3000 SERIES™

FAST DRAINAGE • QUICK SOLUTIONS

PRESLOPED FIBERGLASS TRENCH DRAIN SYSTEM

TDS™

TRENCH DRAIN SYSTEMS

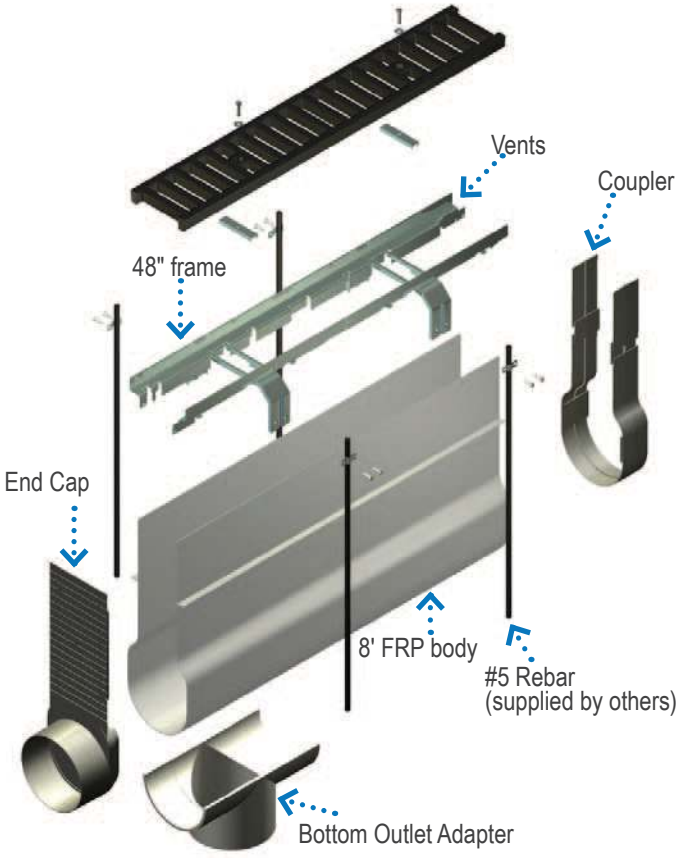
3000 SERIES™ Assembly

High Capacity Drain System

The 3000 SERIES™ is a high capacity drain system designed for airports, roadways, and other applications needing especially high flow volume. The 3000 SERIES™ 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.

*Vinyl Ester resin channels available by special order only.



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

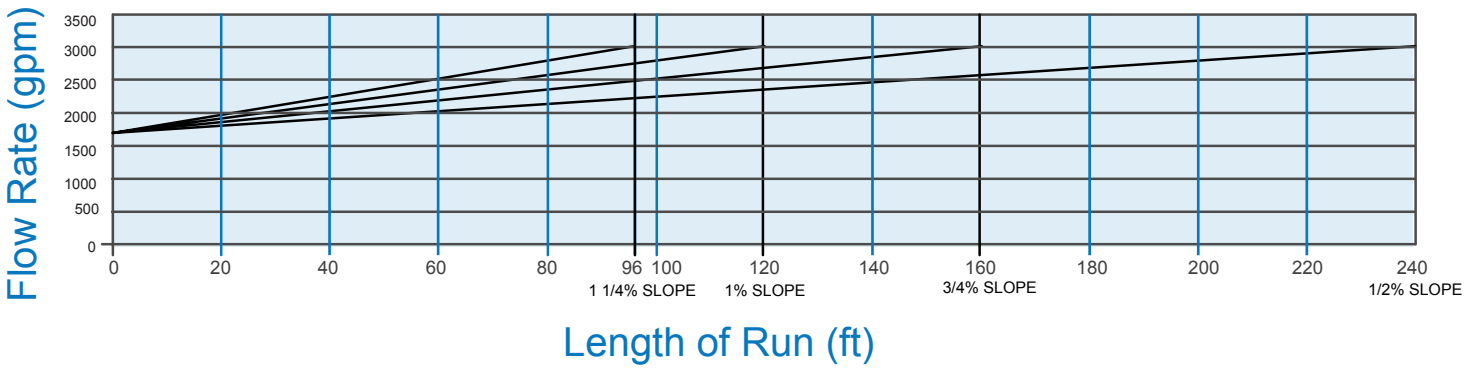
3000 SERIES

3000 SERIES™ Assembly

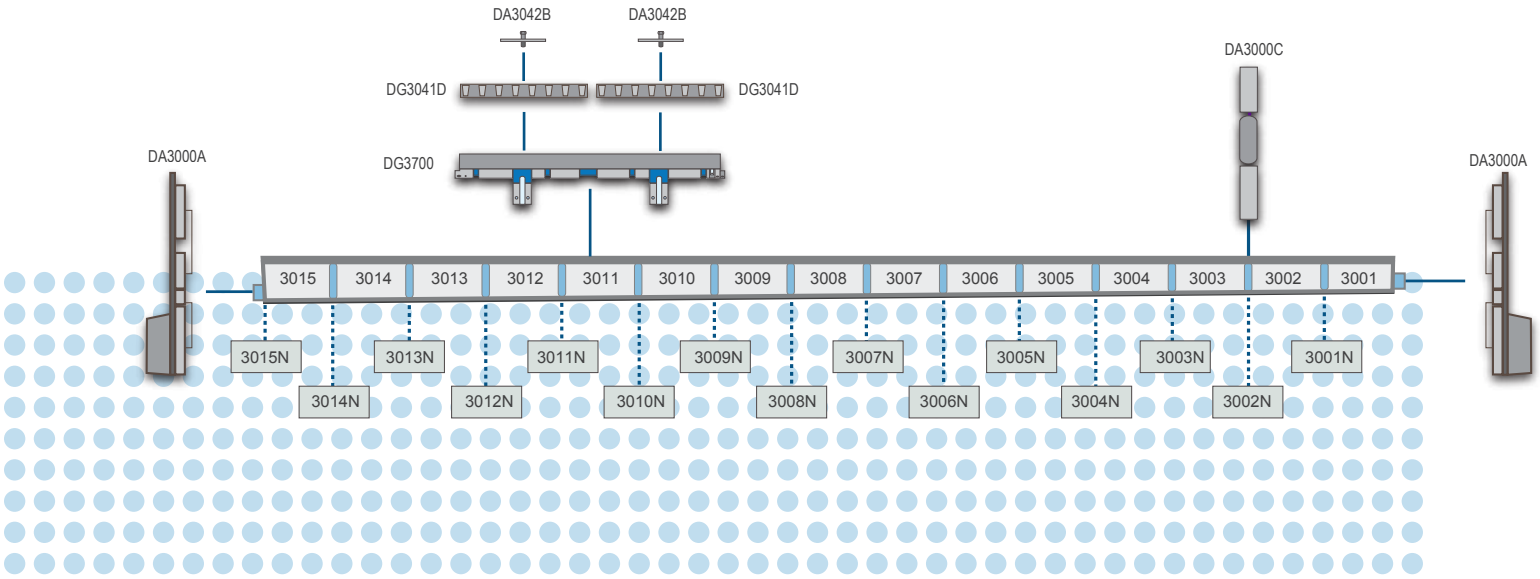
Custom Slope

3000 SERIES™ channels are regularly available with 1% built-in slope. Other slopes available as special order are 0.5%, 0.75% and 1.25%. 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: 3501 - 3530

240' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3501	14.78	15.26	1607	5.8	23.7
3502	15.26	15.74	1656	5.8	24.5
3503	15.74	16.22	1704	5.8	25.3
3504	16.22	16.70	1753	5.8	26.0
3505	16.70	17.18	1802	5.8	26.8
3506	17.18	17.66	1850	5.8	27.5
3507	17.66	18.14	1899	5.8	28.3
3508	18.14	18.62	1947	5.8	29.1
3509	18.62	19.10	1996	5.8	29.8
3510	19.10	19.58	2045	5.8	30.6
3511	19.58	20.06	2093	5.8	31.3
3512	20.06	20.54	2142	5.8	32.1
3513	20.54	21.02	2191	5.8	32.9
3514	21.02	21.50	2239	5.8	33.6
3515	21.50	21.98	2288	5.8	34.4

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3516	21.98	22.46	2336	5.8	35.1
3517	22.46	22.94	2385	5.8	35.9
3518	22.94	23.42	2434	5.8	36.7
3519	23.42	23.90	2482	5.8	40.0
3520	23.90	24.38	2531	5.8	40.8
3521	24.38	24.86	2580	5.8	41.5
3522	24.86	25.34	2628	5.8	42.3
3523	25.34	25.82	2677	5.8	43.0
3524	25.82	26.30	2725	5.8	43.8
3525	26.30	26.78	2774	5.8	44.6
3526	26.78	27.26	2823	5.8	45.3
3527	27.26	27.74	2871	5.8	46.1
3528	27.74	28.22	2920	5.8	46.8
3529	28.22	28.70	2969	5.8	47.6
3530	28.70	29.18	3017	5.8	48.4

0.75% Slope — Channels: 3701 - 3720

160' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3701	14.78	15.50	1631	5.8	24.5
3702	15.50	16.22	1704	5.8	25.8
3703	16.22	16.94	1777	5.8	27.0
3704	16.94	17.66	1850	5.8	28.3
3705	17.66	18.38	1923	5.8	29.5
3706	18.38	19.10	1996	5.8	30.8
3707	19.10	19.82	2069	5.8	32.0
3708	19.82	20.54	2142	5.8	33.3
3709	20.54	21.26	2215	5.8	34.6
3710	21.26	21.98	2288	5.8	35.8

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3711	21.98	22.70	2361	5.8	37.1
3712	22.70	23.42	2435	5.8	38.3
3713	23.42	24.14	2507	5.8	39.6
3714	24.14	24.86	2580	5.8	40.9
3715	24.86	25.58	2653	5.8	42.1
3716	25.58	26.30	2725	5.8	43.4
3717	26.30	27.02	2798	5.8	44.6
3718	27.02	27.74	2871	5.8	45.9
3719	27.74	28.46	2944	5.8	47.1
3720	28.46	29.18	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	14.78	15.74	1713	5.8	24.5
3002	15.74	16.70	1806	5.8	26.0
3003	16.70	17.66	1899	5.8	27.5
3004	17.66	18.62	1992	5.8	29.1
3005	18.62	19.58	2085	5.8	30.6
3006	19.58	20.54	2178	5.8	32.1
3007	20.54	21.50	2271	5.8	33.6
3008	21.50	22.46	2363	5.8	35.1

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3009	22.46	23.42	2456	5.8	36.7
3010	23.42	24.38	2549	5.8	40.8
3011	24.38	25.34	2642	5.8	42.3
3012	25.34	26.30	2735	5.8	43.8
3013	26.30	27.26	2828	5.8	45.3
3014	27.26	28.22	2921	5.8	46.8
3015	28.22	29.18	3017	5.8	48.4

1.25% Slope Channels: 3201 - 3212

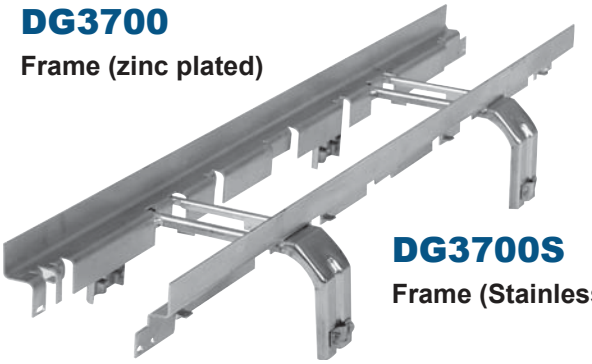
96' Maximum Length of Continuous Slope

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3201	14.78	15.98	1680	5.8	24.5
3202	15.98	17.18	1802	5.8	26.7
3203	17.18	18.38	1923	5.8	28.8
3204	18.38	19.58	2045	5.8	31.0
3205	19.58	20.78	2166	5.8	33.2
3206	20.78	21.98	2288	5.8	35.4

Part Number	Inlet Depth (in.)	Outlet Depth (in.)	Flow (gpm)	Flow Velocity (fps)	Wt. (lbs.)
3207	21.98	23.18	2409	5.8	37.5
3208	23.18	24.38	2534	5.8	39.7
3209	24.38	25.58	2653	5.8	41.9
3210	25.58	26.78	2774	5.8	44.1
3211	26.78	27.98	2896	5.8	46.2
3212	27.98	29.18	3017	5.8	48.4

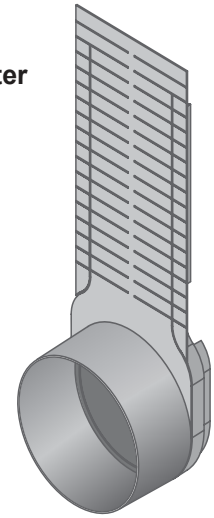
Accessories

DG3700
Frame (zinc plated)

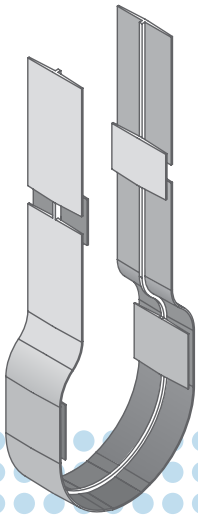


DG3700S
Frame (Stainless Steel)

DA3000A
End Cap / Pipe Adapter



DA3000C
Channel Coupler



DA3000S
Bottom Outlet Pipe Adapter

3000 SERIES™ Grates

FIBERGLASS

Fiberglass mesh grate. Normally used in areas where extreme chemical resistance is needed but with no heavy loads. Gritted top non-slip surface.

Part No. DG3045

Dimensions: 7-7/8” x 47-3/4” x 1.5”

Open Area: 67 in^2/Linear ft.

Weight: 11.1 lbs.

Mesh Openings: 1-3/16” x 1-1/4”

FIBERGLASS

Fiberglass I-Bar grate. Normally used in areas where extreme chemical resistance is needed but with Class C loads. Gritted top non-slip surface.

Part No. DG3044

Dimensions: 7-7/8” x 47-3/4” x 1.5”

Open Area: 38 in^2/Linear ft.

Weight: 12 lbs.

Slot Size: 0.38” wide

Galvanized Steel

Exceeds AASHTO H-20, FAA requirements. High Volume. Galvanized steel bar grating provides clean drainage with 69% open area.

Part No. DG3048R

Dimensions: 7-7/8” x 23-3/4” x 1.5”

Open Area: 66 in^2/Linear ft.

Weight: 23.2 lbs.

Slot Size: 1” wide

Stainless Steel

Exceeds AASHTO H-20, FAA requirements. High volume. Stainless bar grating ensures chemical resistance while carrying heavy loads. 69% open area.

Part No. DG3047R

Dimensions: 7-7/8” x 23-3/4” x 1.5”

Open Area: 66 in^2/Linear ft.

Weight: 23 lbs.

Slot Size: 1” wide

Ductile Iron

Ductile iron Class D400 grate. Meets AASHTO M306-10, H-20, HS25 requirements. Designed with open area (63.5%) in mind.

Part No. DG3042D

Dimensions: 7-15/16” x 23-15/16” x 1.5”

Open Area: 60.9 in^2/Linear ft.

Weight: 18.9 lbs.

Slot Size: 1-1/4” wide

Ductile Iron

Ductile iron Class D400 grate. Meets AASHTO M306, H-20, HS25 requirements. ADA Compliant. Transverse slots eliminate trip hazards.

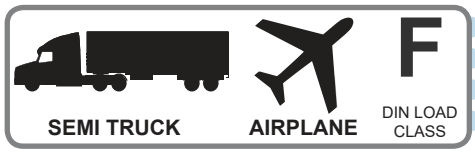
Part No. DG3043D

Dimensions: 7-15/16” x 23-15/16” x 1.5”

Open Area: 36.4 in^2/Linear ft.

Weight: 18.5 lbs.

Slot Size: 1/2” wide



Ductile Iron

A heavy duty grate suitable for frequent traffic applications. Exceeds AASHTO H-20 and FAA requirements.

Part No. DG3041D

Dimensions: 7-15/16” x 23-15/16” x 1.5”

Open Area: 40 in^2/Linear ft.

Weight: 35 lbs.

ASTM A 48 80-55-06

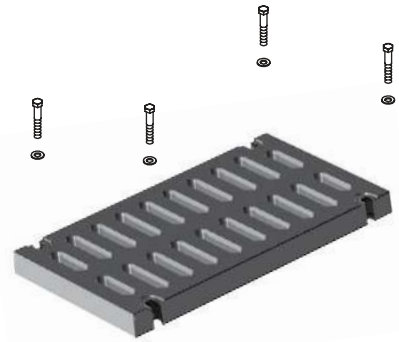
Slot Size: 1.38” x 6.5” wide

Applicable Standards

- DIN EN 1433 (DIN 19580) Load Class F per Section 9.1
- AASHTO H-25 per AASHTO M306-07, Section 5, “Drainage, Sewer, Utility and Related Castings”
- FAA publication AC 150/5320-6E, “Airport Pavement Design and Evaluation”
- ASTM A 48 80-55-06

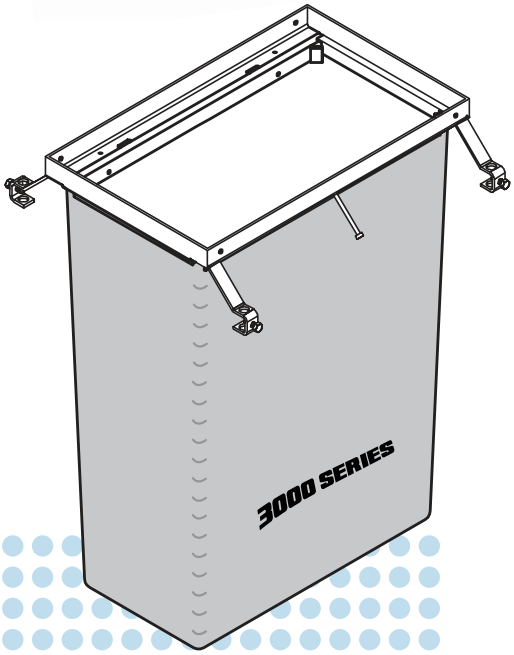
Catch Basins

The 3000 SERIES™ Catch Basins are designed to be used as collection points, drain run transitions and interceptors to collect solid debris. Catch Basins are designed to accommodate up to 10" SCHEDULE 40 pipe sizes with the use of CB3000A Pipe Adapter.

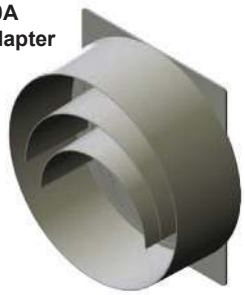


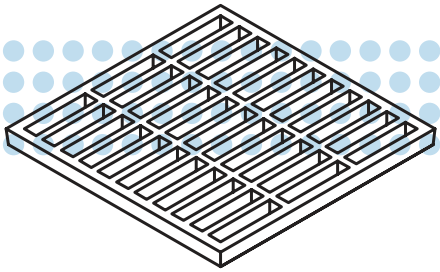
CB3012

12" x 24" Catch Basin

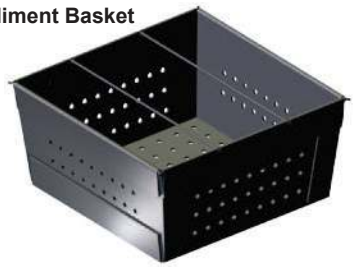


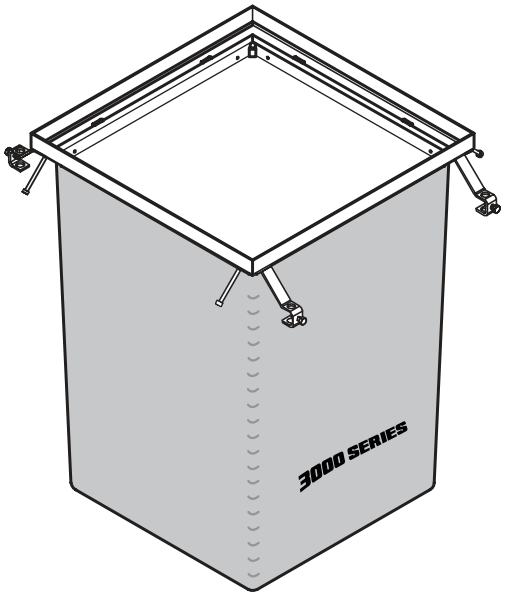
CB3000A
Pipe Adapter





CA2424TA
Sediment Basket





CB3024

24" x 24" Catch Basin

Catch Basin Grates

Ductile Iron

Part No.
DG1241D
DG2441D

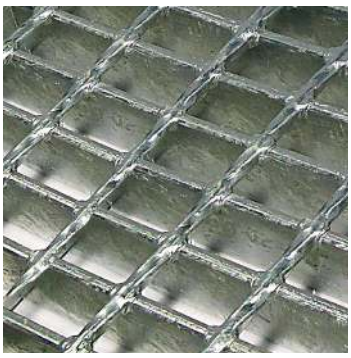
Class E

FIBERGLASS

Part No.
DG1244
DG2444

Class B

GALVANIZED STEEL



Part No.
DG1248R
DG2448R

Class C

STAINLESS STEEL

Part No.
DG1247R
DG2447R

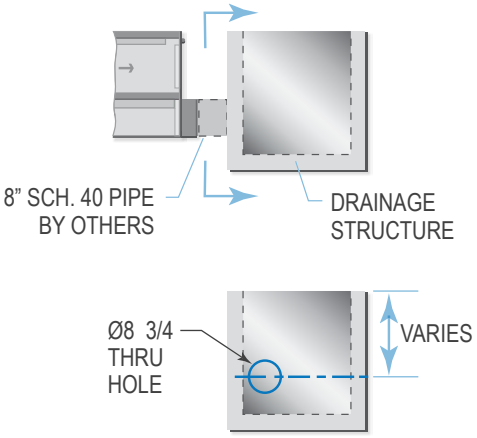
Class C

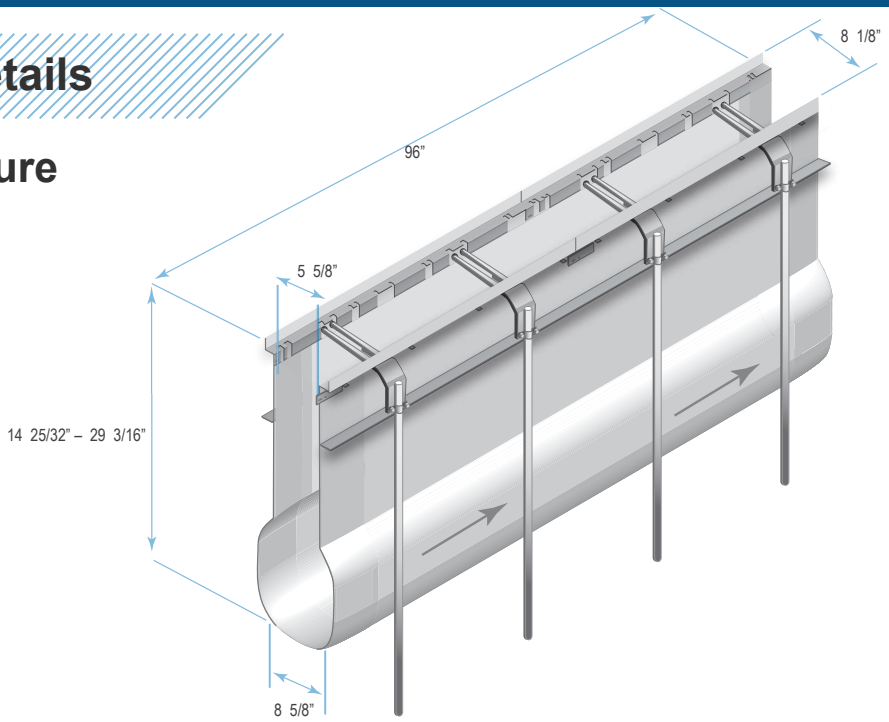
Catch Basin Applicable Standards

- 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**

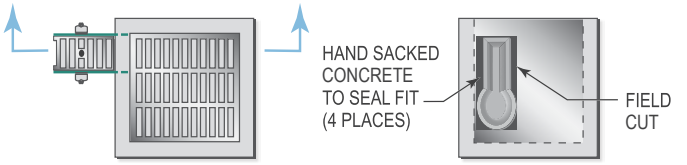
3000 SERIES™ Typical Details

8” Pipe to Drainage Structure

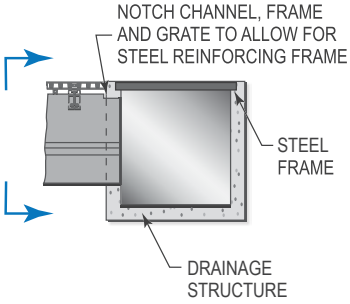


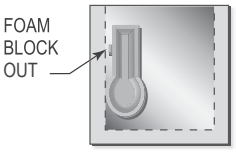


Drainage Structure Details



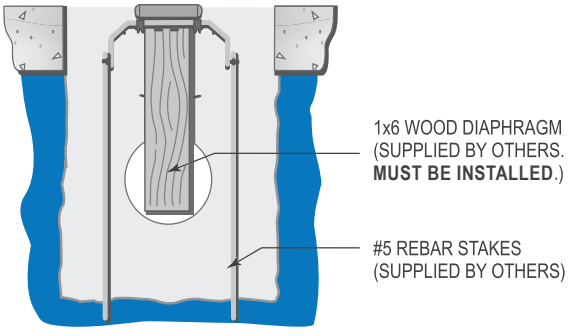
RETRO FIT
CHANNEL NOT SHOWN FOR CLARITY



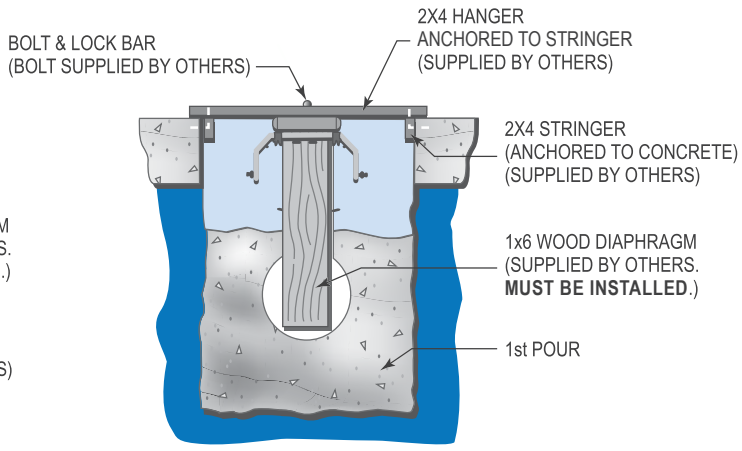


NEW CONSTRUCTION
CHANNEL NOT SHOWN FOR CLARITY

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

3000 SERIES™ Sample Specifications

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 polyester fiberglass 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-48) or ductile iron (ASTM A-536 minimum grade 65-45-12) and meet AASHTO HS-20 and FAA load requirements. The frames shall be non-removable from the concrete. The grates shall be 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 lock-downs 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.

3000 SERIES™ Installation Benefits

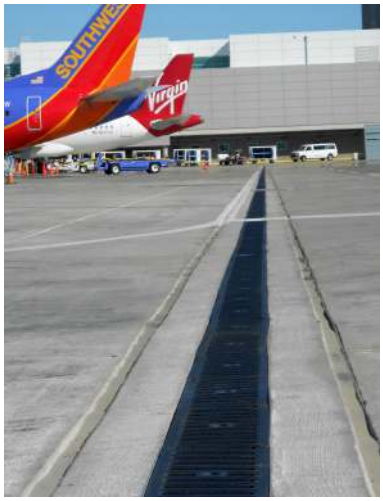
- Unique frame design eliminates trapped air during concrete placement
- Single lift concrete placement
- Heavy duty dynamic wheel load rated for AASHTO H-20 and greater
- Meets and exceeds FAA Specification AC 150/5320-6D
- Rapid installation (100’ per hour possible)
- 8’ channel sections
- No formwork involved
- 120’ continuous slope at 1%
- Flow 6.73 cfs, 3014 GPM
- Sturdy sidewalls resist deflection
- CTE 4.5 x 10^{-6} in/in/°F
- Corrosion, UV resistant
- Utilizes standard grating

The 3000 SERIES™ installs quickly and easily because no nuts or bolts are required for installation and very few pieces of hardware are involved. A two person crew can easily install this drain using simple materials available at most job sites.

The longer 8-foot (2.44 meter) channels reduce the total number of channels needed, thereby reducing the installation time and costs.

The 3000 SERIES™ installation system also helps to cut costs by greatly reducing time needed for set up and installation. Depending on site conditions, installation rates of 100 linear feet per hour and more are possible.

An integral installation chair designed into the frame system holds the rebar to allow the entire assembly to be easily adjusted to grade and helps resist channel floating during concrete placement. Plus, concrete can be placed in a single lift, thereby eliminating costly construction joints.



TDS TRENCH DRAIN SYSTEMS
trenchdrain.com • (610) 638-1221
PO Box 377 • Fremont, OH 43420
sales@trenchdrain.com

© Copyright 2019 Trench Drain Systems