accessories

Trench

PK-1 Patch Kit:

- Used for cosmetic repairs.
- Kit is complete with everything you need for small concrete repairs, including patching compound, bucket, and a trowel.



PK-2 Patch Kit:

- Ideal for patching holes in non-structural concrete sections.
- Kit consists of a large Fibercrete® patch sheet (1/2" thick by 12" sq.) which is cut to size, and then a construction adhesive or concrete screws are used to attach the patch over the hole.

PK-36, PK-69, & PK-912 PatchKwik Kits

- Easy to apply, self-adhesive fiberglass patch that is UV light activated. Available in 3 sizes.
- Spray paint can be ordered from Concast in gray or green. Part numbers are PK-Gray & PK-Green respectively.
- More detail online.



GUIDE POSTS & SAFETY CHAIN

Guide posts and chain provide protection for your pre-cast MGS boxes by blocking off vehicular traffic or defining a road way. A hard, yellow plastic exterior ensures that the color will withstand years of environmental exposure like UV rays and heat. The posts are available either hollow, or concrete filled with steel rebar reinforcement. A 3/8-16 UNC threaded insert is located at the top of each post for securing optional safety chain. See more online.



Post, Rope & Chain Part Numbers	Connection Hardware Part Numbers
8005Y-4F	9001G
8005Y-4H	9001SS
8005Y-7F	9001Z
8005Y-7H	9001G-J
8007	9001SS-J
8007Y-3	9001ACC
8007SG	HHB.38-1.5
ROPE-5-BK	WSR.38-1
ROPE-5-YW	8007SG-CL
	ROPE-CLAMP-625
	SHSS
	SHPY-3

Fibercrete® Trench System



Trench Accessories

Trench System

LIFT DOLLY P/N: CRD1 & CRD2

The lift dolly is an ideal tool for easily removing heavier covers. The included lifting chain system can remove covers with both slots and threaded inserts. The dolly also features maintenance free, easy rolling, solid pneumatic wheels; and it is collapsible for easy storage.

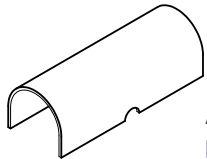


LIFT TOOL P/N: 8000



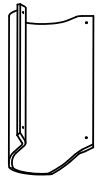
Lifting tools are provided with all orders for light-weight pre-cast parts built by Concast, Inc. The standard galvanized steel tool is designed to engage the lifting slots built into items such as the fibercrete pedestrian trench covers to ensure an easy manual lift.

The J-Hook tool (P/N: 8000J) is used to lift fiberglass covers, and can also be used in conjunction with the 9000 eye bolt to lift lighter covers. The 8000T has a longer handle and is Stainless Steel.



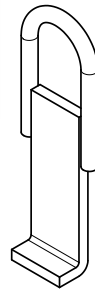
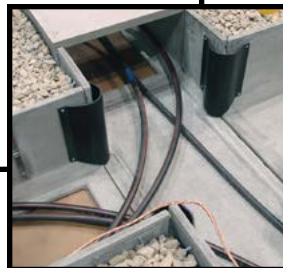
Cable Protector P/N: 8003

After cables have been placed, just set our Fibercrete® protector over the top and backfill. Dig without fear of hitting cables, as you will hit the protector first. P/N 8003 can also be used above grade to protect temporary cables from UV rays and accidental contact.



Corner Protector P/N: 8006

Concast's corner protectors are made from black HDPE plastic, and they serve the function of preventing chafing on the cables when they need to round a corner within the trench run. Generally used in conjunction with universal channel. Four Tapcon screws are provided to permanently attach the protector to the channel.



HEAVY LIFT TOOL P/N: 8000L

This tool is designed to be an alternative to the standard 8000 lifting tool. The heavy lift tool will engage the slots built into steel Concast covers. This tool offers the option of handling these covers with rigging equipment. Chain (P/N: 9003) is sold separately.





GENERAL SPECIFICATIONS FOR CABLE TRENCH

1. TECHNICAL SCOPE

- 1-A.** These specifications cover any precast Fibercrete® (G.F.R.C.) and/or concrete cable trench system manufactured by Concast Incorporated in Zumbrota, Minnesota. The manufacturer must have experience in design and fabrication of these products and also the facilities for fabricating them with the quality specified herein and without delay to the agreed upon schedule.
- 1-B.** The trench system shall be designed and constructed to provide a serviceable life of 35 years and warranted for 5 years when installed outdoors in full sunlight and without any protection from the weather at any location in the continental United States or Canada.
- 1-C.** The Supplier shall design, construct, perform dimensional and quality control tests, and prepare the trench for truck shipment. Shipping and delivery responsibilities shall be defined in the project specific purchase documents. The Supplier shall provide all necessary documentation as stated in this specification.

2. DIMENSIONS AND DESIGN

- 2-A.** Drawings shall be made available for engineering approval and field installation. Final drawings will include individual details, the layout, a complete BOM (Bill of Materials), and installation guidelines. Electronic individual component drawings in PDF format are available upon request. Standard part drawings shall be available online.
- 2-B.** The tolerances of the dimensions of each trench component shall not exceed $\pm 1/8"$. These tolerances apply to the components when ready for shipping, when set on a flat and level surface with no loads applied to it.
- 2-C.** Fiber and steel reinforced concrete components shall be non-flammable.
- 2-D.** The precast components are designed to conform to requirements stated in ASTM C857-07 "Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures, ASTM C858-07 "Specifications for Underground Precast Concrete Utility Structures".
- 2-E.** Provisions, such as cast-in threaded inserts, must be offered for lifting traffic rated trench channels. Mounting holes must be adequately reinforced to avoid damaging the channel, and to provide an ultimate strength of at least 5 times the part weight when the unit is lifted in accordance with the manufacturer's instructions.

3. PERFORMANCE AND MATERIALS

- 3-A.** Cement shall conform to the requirement of ASTM C150 - Type I, II or ASTM C595 - Type IL.
- 3-B.** Course and fine aggregates shall conform to ASTM C33 "Specification for Concrete Aggregates".
- 3-C.** Preparation of concrete shall conform to ASTM C94 "Specification for Ready-Mix Concrete" & ACI 304 "Guide for Mixing, Transporting and Placing Concrete".
- 3-D. LAY-UP GFRC - FIBERCRETE®**
- 3-D.1** Composed of cement mortar reinforced by alkali resistant glass fiber, and deformed high tensile welded wire. It is fabricated via the Concast spray lay-up method which incorporates a minimum of 4 percent volume A.R. glass fibers.
- 3-D.2** Conforms to AIA Masterspec Section 03491 for Glass Fiber Reinforced Concrete and quality control procedures per PCI# MNL-130-91.



Trench Specifications

3-E. PREMIX GFRC - FIBERCRETE®

- 3-E.1** Composed of cement mortar reinforced by alkali resistant glass fiber, and a deformed prefabricated high tensile welded steel wire. It is fabricated via casting into steel forms.
- 3-E.2** A.R. Glass is required to prevent glass deterioration if in contact with any poured cement or grout foundation.
- 3-E.3** Shall obtain a minimum compressive strength of 6000 PSI at 28 days of age.

3-F. MICRO-CONCRETE

- 3-F.1** Precast concrete trench components shall be cast into steel forms using Type I/II Portland Cement.
- 3-F.2** Concrete shall contain 6% entrained air (plus or minus 1%)
- 3-F.3** Shall obtain a minimum compressive strength of 7500 PSI at 28 days of age.

3-G. REINFORCEMENT

- 3-G.1** Steel reinforcing bars shall conform to ASTM A615/A615M-16 "Standard Specification for Deformed and Plain Carbon-Steel Bars for Reinforcement".
- 3-G.2** Steel reinforcing wires shall conform to ASTM A496 "Specification for Steel Wire, Deformed for Concrete Reinforcement".
- 3-G.3** Steel reinforcing weld wire cages shall conform to ASTM A497 "Specification for Steel Welded Wire Fabric, Deformed for Concrete Reinforcement".

3-H. With equipment installed; the trench system shall be capable of withstanding temperature variations of -40° Fahrenheit to 149° Fahrenheit without cracking, splitting, or otherwise deforming. Material shall have been tested and conform to ASTM C666/C666M-03. Relative dynamic modulus - less than 5% change. Mass change - less than 0.25%.

3-I. Fire Resistance: Per ASTM E-84 surface burning test must provide Class A level with a flame spread index of 0 and smoke developed index is also 0.

3-J. Chloride Ion Penetrability per AASHTO T 277-15 and ASTM C1202-12 shall be moderate.

3-K. When required, site-specific, PE stamped, seismic calculations shall be provided.

3-L. Concrete properties will vary depending upon the particular formulation of the concrete mix design. Customized properties can be achieved by using nonstandard ingredients, by changing or adding reinforcements, and by tailoring the overall mix design.

3-M. METAL COMPONENT

3-M.1 All galvanized steel covers, hardware, and embedments shall meet the following requirements:

- Steel Deck Plating - ASTM A786
- Steel Sheet - A1011 HSLAS Gr 50
- Steel Angles & Flats - ASTM A-36
- Galvanized Covers - ASTM 123
- Galvanized Hardware - ASTM 153

3-M.2 All stainless steel hardware and embedments shall meet the following requirements:

- Stainless Steel Angles & Flats Type 304 - ASTM A276
- Stainless Steel Sheet Type 304 - ASTM A-240



3-M.3 All aluminum covers, hardware, and embedments shall meet the following requirements:

- Aluminum Flats 6061-T6511 - ASTM B22
- Aluminum Sheet Smooth 5052-H32 - ASTM B209
- Aluminum Deck Plating 3003 - ASTM B209 or 6061 - ASTM B632
- Aluminum Angles 6061-T6 - ASTM B308
- Aluminum Channels 6061-T6 - ASTM B308

3-N. POLYMER CONCRETE

3-N.1 All polymer concrete covers shall meet the following requirements:

- | | | |
|--------------------------------------|------------|---|
| • Compressive Strength | ASTM C39 | Min: 11,000 psi |
| • Tension Strength | ASTM C307 | Min: 2000 psi |
| • Flexural Strength | ASTM C580 | Min: 3,700 psi |
| • Absorption | ASTM C97 | Max: .09% |
| • Rate of burning | ASTM D635 | Classified HB |
| • Freeze/thaw resistance 1000 cycles | ASTM C580 | Durability factor at 300 cycles (%) - 100 |
| • Chemical & Stain Resistance | ASTM D1308 | |
| • Sodium Chloride 5% | ASTM D1308 | No visual effect |
| • Sulfuric Acid 0.1N | ASTM D1308 | No visual effect |
| • Ammonium Hydroxide 28% | ASTM D1308 | No visual effect |
| • Potassium Hydroxide 20% | ASTM D1308 | No visual effect |
| • Calcium Chloride 5% | ASTM D1308 | No visual effect |
| • Sodium Hydroxide 0.1N | ASTM D1308 | No visual effect |
| • Ethyl Alcohol 100% | ASTM D1308 | No visual effect |
| • Acetic Acid 5% | ASTM D1308 | No visual effect |
| • Nitric Acid 30% | ASTM D1308 | No visual effect |
| • Hydrochloric 0.2N | ASTM D1308 | No visual effect |
| • | | |

- 4-A.** Trench systems shall consist of precast reinforced concrete channel sections with removable cover sections and end plates assembled to form a completely enclosed trench.
- 4-B.** Trench channels shall have an inside depth of 8, 12, 16, 24 or 36 inches which excludes the cover and floor thickness.
- 4-C.** Trench channels have an interior minimum width of 6, 12, 10, 20, 24, 30, 40, or 50 inches. All channels shall be available with open or solid bottom configurations.
- 4-D.** The channel design is such that it is self-supporting and can be set above grade level if required.

ALL CONCAST TRENCH SYSTEMS

- 4-E.** All channels to be of one-piece design and shall be furnished in standard 4 or 8 foot lengths. Special lengths under 8' long must be made available when needed in a trench run layout. Channel sections must be designed to interlock via male/ female end joints.
- 4-F.** A universal channel shall be provided for ells, tees, crosses, and reducers. Special angled channels are used for turns in the trench run, for elevation changes, or transitions from pedestrian rated to traffic rated channel.



Trench System Specifications

5. PEDESTRIAN RATED TRENCH SYSTEMS

- 5-A. Trench systems are designed to support at least 200 PSF live load. Not intended for vehicle traffic.
- 5-B. Standard lightweight channels are to be constructed with spray up Fibercrete®.
- 5-C. Covers must be made available in aluminum, Fibercrete®, galvanized steel, ventilated galvanized steel, polymer & fiberglass; they are sized to permit manual removal by a single person using the Concast, Inc. lifting tool to engage the lifting slots in the cover.

6. TRAFFIC RATED TRENCH SYSTEMS

- 6-A. All Light Traffic channels shall meet AASHTO H-10 light equipment requirement of supporting 16,000 lb./axle load.
- 6-B. All Light Traffic channels shall have the following H-10 rated cover options: lightweight Fibercrete®, precast steel reinforced concrete, or fabricated hot-dipped galvanized steel with or without ventilation grates.
- 6-B. All Heavy Traffic channels shall meet AASHTO H-40 heavy equipment requirement of supporting 64,000 lb./axle load.
- 6-B. All Heavy Traffic system's final traffic rating is controlled by the traffic rating of the cover.
- 6-C. All HTSG40 steel covers, standard HTSG steel covers & standard HT concrete covers shall meet AASHTO H-40 heavy equipment requirement of supporting 64,000 lb./axle load.
- 6-C. All angled HTSG steel covers, angled HT concrete covers, HT3 concrete, polymer & fiberglass covers shall meet AASHTO H-20 heavy equipment requirement of supporting 32,000 lb./axle load.
- 6-E. Provisions, such as cast-in threaded inserts, must be offered for lifting traffic rated trench channels. Mounting holes must be adequately reinforced to avoid damaging the channel, and to provide an ultimate strength of at least 5 times the part weight when the unit is lifted in accordance with the manufacturer's instructions.
- 6-F. All steel reinforcement is held inside the concrete mold using rebar chairs. These chairs ensure a proper concrete coverage of 3/4 inch minimum over all areas of steel reinforcement.

7. INSTALLATION REQUIREMENTS

- 7-A. When the bottom of the excavation is soft, or where in the opinion of the soils engineer unsatisfactory foundation conditions exist, the contractor shall over excavate to a depth to ensure a proper foundation as directed by the soils engineer. The excavation can then be brought back up to the prescribed grade with a thoroughly compacted granular material.
- 7-B. All trench excavations shall be backfilled to restore pre-existing conditions or to the final grade as specified by the owner.
- 7-C. All backfill material shall be a granular material as required by the soils engineer. Trench shall be designed to have no limitations of backfill height.
- 7-D. Installation guidelines shall be made available online.



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