Change
Channels

go with the
FLOW

TRANSPORTATION PRODUCTS

POLYCAST

INSTALLATIONS

POLYCAST® Installations

Highway

- CADOT - Highway 1 (Morrow Bay)
- CADOT - Highway 99 (Stockton)
- CADOT - Highway 17 (Santa Cruz)
- CADOT - I-5, I-805 (San Diego)
- Ohio Turnpike - Exit 9 (Cleveland)
- PennDOT - U.S. 30 (Lancaster)
- MIDOT - U.S. 23 (Ann Arbor)
- CADOT - Highway 58 (Mojave)
- VADOT - I-64 (Hampton)

Airports

- Kelly AFB - San Antonio, TX
- Birmingham International Airport, AL
- Salt Lake City International Airport, UT
- Sea-Tac Airport - Seattle, WA
- Salem Airport - Salem, OR
- Philadelphia International Airport, PA
- BWI Airport - Baltimore, MD
- Grissom AFB - IN
- Midway Airport - Chicago, IL
- Dulles International Airport - Sterling, VA
- Denver International Airport, CO
- Dallas/Fort Worth International Airport - DFW Airport, TX
- Ellington AFB - Houston, TX

Ocean Container Terminals

- Port of Long Beach, CA
- Port of San Diego, CA
- Port of Los Angeles, CA
- Port of Oakland, CA
- Port of Elizabeth, NJ - Maher Terminal
- Port Authority of New Orleans, LA

Railways

- Amtrak
- Southern Pacific

CONTENTS

900 Series Grated Line Drain

The POLYCAST® 900 Series Grated Line Drain for highway and airport drainage systems collects run-off before it travels onto road or airplane taxi surfaces where water and ice can cause hazardous conditions. POLYCAST Grated Line Drain exceeds AASHTO highway standards for vehicles operating at highway speeds. It is a safe, economical, and low maintenance solution for roadway (DOT) surface drainage systems.

POLYCAST® Grated Line Drain features:

- Flow rates of up to 470 GPM per outlet
- Corrosion, chemical, and UV-resistant polymer concrete channels
- Integral embedment anchor flanges secure the nonremovable grate to prevent pullout from high-speed highway traffic
- Removable grates with locking devices also available
- Coefficient of thermal expansion similar to concrete

POLYCAST precast polymer concrete drain channels are available in 2' and 4' lengths and have a built-in slope of 0.65%. Tongue-and-groove channel joints interlock fully and evenly with adjoining channels. Each channel has a horizontal anchoring rib located along both sides of the bottom of the channel to mechanically engage the channel into the adjacent concrete.

Polymer concrete is resistant to salt, oil, most acids, and alkalis.This makes it excellent for containing and transporting run-off in any roadway application. It also maintains structural properties under freeze/thaw conditions.

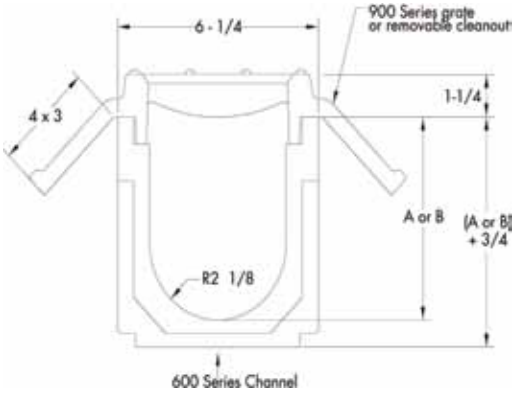
POLYCAST® 900 Series Grates

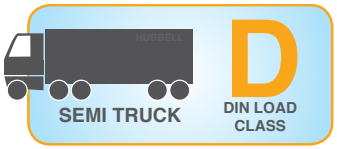
The ductile iron grates developed for the POLYCAST® 900 Series Grated Line Drain was designed to provide maximum inlet capacity. Both one-piece and removable designs incorporate positive anchoring flanges or bolts on each corner to help the grate withstand pull-out from high-speed highway traffic and snowplow blades.

One-piece (non-removable) assemblies are used in most instances. A removable grate assembly can be added where needed on any given run to provide open access for “clean-outs”.

The POLYCAST 900 Series grates comply with the provisions cited in CALTRANS Section 10-1.35, "Grated Line Drain" and are made in compliance with CALTRANS Section 75-1.02, "Miscellaneous Iron and Steel" utilizing ASTM A-536, Grade 65-45-12 ductile iron. All grates and frames resist pullout forces in excess of 10 kN per meter (685 lbs. per foot) of length of grated line drains.

Drain Configuration





900 Series Grates

Ductile Iron Slotted

Heavy duty slotted iron grate designed for full highway traffic. This grate features 4 integral cast lugs every 16" to permanently and securely anchor it to the surrounding slab. One-piece (Non-removable) Frame and Grate with 9/16" diameter integral lugs. ASTM A536 Class 65-45-12.

Part No. DG0900

Open Area: 41 in²/Linear Foot (60% open area)

Dimensions: 5.25" X 16"

Weight: 14 lbs.

Slot Size: 1.63" x 4.72"

Ductile Iron - Cleanout Grate

Heavy duty slotted iron removable cleanout grate. This features a cast iron frame with steel lugs to anchor it into the surrounding concrete. Locking devices engage frame above the flow area and do not impede flow. Grate Locking Device Part No. DA0942 (1 per grate required).

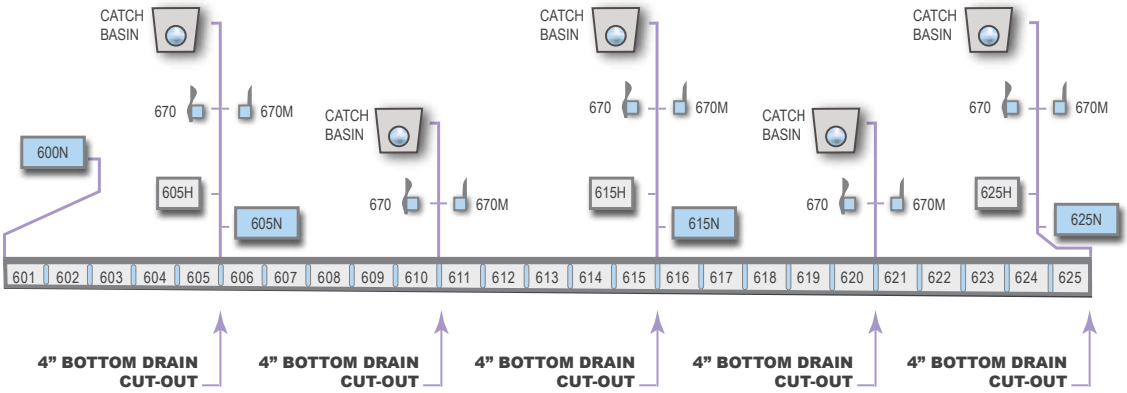
Part No. DG0941D

Open Area: 37 in²/Linear Foot (60% open area)

Dimensions: 5.19" x 23.88" (6.25" x 24" overall)

Weight (grate plus frame): 22 lbs.

Slot Size: 1.63" x 4.31"



NOTE: All half and non-sloped channels have bottom cut-outs.

Channel Number	Weight Lbs.	Inlet DIM 'A'	Outlet DIM 'B'
600N (non-sloped)	43	4-1/16	4-1/16
601	44	4-1/16	4-3/8
602	45	4-3/8	4-11/16
603	46	4-11/16	5
604	46	5	5-5/16
605	47	5-5/16	5-5/8
605N (non-sloped)	48	5-5/8	5-5/8
605H (non-sloped 24")	22	5-5/8	5-5/8
606	49	5-5/8	5-15/16
607	50	5-15/16	6-1/4
608	51	6-1/4	6-9/16
609	52	6-9/16	6-7/8
610	54	6-7/8	7-3/16
611	55	7-3/16	7-1/2
612	56	7-1/2	7-13/16
613	57	7-13/16	8-1/8

Channel Number	Weight Lbs.	Inlet DIM 'A'	Outlet DIM 'B'
614	58	8-1/8	8-7/16
615	59	8-7/16	8-3/4
615N (non-sloped)	61	8-3/4	8-3/4
615H (non-sloped 24")	29	8-3/4	8-3/4
616	62	8-3/4	9-1/16
617	63	9-1/16	9-3/8
618	64	9-3/8	9-11/16
619	65	9-11/16	10
620	66	10	10-5/16
621	68	10-5/16	10-5/8
622	71	10-5/8	10-15/16
623	72	10-15/16	11-1/4
624	75	11-1/4	11-9/16
625	76	11-9/16	11-7/8
625N (non-sloped)	76	11-7/8	11-7/8
625H (non-sloped 24")	38	11-7/8	11-7/8

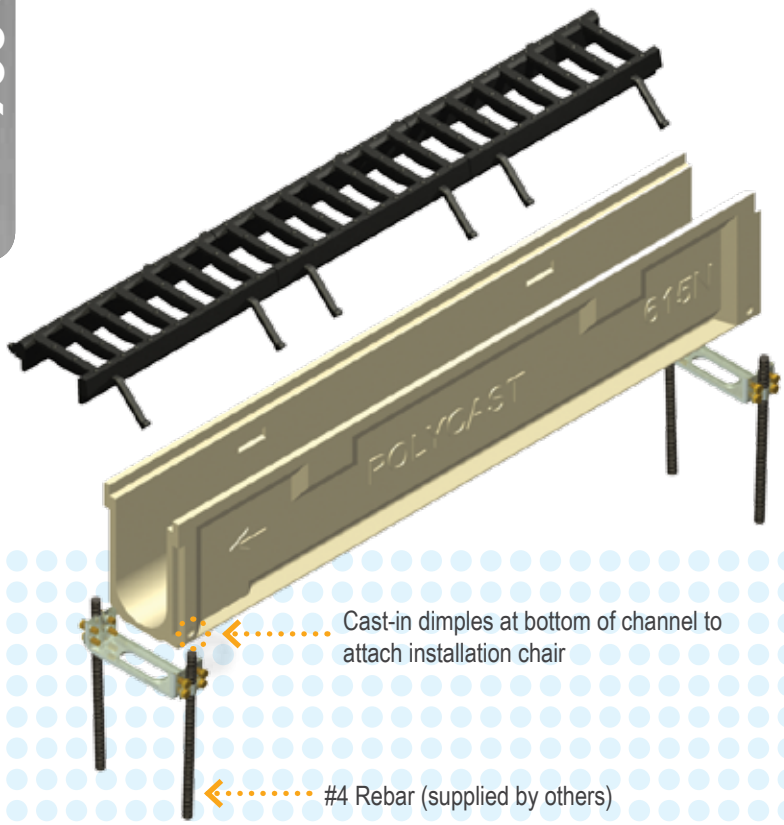
900 Series Installation & Details

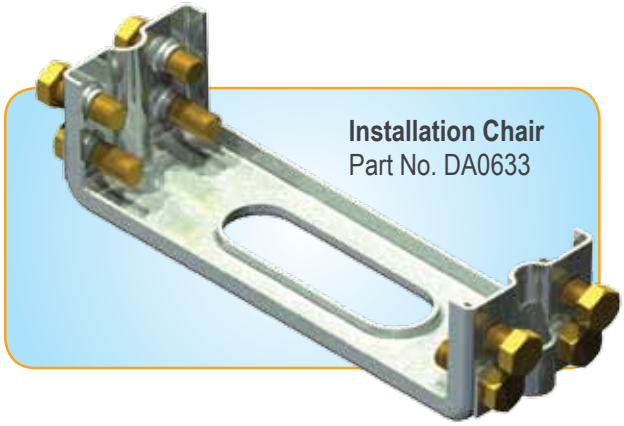
Installation

The POLYCAST® Installation Chair (part DA0633) is the most efficient and economical means of setting a precast trench system. The installation chair supports the ends of the channels, aligns and locks the joints rigidly together, and prevents the channels from floating without any additional formwork. Adjusting channel elevation is easy with the POLYCAST Installation Chair.

The installation chair is attached by tightening the alignment bolts into the channel "dimples". Two pieces of #4 rebar are set every 4' to correspond with the channel joints, placed through the connecting clamp on the installation chair, and driven into the sub-base. The channels are then aligned and adjusted to achieve the proper elevation.

One chair per joint required.





GR8 TIPS

We Take the Guesswork Out

Feet and Inches: Using the English system of measurement for product dimensions make site layout simpler and faster.

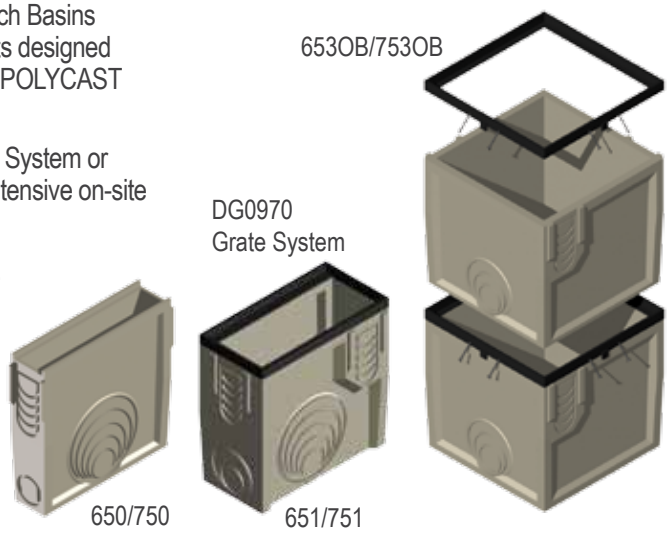
Catch Basins

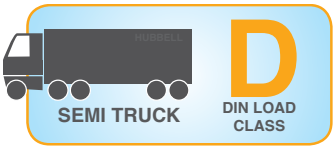
The POLYCAST® Catch Basins are an important part of the versatile POLYCAST Presloped Drain System. The catch basins are manufactured with the same high strength, corrosion-resistant polyester and Vinyl Ester polymer concrete used for the POLYCAST Drain Channels. They are designed to be used as collection points, drain run transitions, and interceptors to collect solid debris. POLYCAST Catch Basins are designed to accommodate all drain channel sizes and have cut-outs designed specifically for channels with catalog numbers ending in 5, 0, N and H. POLYCAST Catch Basins have a selection of grates available for specific needs.

The POLYCAST Catch Basins can be used with the POLYCAST Drain System or can be used as an individual catch basin. In either case, costly, labor-intensive on-site forming is eliminated.

POLYCAST 700 Series HARDNOSE® Catch Basins are also available. They have the same features as the corresponding 600 Series Catch Basin. The 700 Series Catch Basins have a one-piece metal assembly for additional grating load distribution. HARDNOSE Catch Basins should be used in areas where solid tire and heavy commercial vehicles are anticipated.

The 650 Catch Basin is available with any of the gratings/covers available for the 600 Series Channels. The 651 Catch Basin is available with cast iron or fiberglass grates. The 653OB and 653SB Catch Basins are available with cast iron or fiberglass grates.





CATCH BASIN GRATES

Gray Iron Slotted

Designed for frequent heavy traffic. Grate hold-down devices are included and should be maintained secure.

Part No. DG0643

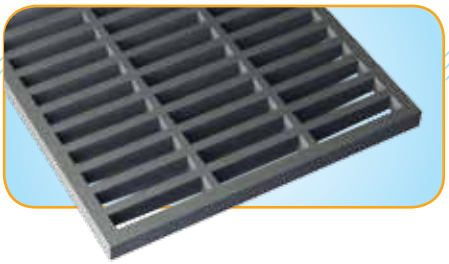
Open Area: 32 in²/Linear Foot
Dimensions: 10-3/4" x 22-3/4"
Weight: 63 lbs.
For use with 651/652 Basins
Black Finish

Ductile Iron Slotted

Designed for frequent heavy traffic.

Part No. DG0653D

Open Area: 288 in²/Linear Foot
Dimensions: 23-3/4" x 23-3/4"
Weight: 130 lbs.
ASTM A536 Class 65-45-12
For use with 653OB/653SB Basins
Black Finish



Ductile Iron Cleanout Assembly

Heavy duty slotted iron removable cleanout grate. This features a cast iron frame with steel lugs to anchor it into the surrounding concrete.

Part No. DG0900AC

Dimensions: 6-1/4" x 24"
Weight (grate plus frame): 22 lbs.
Slot Size: 1.63" x 4.31"
For use with 650 Basins

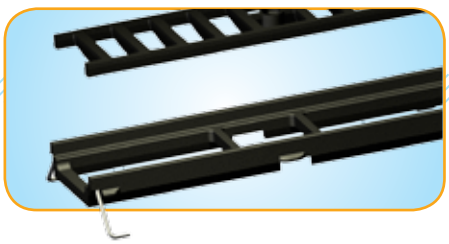
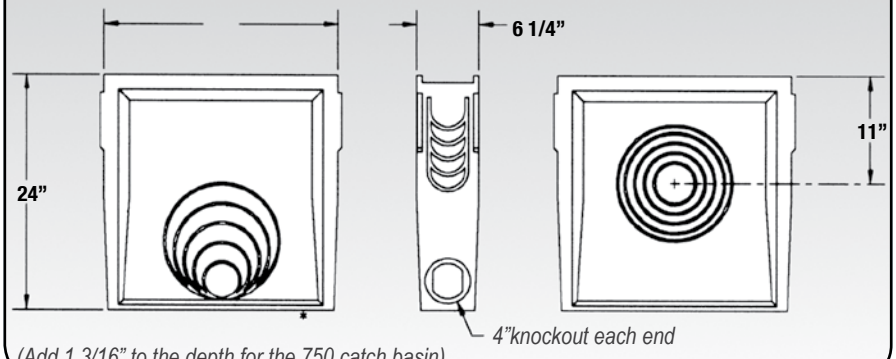
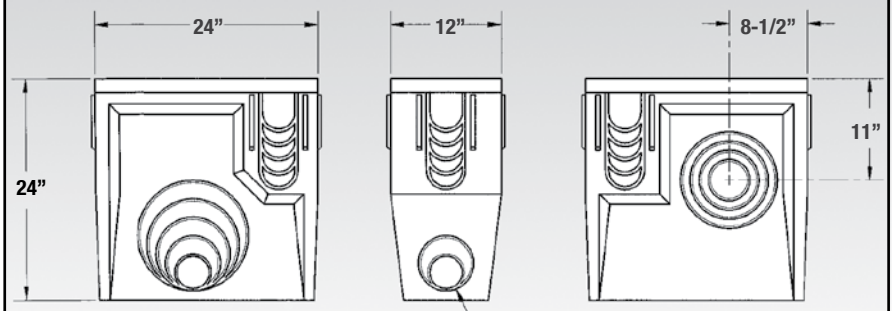


Fig. 1 650/750 Catch Basin
Wt. 90 lbs./105 lbs. - 11 Gallon Capacity



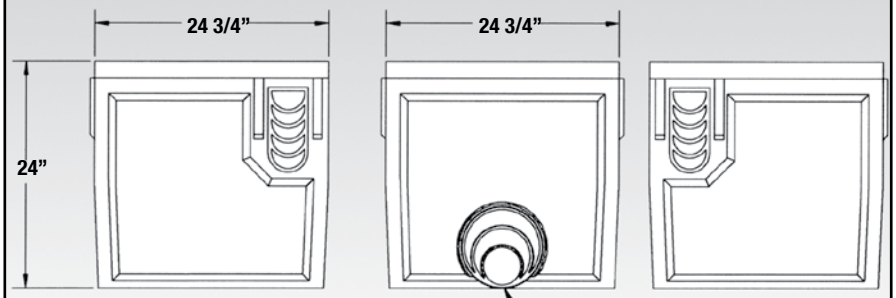
(Add 1 3/16" to the depth for the 750 catch basin)

Fig. 2 651/751 Catch Basin
Wt. 160 lbs./180 lbs. - 17 Gallon Capacity



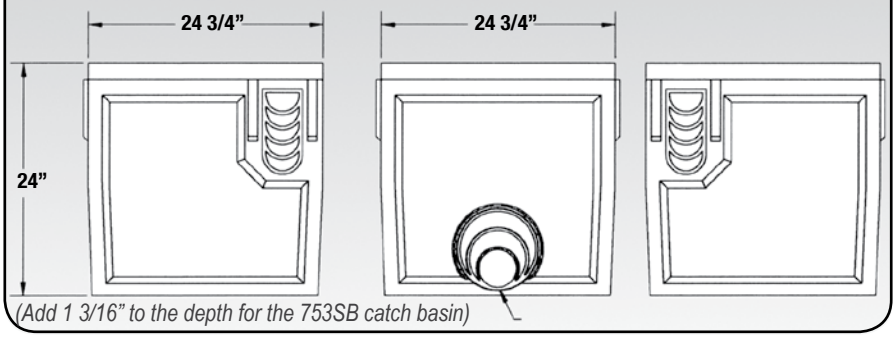
(Add 1-3/16" to the depth for the 751 catch basin)

Fig. 3 653OB/753OB Catch Basin (Open Bottom Stacking)
Wt. 142 lbs./154 lbs. - 46 Gallon Capacity



(Add 1 3/16" to the depth for the 753SB catch basin)

Fig. 4 653SB/753SB Catch Basin (Solid Bottom)
Wt. 165 lbs./177 lbs. - 46 Gallon Capacity (92 gallons with (1) 6530B)



(Add 1 3/16" to the depth for the 753SB catch basin)

4" and 6" Bottom Cut-Outs

Catch Basin cut-outs accept the following channels: 605, 610, 615, 620, 625 and their corresponding halves and neutrals.

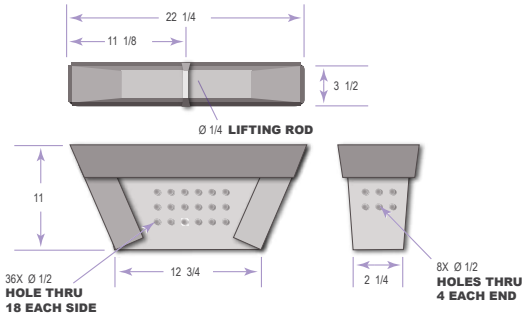
Drain channel cut-out connections are located on both ends of the catch basin. Pipe discharge cut-outs for 4", 6", 8", 10" and 12" pipe are located on both sides. The pipe cut-outs are located near the bottom of the catch basin on one side and on the other side the pipe cut-outs are located toward the middle. The 650/750 and 651/751 catch basins also have one 4" pipe cut-out on each end and one 4" and 6" pipe cut-out on the bottom. 6" outlet requires DA0638 swedge adapter.

Debris Baskets

Chemical resistant corrugated plastic debris baskets are available for the 650/750 and 651/751 catch basins.

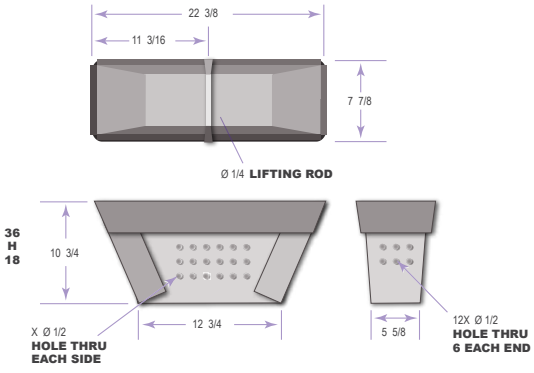
HDPE Corrugated Plastic Debris Basket for 650/750 Catch Basin

Part No. DA0650TA



HDPE Corrugated Plastic Debris Basket for 651/751 Catch Basin

Part No. DA0651TA



NOTE: A debris basket is not available for the 653 catch basins.

POLYCAST© Specifications

900 SERIES

General: The work specified in this section shall consist of furnishing and installing preformed trench drains including drain channels, frames, grates, and accessories as shown on the contract plans. The surface drainage system shall consist of 900 Series Precast Polymer Concrete Trench Drain. One manufacturer shall provide all drain components unless noted otherwise at piping connections. The number of component joints shall be minimized for products in this section.

Materials: The precast trench drain shall be cast of polyester polymer concrete as shown on the contract plans. The dimensions shall be 4.25" inside width with a full radius bottom. The grate bearing ledge shall be a minimum of 0.5". Sloped and non-sloped channels shall be used as shown in contract plans. The sloped channels shall be 48" long with an inverted slope of 0.65%. Channels shall have interlocking joints and side height extension panels. The maximum system capacity without extensions shall be 460 GPM at flat and level grade.

The polymer concrete shall have minimum material properties as follows:

DESCRIPTION	TEST METHOD	VALUES
Compressive strength:	ASTM C-109	12,000 psi
Tensile strength:	ASTM C-307	1,700 psi
Water absorption:	ASTM 5-570	<1%
Chemical resistance:	ASTM D-543	75% strength, <2% change in weight/dimension
Accelerated service:	ASTM D-7566-E	75% strength, <2% change in weight/dimension
CTE (coefficient of thermal expansion):		15x10-6 in/in/°F

Grates and Frames: The grating and frames shall be made of steel (ASTM A-36), ductile iron (ASTM A-536 minimum grade 65-45-12), or gray iron (ASTM A-48) and meet AASHTO HS-20 and FAA load requirements. The frames shall be non-removable from the concrete. The grates shall be removable or non-removable as shown on the contract plans. The removable grates shall have threaded bolt lockdowns that do not unduly impede fluid flow in the channel. The lockdowns shall withstand cyclical loads of 700 pounds after salt exposure per ASTM B-517. Non-removable grates shall have integrally cast anchoring lugs with terminus interlock.

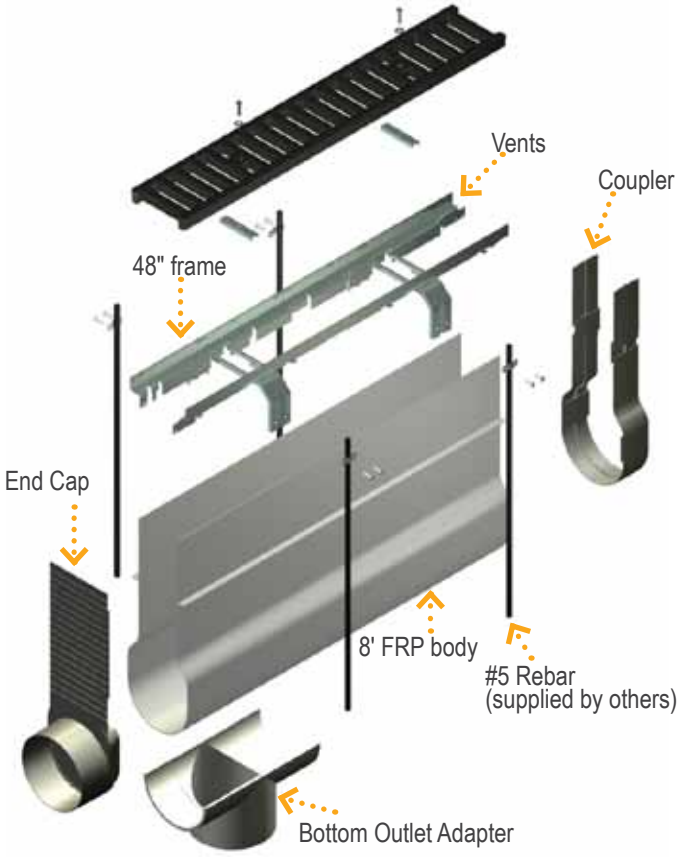
Installation: The manufacturer's installation recommendations shall be followed. The reinforcement in the concrete surrounding the drain shall be adequate for the anticipated loads. The trench drain shall not be used in place of a defacto expansion joint.

3000 Series Assembly

High Capacity Drain System

The POLYCAST® 3000 Series is a high capacity drain system designed for airports, roadways, and other applications needing especially high flow volume. POLYCAST 3000 can achieve flow rates of more than 3000 GPM (gallons per minute) or 6.73 cfs (cubic feet per second).

Channels are pultruded fiberglass and are available in polyester resin or in Vinyl Ester resin for exceptionally high chemical resistance. The strong vertical sidewalls reduce sidewall deflection during the concrete pour and therefore maintain maximum flow capacity. The sidewalls of many other drain systems tend to collapse during this critical process, resulting in substantially reduced flows.



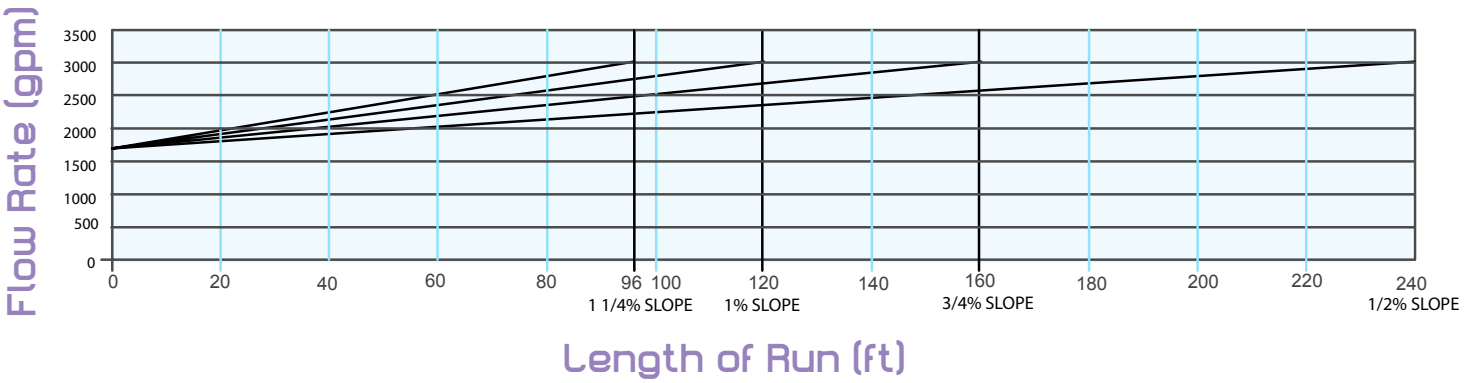
- More than 3000 GPM flow rate
- Up to 240' of continuous slope at 0.5%
- 8-foot channel sections
- 4 slopes available from 0.5% to 1.25%
- Lightweight
- Corrosion resistant
- Rapid installation
- Utilizes standard grating
- Single lift concrete placement

3000 Series Assembly

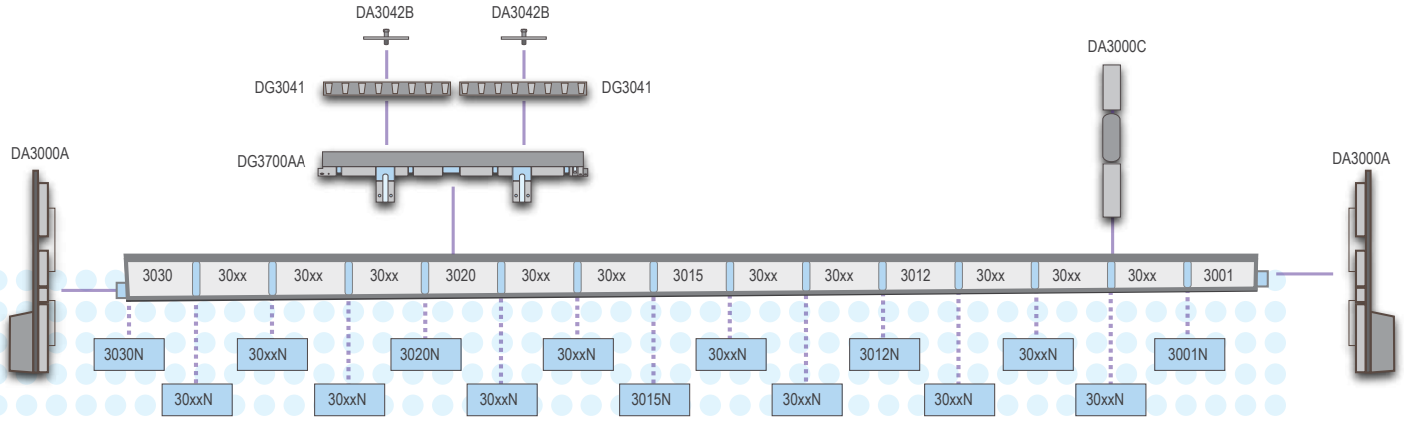
Custom Slope

POLYCAST® 3000 channels are available with 0.5%, 0.75%, 1%, and 1.25% built in slopes. Differing slopes can be integrated into the channel design for varying site conditions. The number of channels varies with the selected slope, from as few as 12 to 30.

Flow Capacity for 3000 Series Variable Built-in Slopes



Drain Configuration



Multi-Slope Drain Configuration Chart

0.5% Slope — Channels: 3001 - 3030

240' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3001	13.15	13.63	1607	5.8	23.7
3002	13.63	14.11	1656	5.8	24.5
3003	14.11	14.59	1704	5.8	25.3
3004	14.59	15.07	1753	5.8	26.0
3005	15.07	15.55	1802	5.8	26.8
3006	15.55	16.03	1850	5.8	27.5
3007	16.03	16.51	1899	5.8	28.3
3008	16.51	16.99	1947	5.8	29.1
3009	16.99	17.47	1996	5.8	29.8
3010	17.47	17.95	2045	5.8	30.6
3011	17.95	18.43	2093	5.8	31.3
3012	18.43	18.91	2142	5.8	32.1
3013	18.91	19.39	2191	5.8	32.9
3014	19.39	19.87	2239	5.8	33.6
3015	19.87	20.35	2288	5.8	34.4
3016	20.35	20.83	2336	5.8	35.1
3017	20.83	21.31	2385	5.8	35.9
3018	21.31	21.79	2434	5.8	36.7
3019	21.79	22.27	2482	5.8	40.0
3020	22.27	22.75	2531	5.8	40.8
3021	22.75	23.23	2580	5.8	41.5
3022	23.23	23.71	2628	5.8	42.3
3023	23.71	24.19	2677	5.8	43.0
3024	24.19	24.67	2725	5.8	43.8
3025	24.67	25.15	2774	5.8	44.6
3026	25.15	25.63	2823	5.8	45.3
3027	25.63	26.11	2871	5.8	46.1
3028	26.11	26.59	2920	5.8	46.8
3029	26.59	27.07	2969	5.8	47.6
3030	27.07	27.55	3017	5.8	48.4

0.75% Slope — Channels: 3001 - 3020

160' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3001	13.15	13.87	1631	5.8	24.5
3002	13.87	14.59	1704	5.8	25.8
3003	14.59	15.31	1777	5.8	27.0
3004	15.31	16.03	1850	5.8	28.3
3005	16.03	16.75	1923	5.8	29.5
3006	16.75	17.47	1996	5.8	30.8
3007	17.47	18.19	2069	5.8	32.0
3008	18.19	18.91	2142	5.8	33.3
3009	18.91	19.63	2215	5.8	34.6
3010	19.63	20.35	2288	5.8	35.8
3011	20.35	21.07	2361	5.8	37.1
3012	21.07	21.79	2435	5.8	38.3
3013	21.79	22.51	2507	5.8	39.6
3014	22.51	23.23	2580	5.8	40.9
3015	23.23	23.95	2653	5.8	42.1
3016	23.95	24.67	2725	5.8	43.4
3017	24.67	25.39	2798	5.8	44.6
3018	25.39	26.11	2871	5.8	45.9
3019	26.11	26.83	2944	5.8	47.1
3020	26.83	27.55	3017	5.8	48.4

1% Slope — Channels: 3001 - 3015

120' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3001	13.15	14.11	1713	5.8	24.5
3002	14.11	15.07	1806	5.8	26.0
3003	15.07	16.03	1899	5.8	27.5
3004	16.03	16.99	1992	5.8	29.1
3005	16.99	17.95	2085	5.8	30.6
3006	17.95	18.91	2178	5.8	32.1
3007	18.91	19.87	2271	5.8	33.6
3008	19.87	20.83	2363	5.8	35.1
3009	20.83	21.79	2456	5.8	36.7
3010	21.69	22.75	2549	5.8	40.8
3011	22.69	23.71	2642	5.8	42.3
3012	23.63	24.67	2735	5.8	43.8
3013	24.56	25.63	2828	5.8	45.3
3014	25.56	26.59	2921	5.8	46.8
3015	26.50	27.55	3017	5.8	48.4

1.25% Slope Channels: 3001 - 3012

96' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3001	13.15	14.35	1680	5.8	24.5
3002	14.35	15.55	1802	5.8	26.7
3003	15.55	16.75	1923	5.8	28.8
3004	16.75	17.95	2045	5.8	31.0
3005	17.95	19.15	2166	5.8	33.2
3006	19.15	20.35	2288	5.8	35.4

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3007	20.35	21.55	2409	5.8	37.5
3008	21.55	22.75	2534	5.8	39.7
3009	22.75	23.95	2653	5.8	41.9
3010	23.95	25.15	2774	5.8	44.1
3011	25.15	26.35	2896	5.8	46.2
3012	26.35	27.55	3017	5.8	48.4

3000 Series Grates

Fiberglass

Designed for use with POLYCAST® 3000 Vinyl Ester channels in areas requiring extreme chemical resistance.

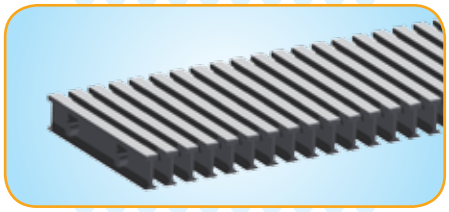
Part No. DG3044

Open Area: 38 in²/Linear Foot

Dimensions: 8” x 48” x 1.5”

Weight: 12 lbs.

Slot Size: 0.38" wide



Ductile Iron Slotted

A heavy duty grate suitable for frequent traffic applications. Exceeds AASHTO H-20 and FAA AC 150/5320-6D requirements.

Part No. DG3041D

Open Area: 42 in²/Linear Foot

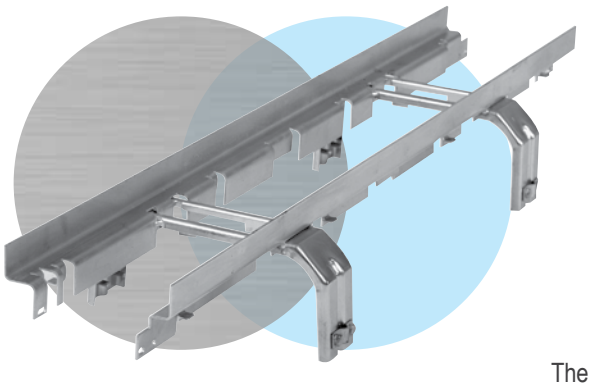
Dimensions: 8” x 24” x 1.5”

Weight: 36 lbs.

ASTM A536 Class 65-45-12

Slot Size: 1.38" x 6.50" wide

Accessories



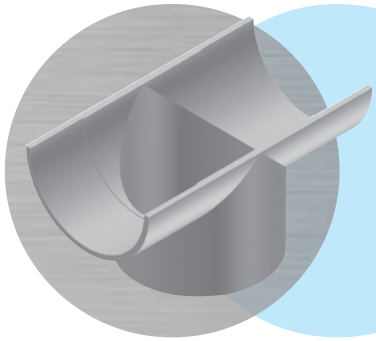
Frames

48” Dual Plated Corrosion-Resistant Channel Frame (Required)

Part No.: DG3700 ANSI 1018, ASTM A-36, Zinc-Plated 11 Gauge Steel; DG3700S 18-8 Stainless Steel

The channel frame, an integral required part of the drain system, is available in either zinc plated steel or stainless steel.

Outlet Adapter

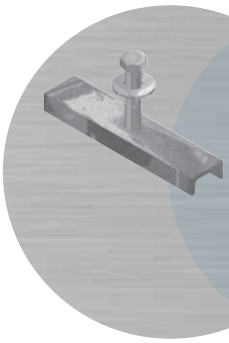


Bottom Outlet Adapter*

Part No. DA3000S

Material - PVC

Grate Hold-Down Device

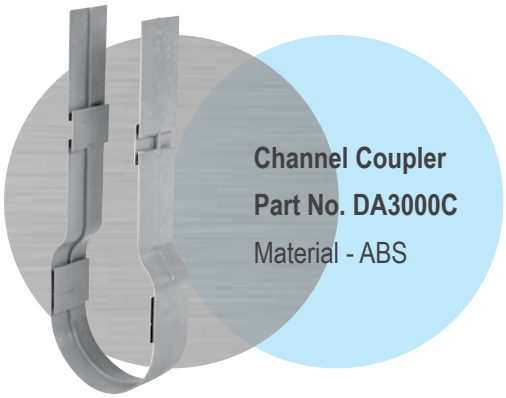


Grate Hold-Downs

Part No. DA3042B

Zinc-plated Steel

Channel Coupler



Channel Coupler

Part No. DA3000C

Material - ABS

End Caps

End Cap Adapters with cut-out diaphragms (glueable to PVC pipe)

Part No. DA3000A

Material - ABS

Channel couplers and end cap adapters are ABS plastic. The specially designed end cap adapter can be used to close off the system, or the diaphragm can be cut out to allow connections to standard 8” PVC pipe.

* Installation Instructions (if applicable) - Place bottom outlet adapter in desired location and mark channel for pipe cutout. For best results, cut channel with jig saw. Attach bottom outlet adapter with two sheetrock screws.

POLYCAST® Specifications

3000 SERIES

General: The work specified in this section shall consist of furnishing and installing preformed trench drains including drain channels, frames, grates, and accessories as shown on the contract plans. The surface drainage system shall consist of 3000 Series Extra High Capacity Trench Drain. One manufacturer shall provide all drain components unless noted otherwise at piping connections. The number of component joints shall be minimized for products in this section.

Materials: The preformed trench drain shall be a polyester matrix as shown on the contract plans. The bottom dimensions shall be 8.63" inside to match 8" diameter pipe with lateral sidewall transitions and shall have a full radius. The frame shall fully support the grate and transfer vertical loads linearly into adjacent concrete. Sloped and non-sloped channels shall be used as shown in contract plans. Channels shall be 8' long. Sloped channels shall have an inverted slope of 0.5%, 0.75%, 1%, or 1.25% as determined by the contract plans. Maximum capacity without extensions shall be 3000 GPM at flat and level grade. The channels shall permit a continuously sloped run of up to 240' without extensions.

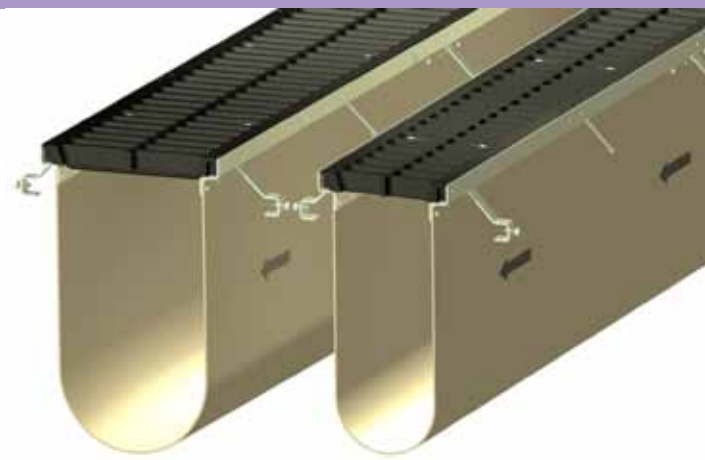
The polymer concrete shall have minimum material properties as follows:

DESCRIPTION	TEST METHOD	VALUES
Water absorption:	ASTM 5-570	<1%
Chemical resistance:	ASTM D-543	75% strength, <2% change in weight/dimension
Accelerated service:	ASTM D-7566-E	75% strength, <2% change in weight/dimension
CTE (coefficient of thermal expansion):	ASTM D-696	4.4x10-6 in/in/°F

Grates and Frames: The grating and frames shall be made of steel (ASTM A-36), ductile iron (ASTM A-536 minimum grade 65-45-12), or gray iron (ASTM A-48) and meet AASHTO HS-20 and FAA load requirements. The frames shall be non-removable from the concrete. The grates shall be removable or non-removable as shown on the contract plans. The removable grates shall have threaded bolt lockdowns that do not unduly impede fluid flow in the channel. The lockdowns shall withstand cyclical loads of 700 pounds after salt exposure per ASTM B-517. Non-removable grates shall have integrally cast anchoring lugs with terminus interlock.

Installation: The manufacturer's installation recommendations shall be followed. The reinforcement in the concrete surrounding the drain shall be adequate for the anticipated loads. The trench drain shall not be used in place of a defacto expansion joint.

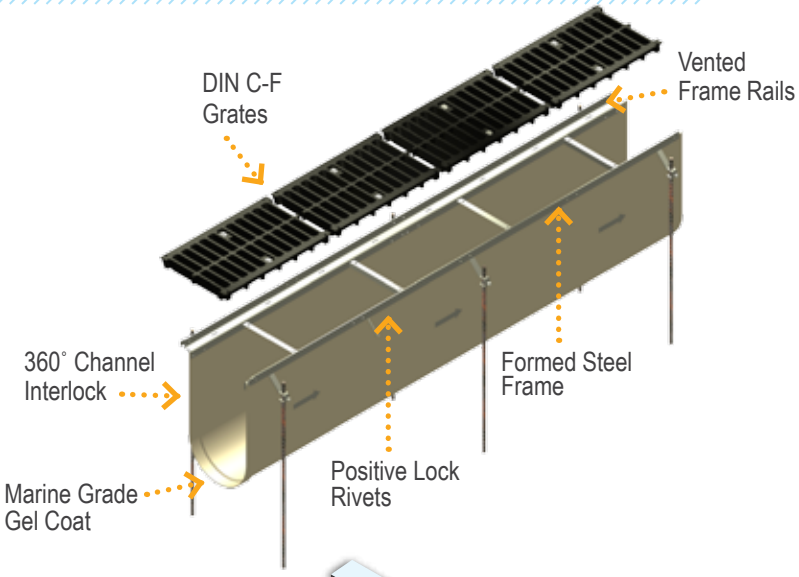
POLYCAST© FP800 & FP1200



The POLYCAST© FP800 and FP1200 Series are the ideal solutions for high volume flow situations such as airports, roadways, and seaports. Designed with the installer in mind, this revolutionary design incorporates full 360° interlocks and prefabricated turns and tees to minimize installation time.

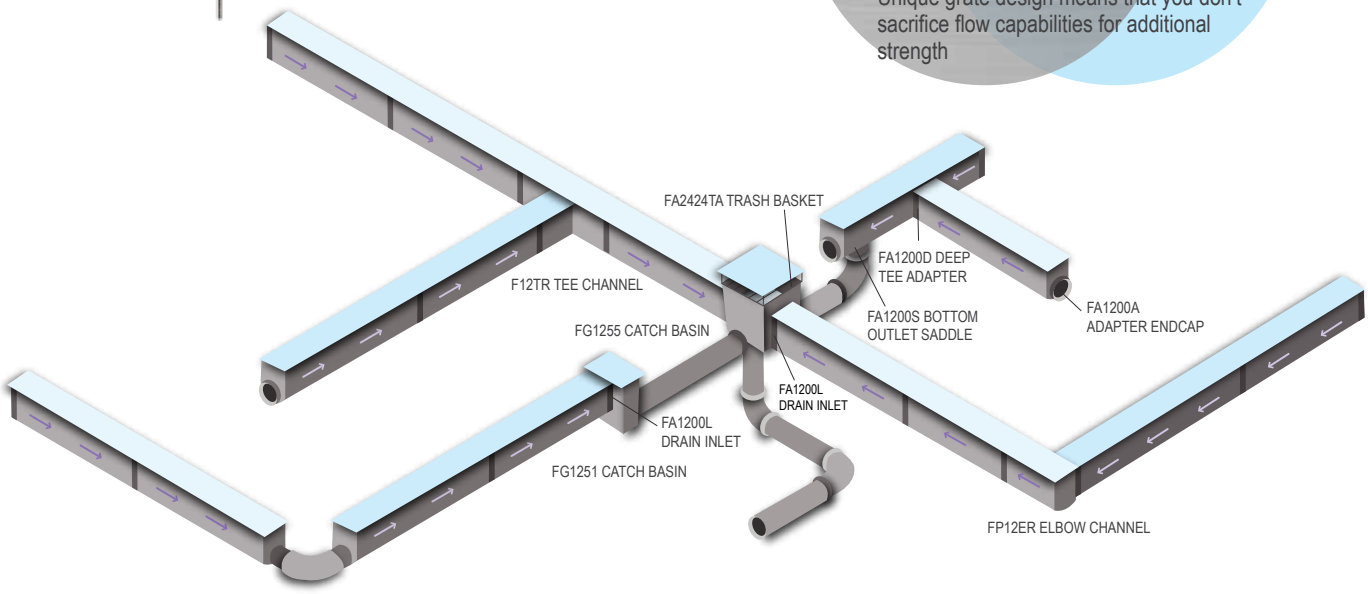
The drain is available in 8" and 12" widths and comes in both 4' and 8' lengths for maximum flexibility. Flow rates of up to 6700 GPM can be achieved over 120' of continuous 1% slope. Grates are available to meet DIN load classes C through F. Three separate grate options are available for each size that exceed FAA AC150/5320 loading criteria for airports, and all grates meet or exceed AASHTO M-306 loading criteria for roadways.

Advantages

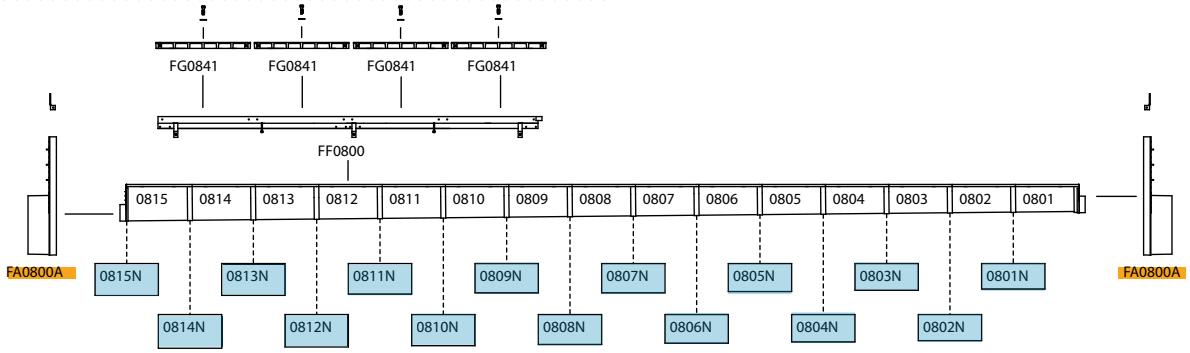


- Positive lock rivets attach channels to frame and will NOT pull out
- Direction arrows and channel numbers ensure correct installation
- Marine grade gel coat provides UV stability and excellent wetted surface features
- Vented frame rails prevent air entrapment which can cause weakening of the slab and premature failure

- 360° interlock for up to 20% faster assembly
- 120' of 1% continuous slope
- Fiberglass walls are up to 80% thicker than the competition
- Grates have inlet flow of up to 30% more than the competition
- Unique grate design means that you don't sacrifice flow capabilities for additional strength



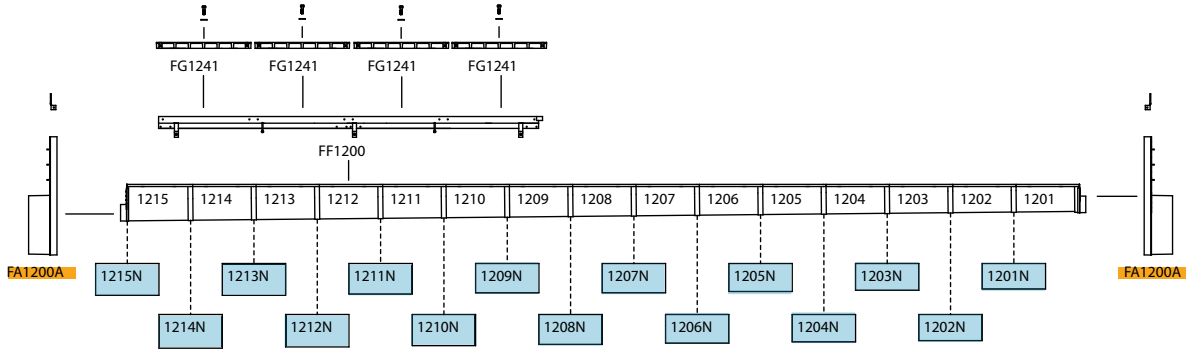
FP800 Drain Configuration



Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
0801	6.11	7.07	1249	5.97	18.64
0802	7.07	8.03	1425	5.97	21.39
0803	8.03	8.99	1602	5.97	24.14
0804	8.99	9.95	1781	5.97	26.89
0805	9.95	10.91	1960	5.97	29.64
0806	10.91	11.87	2139	5.97	32.39
0807	11.87	12.93	2319	5.97	35.14
0808	12.83	13.79	2500	5.97	37.89

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
0809	13.79	14.75	2681	5.97	40.64
0810	14.75	15.71	2862	5.97	43.39
0811	15.71	16.67	3044	5.97	46.14
0812	16.67	17.63	3226	5.97	48.89
0813	17.63	18.59	3408	5.97	51.64
0814	18.59	19.55	3590	5.97	54.39
0815	19.55	20.51	3772	5.97	57.14

FP1200 Drain Configuration



Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
1201	8.07	9.03	2057	7.02	24.49
1202	9.03	9.99	2381	7.02	27.24
1203	9.99	10.95	2709	7.02	29.99
1204	10.95	11.91	3040	7.02	32.74
1205	11.91	12.87	3374	7.02	35.49
1206	12.87	13.83	3710	7.02	38.24
1207	13.83	14.79	4047	7.02	40.99
1208	14.79	15.75	4387	7.02	43.74

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
1209	15.75	16.71	4728	7.02	46.49
1210	16.71	17.67	5069	7.02	49.24
1211	17.67	18.63	5412	7.02	51.99
1212	18.63	19.59	5756	7.02	54.74
1213	19.59	20.55	6101	7.02	57.49
1214	20.55	21.51	6446	7.02	60.24
1215	21.51	22.47	6792	7.02	62.99

FP800 Series Grates

Ductile Iron Slotted

A ductile iron grate designed for general use as well as roadside and light traffic applications.

Part No. FG0841

Open Area: 69.8 in² / Linear Foot

Dimensions: 10.63" x 24"

Weight: 32 lbs.

Slot Size: 1.55" x 3.91"

Ductile Iron Slotted

A ductile iron grate designed for use in frequent traffic areas as well as for hard wheel forklifts and light airport areas.

Part No. FG0842

Open Area: 69.8 in² / Linear Foot

Dimensions: 10.63" x 24"

Weight: 39.5 lbs.

Slot Size: 1.55" x 3.91"

Transverse Slotted

A transverse slotted *ADA compliant* grate. This ductile iron grate is for use in frequent traffic areas, for hard wheel forklifts, and light port areas.

ADA Compliant.

Part No. FG0875

Open Area: 43 in² / Linear Foot

Dimensions: 10.63" x 24"

Weight: 44 lbs.

Slot Size: 0.32" wide

Ductile Iron Slotted

A ductile iron slotted grate designed for use if the most harsh environments including all airports, docks, and heavy traffic areas.

Part No. FG0846

Open Area: 69.8 in² / Linear Foot

Dimensions: 10.63" x 24"

Weight: 41 lbs.

Slot Size: 1.55" x 3.91"

FP1200 Series Grates

Ductile Iron Slotted

A ductile iron grate designed for general use as well as roadside and light traffic applications.

Part No. FG1241

Open Area: 107.5 in² / Linear Foot

Dimensions: 14.63” x 24”

Weight: 47 lbs.

Slot Size: 1.55” x 5.88”

Ductile Iron Slotted

A ductile iron grate designed for use in frequent traffic areas as well as for hard wheel forklifts and light airport areas.

Part No. FG1242

Open Area: 107.5 in² / Linear Foot

Dimensions: 14.63” x 24”

Weight: 58 lbs.

Slot Size: 1.55” x 5.88”

Transverse Slotted

A transverse slotted *ADA compliant* grate. This ductile iron grate is for use in frequent traffic areas, for hard wheel forklifts, and light port areas.

ADA Compliant.

Part No. FG1275

Open Area: 62 in² / Linear Foot

Dimensions: 14.63” x 24”

Weight: 66 lbs.

Slot Size: 0.32” wide

Ductile Iron Slotted

A ductile iron slotted grate designed for use in the most harsh environments including all airports, docks, and heavy traffic areas.

Part No. FG1246

Open Area: 107.5 in² / Linear Foot

Dimensions: 14.63” x 24”

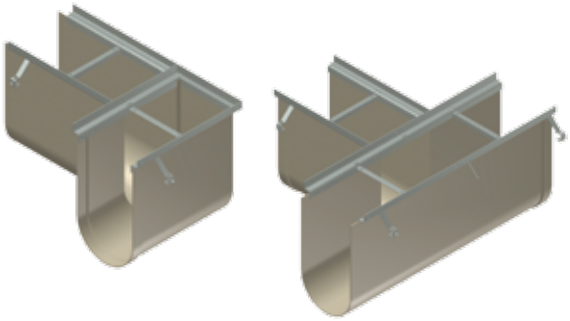
Weight: 66 lbs.

Slot Size: 1.55” x 5.88”

Accessories

POLYCAST FP800 & FP1200 are designed for the fastest and easiest possible installation. POLYCAST supplies pre-built elbows and tee adapters in three depths: 5, 10, and 15 for both sizes of channels. Elbows and Tees are available in right side and left side outlets.

Elbow & Tee Adapters



Part No. FP 12 10 R E

- Series (08, 12)
- Depth (05, 10, 15)
- Right Hand/ Left Hand (R, L)
- Elbow or Tee (E, T)

Bottom Outlet Adapters

Designed to create bottom outlets by accepting PVC pipe sizes 6”-10”.

Part No. FA0800S

FA1200S

Material - ABS

Splice Adapters

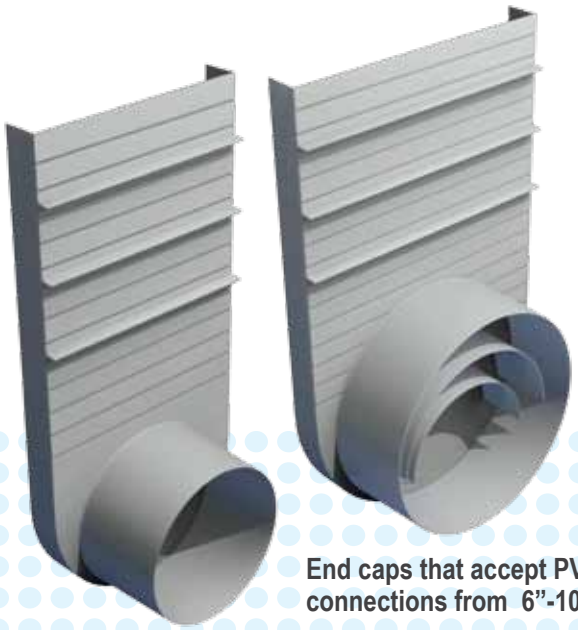
Traditional splice adapters for highly customized applications.

Part No. FA0800D

FA1200D

Material - ABS

End Cap / Pipe Adapters



End caps that accept PVC pipe connections from 6”-10”.

Part No. FA0800A
Part No. FA1200A

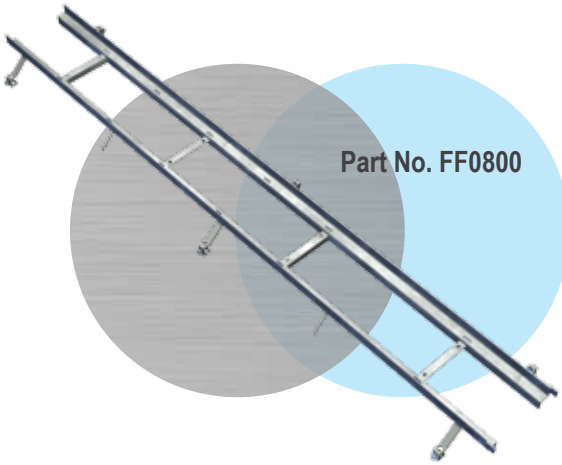
Material - ABS

GR8 TIPS

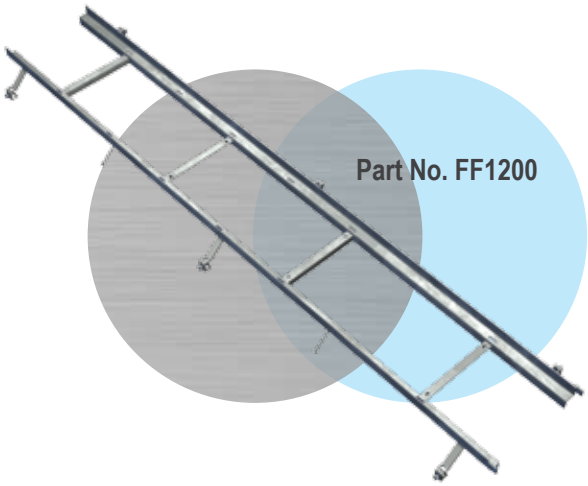
Labor Saver: All POLYCAST systems are designed for fast and easy installation by utilizing longer channel lengths, full interlocks, and rebar hangers.

Accessories

Drain Channel Frame

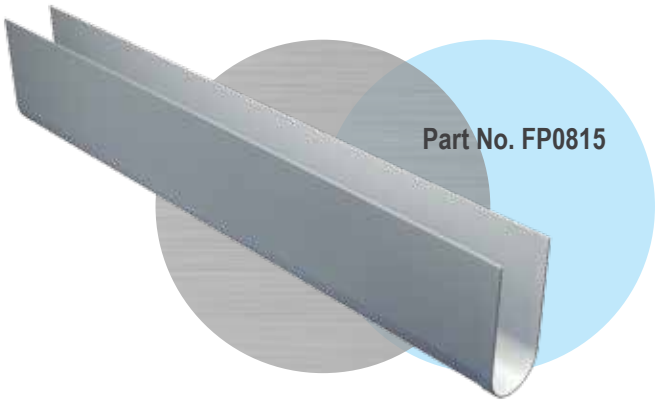


Part No. FF0800

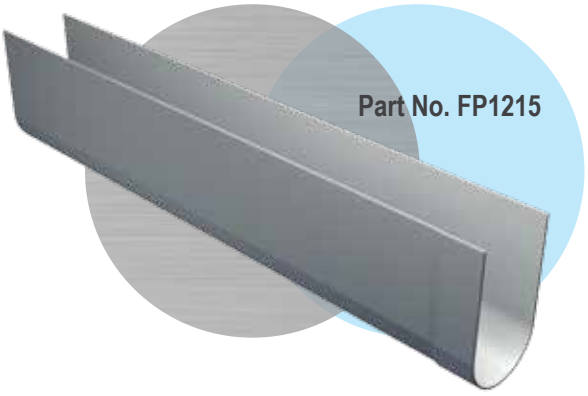


Part No. FF1200

Drain Channel



Part No. FP0815



Part No. FP1215

Catch Basins & Accessories

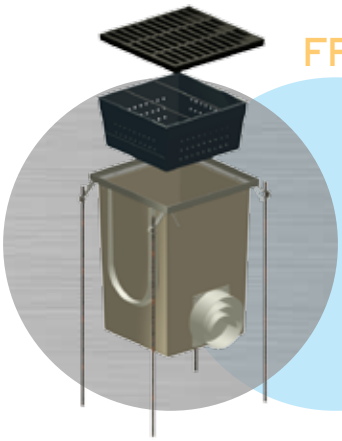
FP1251 Catch Basin

12”x24” Catch Basin
32" Deep

For use with both FP800 Series and FP1200 Series

Basin P/N: FP1251
Frame P/N:1251

Fits all standard FP1200 Series grates. See page 19.



FP1255 Catch Basin

24”x24” Catch Basin
32" Deep

For use with both FP800 Series and FP1200 Series

Basin P/N: FP1255
Frame P/N:1255

Fits grating shown below

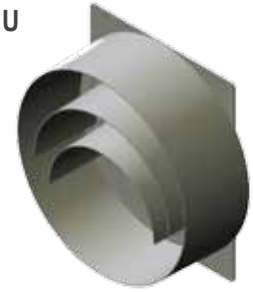
Accessories

ABS Plastic Catch Basin Inlets

FA0800L **FA1200L**

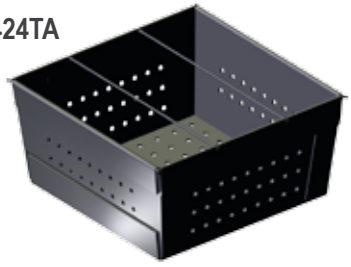
ABS Plastic Catch Basin Pipe Outlet for 6", 8", 10" Pipe

FA1251U

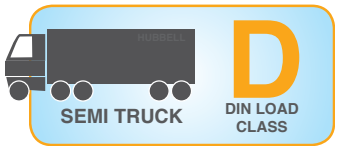


24"x24" HDPE Plastic Trash Basket

FA2424TA



FP1255 Catch Basin Grates

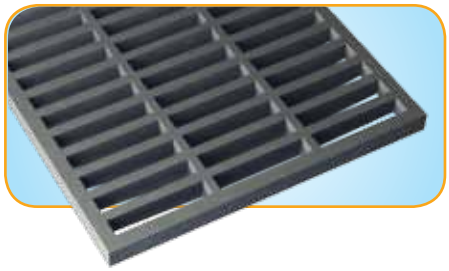


Ductile Iron Slotted

Designed for frequent heavy traffic.

Part No. DG0653D

Open Area: 288 in²/Linear Foot
Dimensions: 23-3/4” x 23-3/4”
Weight: 130 lbs.
ASTM A536 Class 65-45-12
Black Finish
Slot Size: 1.25" x 6.75"



POLYCAST© Specifications

FP800 & FP1200

General: The work specified in this section shall consist of furnishing and installing preformed trench drains including drain channels, frames, grates, and accessories as shown on the contract plans. The surface drainage system shall be FP800 & FP1200 High Capacity Trench Drain. One manufacturer shall provide all drain components unless noted otherwise at piping connections. The number of component joints shall be minimized for products in this section.

Materials: The preformed trench drain shall be a polyester matrix as shown on the contract plans. The frame clear opening dimension shall be 7.92" for 800 Series and 11.86” for 1200 Series. The channel widths shall be 8.25” and 12.19”, respectively, with full bottom radii. The frame shall fully support the grate and transfer vertical loads linearly into adjacent concrete. Sloped and non-sloped channels shall be used as shown in contract plans. Channels shall be 8' long. Sloped channels shall have a minimum 1% inverted slope. Maximum capacity without extensions shall be 3700 GPM for 800 Series and 6800 GPM for 1200 Series at flat and level grade. The channels shall permit a continuously sloped run of 120' without extensions.

The fiberglass channels shall have minimum material properties as follows:

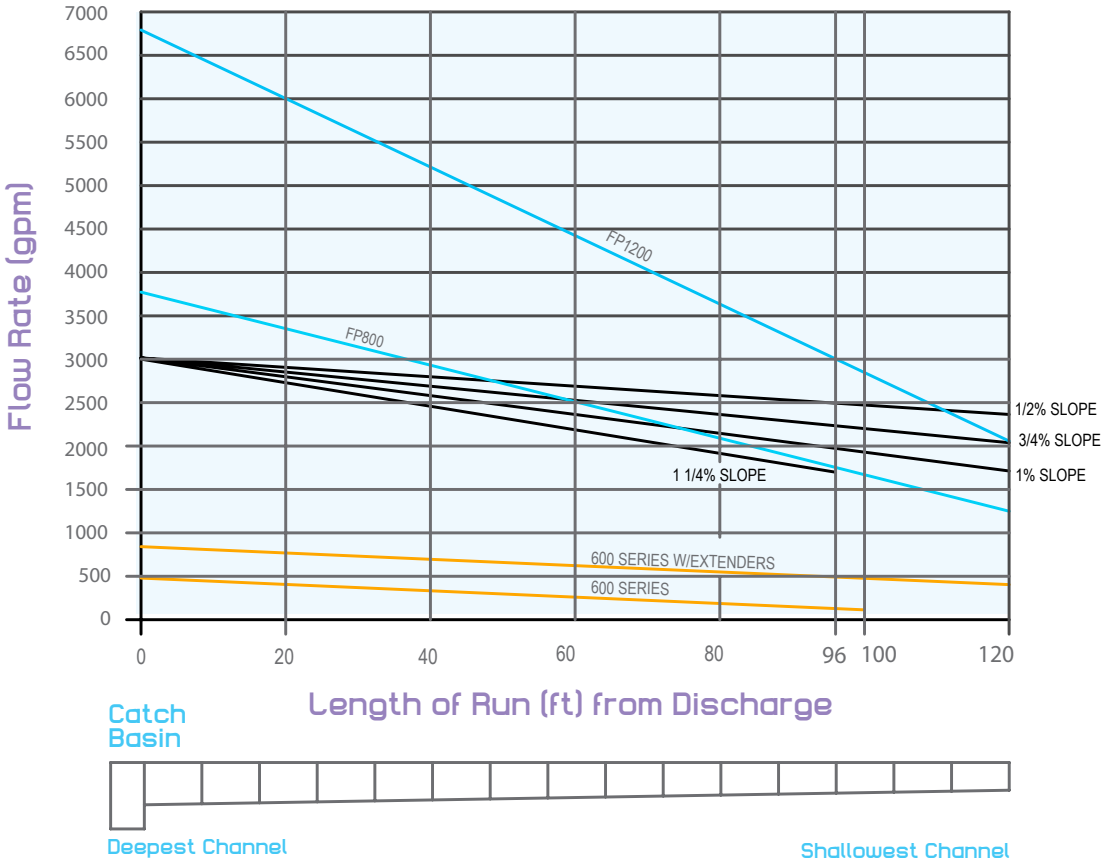
DESCRIPTION	TEST METHOD	VALUES
Water absorption:	ASTM 5-570	<1%
Chemical resistance:	ASTM D-543	75% strength, <2% change in weight/dimension
Accelerated service:	ASTM D-7566-E	75% strength, <2% change in weight/dimension
CTE (coefficient of thermal expansion):	ASTM D-696	4.4x10-6 in/in/°F

Grates and Frames: The grating and frames shall be made of steel (ASTM A-36), ductile iron (ASTM A-536 minimum grade 65-45-12), or gray iron (ASTM A-48) and meet AASHTO HS-20 and FAA load requirements. The frames shall be non-removable from the concrete. The grates shall be removable or non-removable as shown on the contract plans. The removable grates shall have threaded bolt lockdowns that do not unduly impede fluid flow in the channel. The lockdowns shall withstand cyclical loads of 700 pounds after salt exposure per ASTM B-517.

Installation: The manufacturer’s installation recommendations shall be followed. The reinforcement in the concrete surrounding the drain shall be adequate for the anticipated loads. The trench drain shall not be used in place of a defacto expansion joint.

SYSTEMS PERFORMANCE

Flow capacity for POLYCAST® drains



Flow Capacity for POLYCAST® drains

900 series

@ CATCH BASIN	@ 100 FT.
478.7 GPM	113.8 GPM

900 series w/ extenders

@ CATCH BASIN	@ 120 FT.
840 GPM	404 GPM

3000 series 1/2% slope

@ CATCH BASIN	@ 120 FT.
3017.2 GPM	2363 GPM

3000 series 3/4% slope

@ CATCH BASIN	@ 120 FT.
3017.2 GPM	2038 GPM

3000 series 1% slope

@ CATCH BASIN	@ 120 FT.
3017.2 GPM	1655.7 GPM

3000 series 1 1/4% slope

@ CATCH BASIN	@ 96 FT.
3017.2 GPM	1655.7 GPM

FP800 series

@ CATCH BASIN	@ 120 FT.
3772 GPM	1249.2 GPM

FP1200 series

@ CATCH BASIN	@ 120 FT.
6791.6 GPM	2057.4 GPM

Effect of Non-Sloped Channels on Flow Capacity

*This graph is based on the Manning Equation

GR8 TIPS

Flow Capacity: Flow capacity is based on invert depth. Check drain configuration charts for each series to compare invert depths to flow capacity numbers.

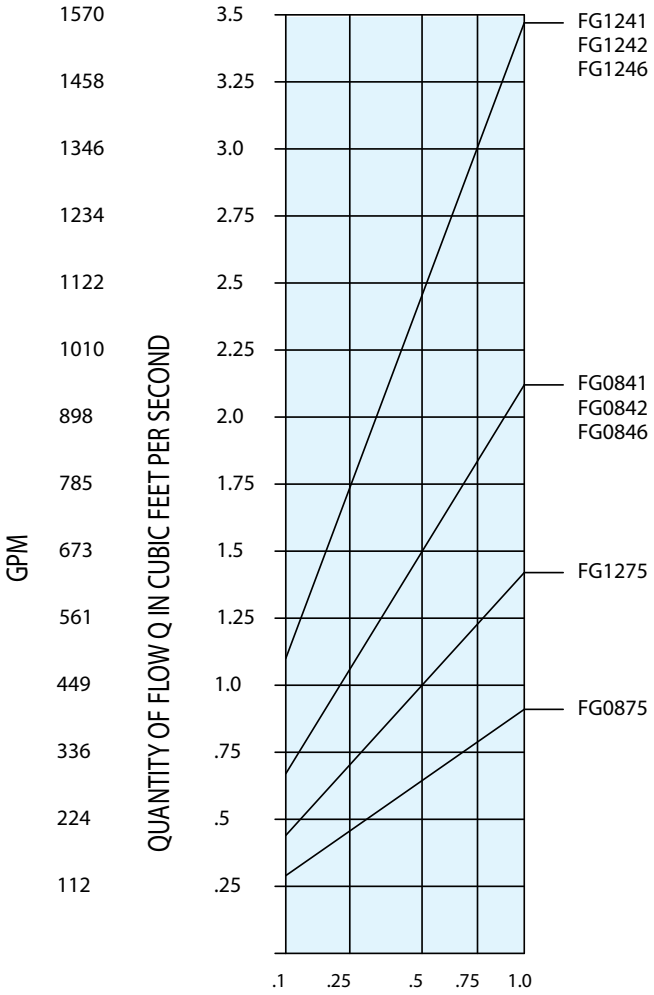
GRATE IN-FLOW CHARTS

Quantity of Flow Through

FP Series Grates

Based on 1 Linear Foot of Drain Channel

Computed using Orifice Equation $Q=CA\sqrt{2gh}$

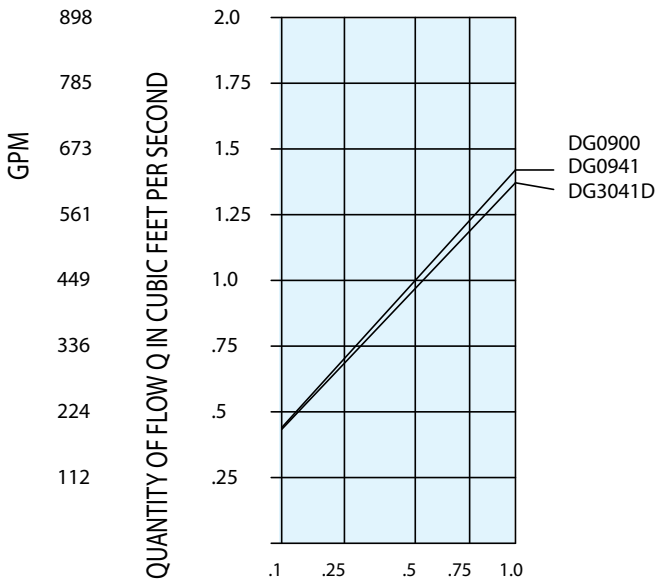


HEAD OF WATER ABOVE GRATE IN FEET

900 Series & 3000 Series Grates

Based on 1 Linear Foot of Drain Channel

Computed using Orifice Equation $Q=CA\sqrt{2gh}$

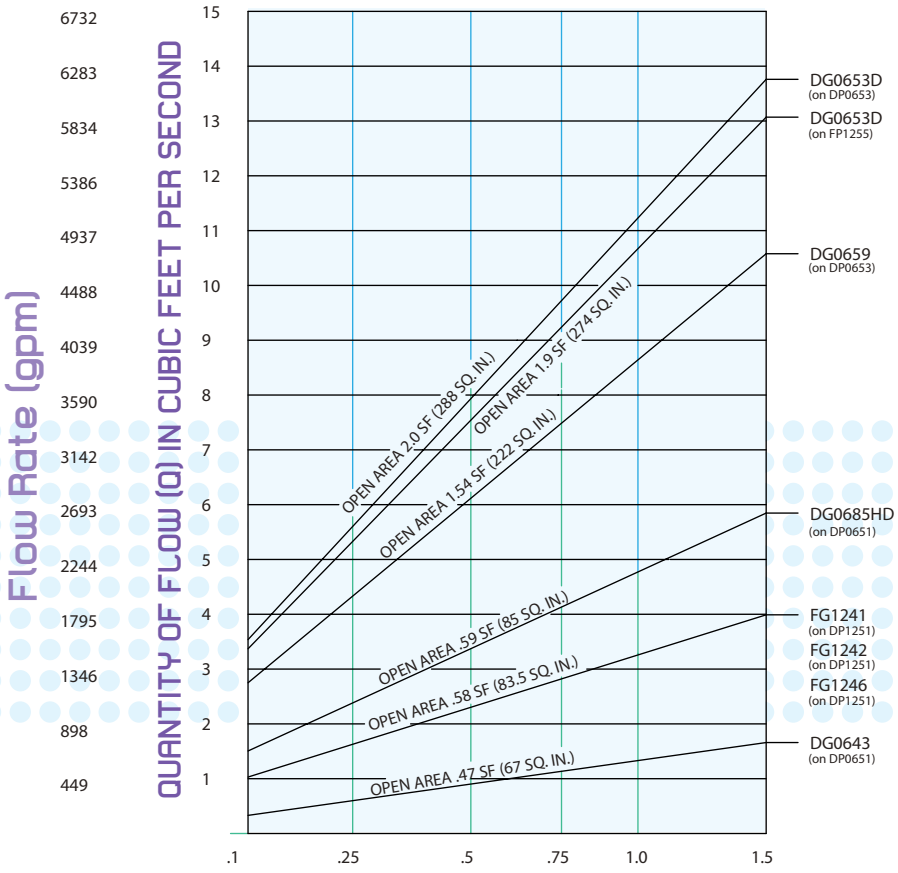


HEAD OF WATER ABOVE GRATE IN FEET

Quantity of Flow Through Catch Basin Grates

Based on 1' Catch Basin

Computed using Orifice Equation $Q=CA\sqrt{2gh}$



Head of Water Above Grate in Feet

DIN Application Load Class A - 3,372 lbs. - 15 kN

Residential, pedestrian, and cyclist traffic

DIN Application Load Class B - 28,100 lbs. - 125 kN

Sidewalks, parking lots, and car parking decks

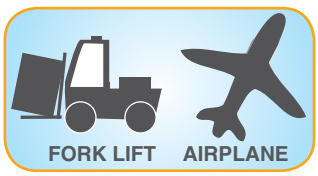
DIN Application Load Class C - 56,200 lbs. - 250 kN

Curb sides, highway shoulders, and parking areas

DIN Application Load Class D - 89,920 lbs. - 400 kN

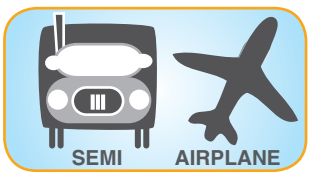
Trafficked sections of roads and highways

DIN Application Load Class E - 134,800 lbs. - 600 kN



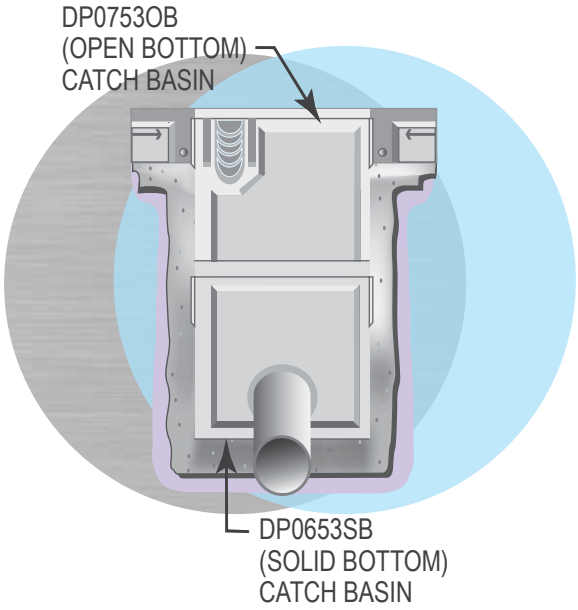
Industrial areas, forklifts, traffic, ports, and dock sides

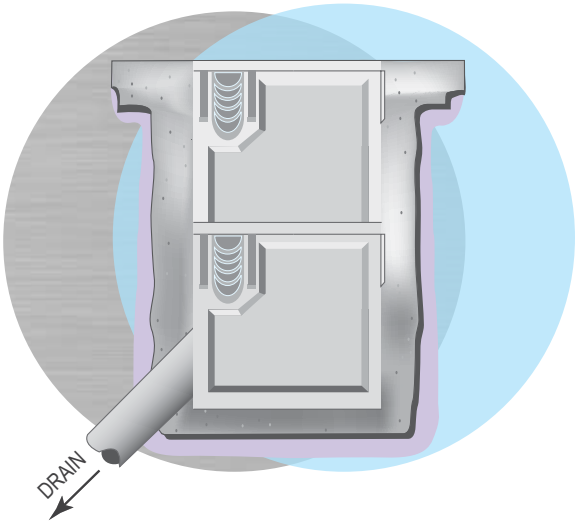
DIN Application Load Class F - 202,320 lbs. - 900 kN

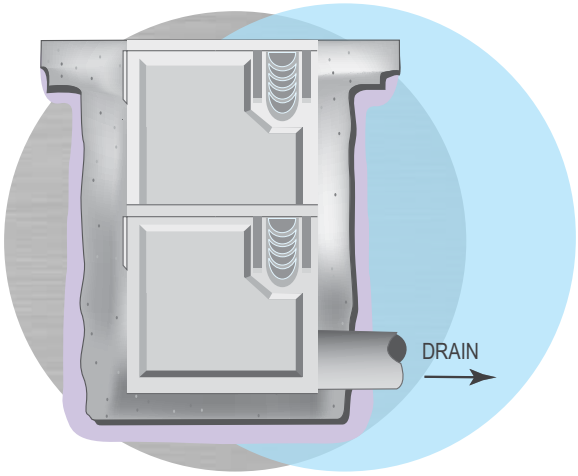


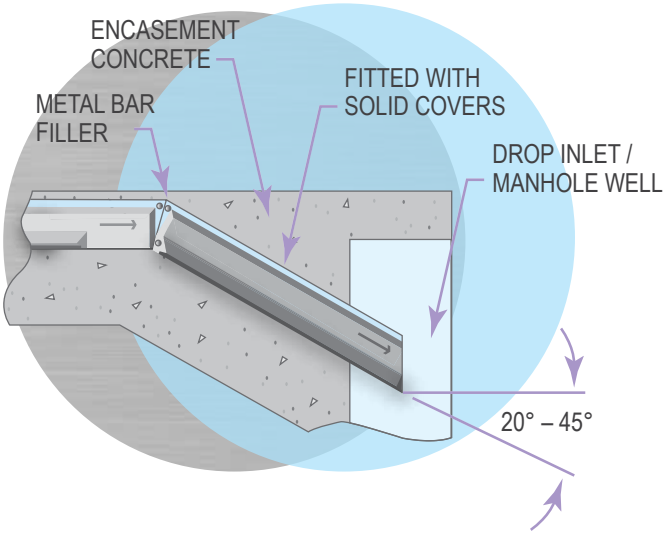
Aircraft runways, docks, and high impact wheel loads

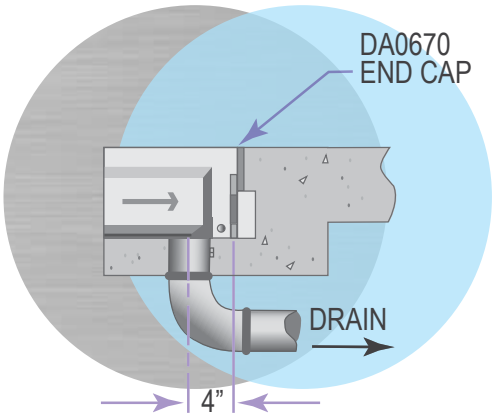
POLYCAST® 900 Series Typical Details





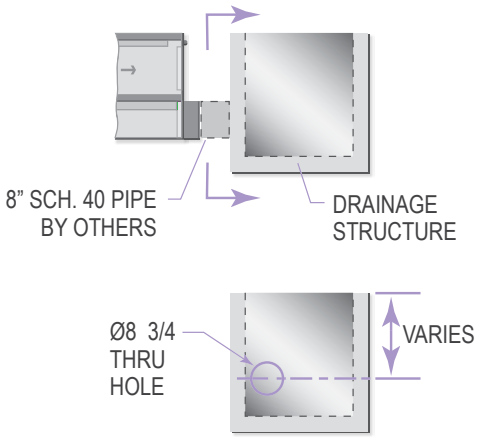


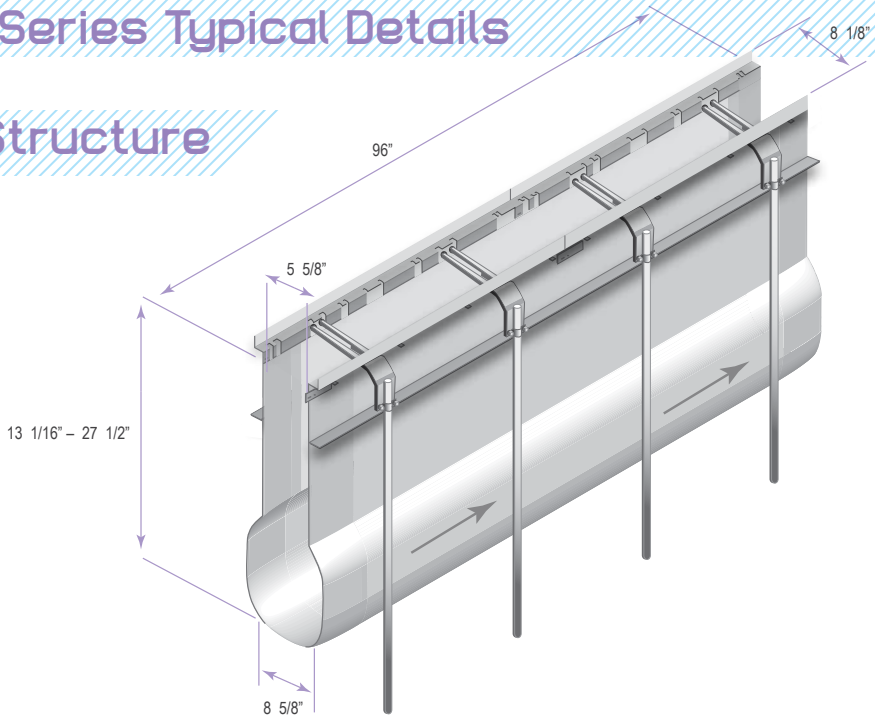




POLYCAST® 3000 Series Typical Details

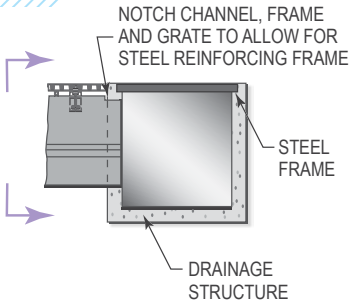
8" Pipe to Drainage Structure

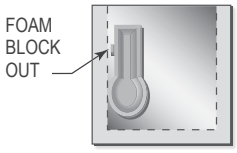




Drainage Structure Details

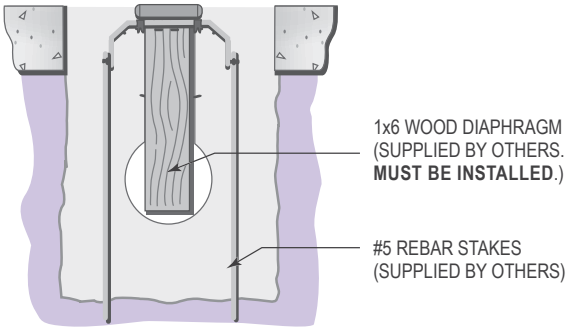
RETRO FIT
CHANNEL NOT SHOWN FOR CLARITY



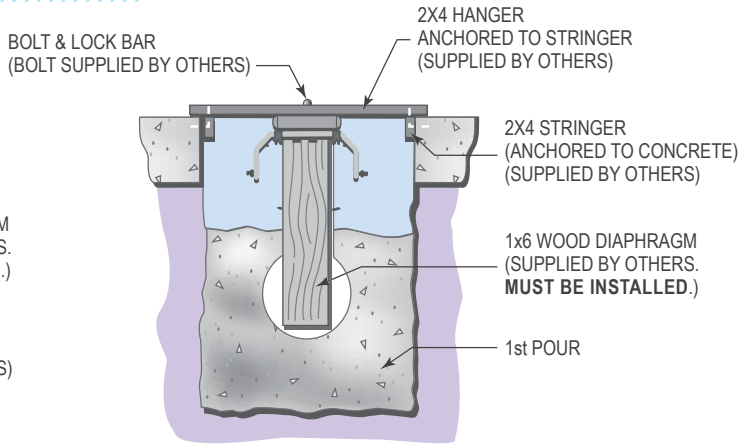


NEW CONSTRUCTION
CHANNEL NOT SHOWN FOR CLARITY

Channel Installation Methods



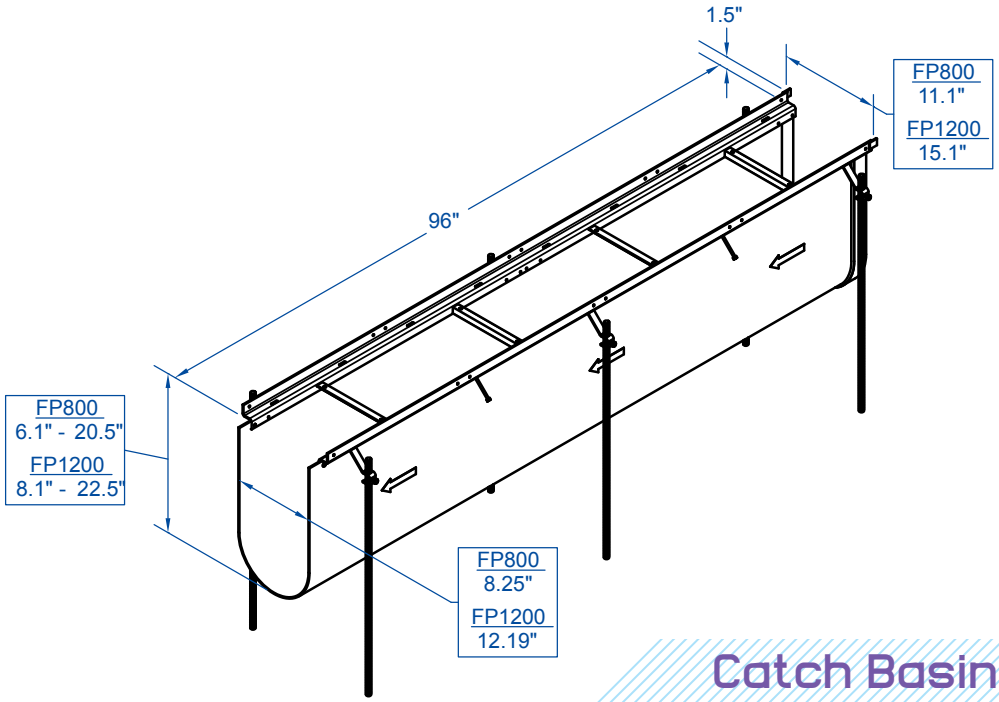
SUB-BASE STAKED METHOD
1 LIFT POUR



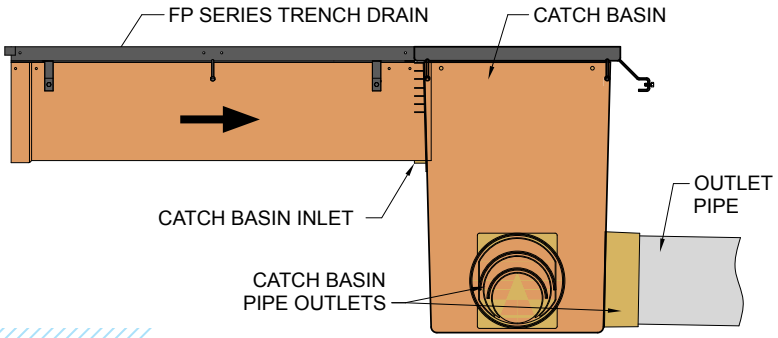
HANGING METHOD
2 LIFT POUR

NOTE: GRATE WAS ASSEMBLED WITH 2X4, BOLT, WASHER AND NUT PRIOR TO ATTACHING TO STRINGERS

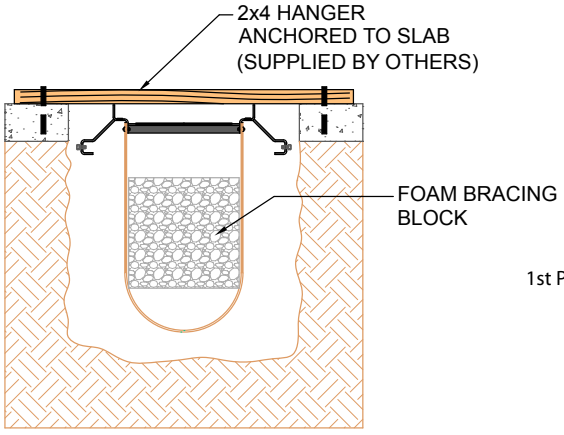
POLYCAST® FP Series Typical Details



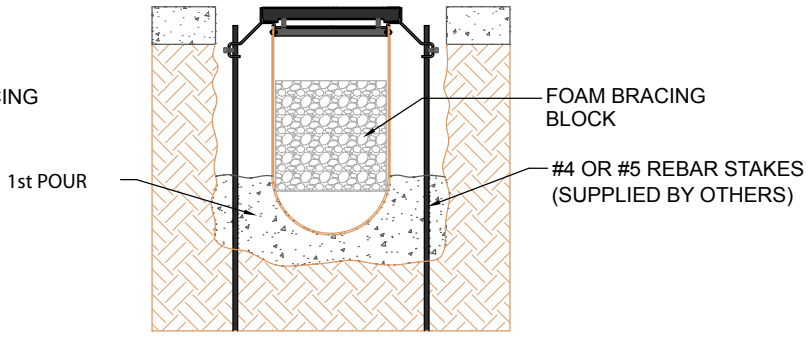
Catch Basin Details



Channel Installation Methods



SUB-BASE STAKED METHOD
1 LIFT POUR (IF ADEQUATELY ANCHORED)



HANGING METHOD
2 LIFT POUR

Applicable Standards

900 Series

AASHTO H-20 or HS-20

AASHTO M306-07 modified 9"x 9" load plate replaced with 18" long x 4" diameter steel rod

ASTM A536 Class 65-45-12

CALTRANS Section 10-1.35, "Grated Line Drain"

CALTRANS Section 75-1.02, "Miscellaneous Iron and Steel"

FAA publication AC 150/5320-6D, "Airport Pavement Design and Evaluation"

DIN 19580

3000 Series & FP Series

AASHTO-H029

AASHTO M306-89, Section 7, "Standard Specification for Drainage Structure Castings"

ASTM A-48 Class 30

FAA publication AC 150/5320-6D, "Airport Pavement Design and Evaluation"

Federal Specification AA-60005E, "Frames, covers, gratings, steps, manhole sumps, and catch basins"

DIN 19580

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