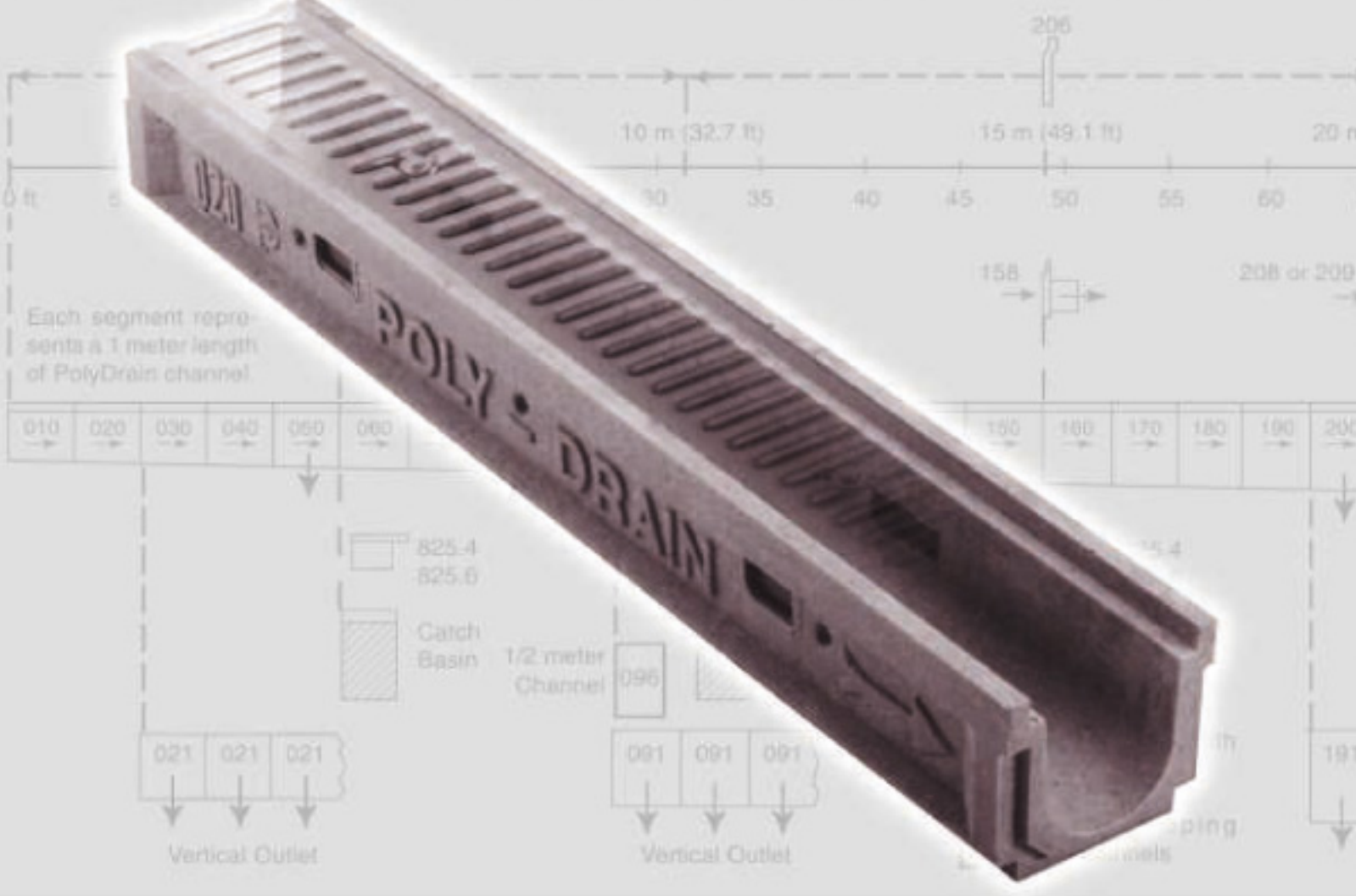
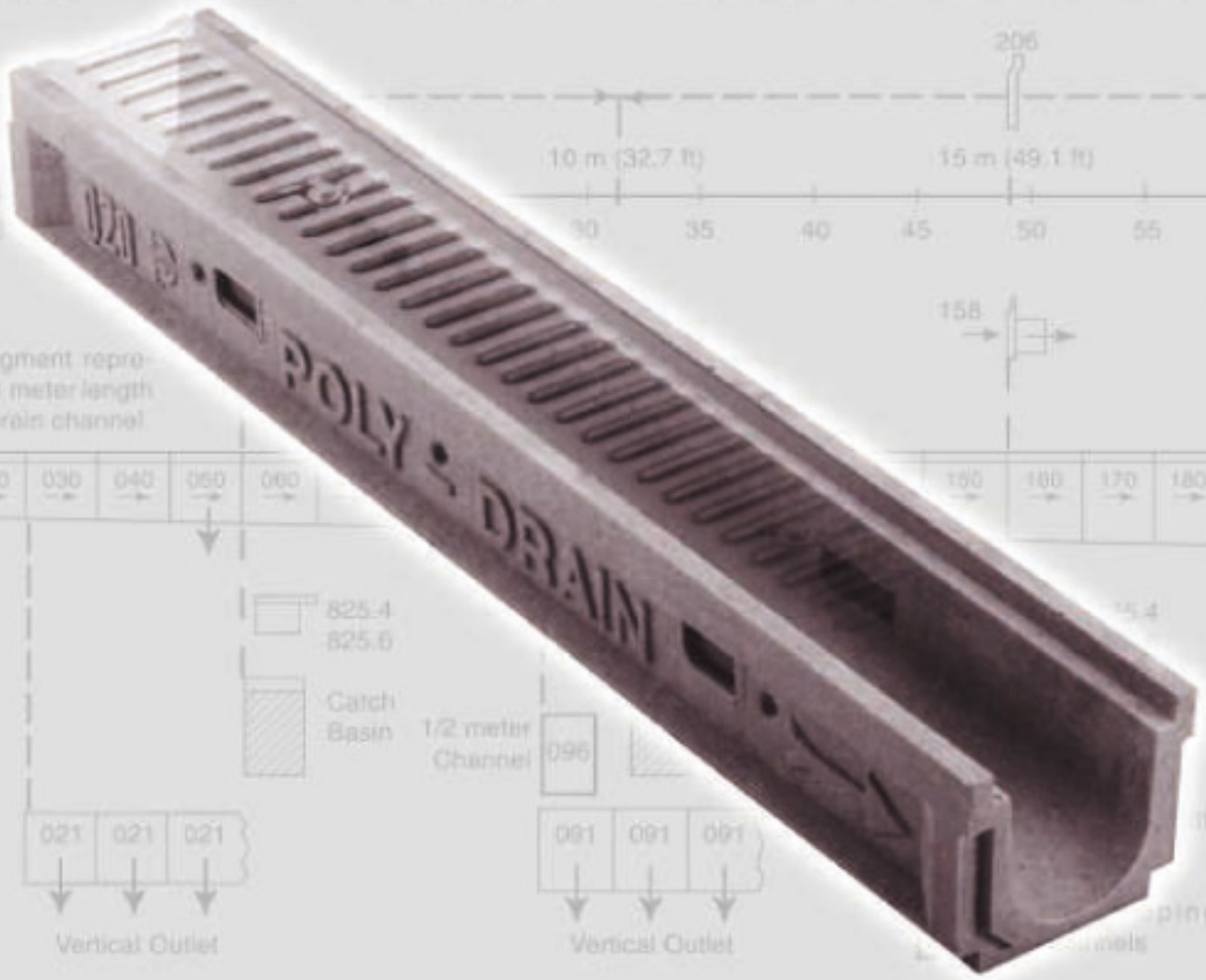


PolyDrain®

Pre-Engineered Surface Drainage Manual





ABT, Inc. manufactures PolyDrain trench drains; the standard for pre-engineered trench drains. Over the years the PolyDrain name has become synonymous with trench drain design. Architects and engineers, recognizing the benefits of pre-engineered polymer concrete trench drains, specify PolyDrain for a wide variety of applications. Included among these applications are food processing plants,

airports, highways, loading docks, garden centers and chemical processing plants. PolyDrain polymer concrete trench drain assures the specifier of the precision and accuracy required to satisfy hydraulic or chemical resistant demands. PolyDrain offers design flexibility, as well as ease of installation. In addition, expensive labor and material costs associated with hand-forming methods are eliminated.

PolyDrain channels are one meter (39.19) long. Standard channels have a 0.6% built in slope. The 30 standard channels are positioned sequentially in numerical order from 010 to 300, creating a continuously sloped channel run. Channel runs can be designed with intersections or miters and fabricated onsite utilizing commercial grade cutting tools. With PolyDrain, runs of almost any length are possible by varying outlet placements, integrating non-sloping channels and using PolyWall Sidewall Extensions for increased depth.

Polymer Concrete vs. Conventional Concrete

	Polymer Concrete	Portland Cement Concrete
Minimum Compressive Strength ASTM-C579	80 MPA (12,000 PSI)	20 MPA (3,000 PSI)
Minimum Tensile Strength ASTM-C307	10 MPA (1,200 PSI)	1.4 MPA (200 PSI)
Minimum Bending Strength ASTM-C580	20 MPA (2,000 PSI)	4.5 MPA (650 PSI)
Moisture Absorption ASTM-C140	0.2%	5%
Freeze-Thaw ASTM-C668	1,600 Cycles – No Weight Loss	750 Cycles – 25% Weight Loss

PolyDrain Formulations

ABT offers two compositional formulations for PolyDrain channels, depending on the effluent and chemical environment. Both offer superior strength and durability as well as marked cost advantages over alternative materials.

Standard PolyDrain channels are manufactured from **PolyDyn**[®], an advanced formulation of selected quartz aggregates and inert mineral fillers bonded together in a high-grade polyester resin. This formulation is suitable for use in both exterior and interior applications.

When a higher level of chemical resistance is required, ABT offers PolyDrain in a special formulation called **PolyChampion**[®], which has the same quartz and mineral fillers as the PolyDyn formulation, but with a premium grade vinyl ester resin binder. This formulation will withstand a broader range of corrosive salts, fuels, acids and alkalis.

Comparative Analysis

Fluid	Polymer Concrete		Portland Cement
	PolyDyn	PolyChampion	
Water	✓	✓	Permeable
Gasoline	✓	✓	Permeable
Diesel Fuel	✓	✓	Permeable
Aviation Fuel	✓	✓	Permeable
Hydraulic Oil	✓	✓	Permeable
Fuel Oil	✓	✓	Permeable
Hydraulic Fluid	✓	✓	Permeable
Motor Oil	✓	✓	Permeable
Sea Water	✓	✓	Permeable
Acids	✓	✓	Corrodes
Road Salts	✓	✓	Corrodes

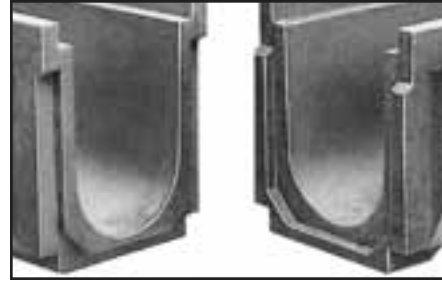
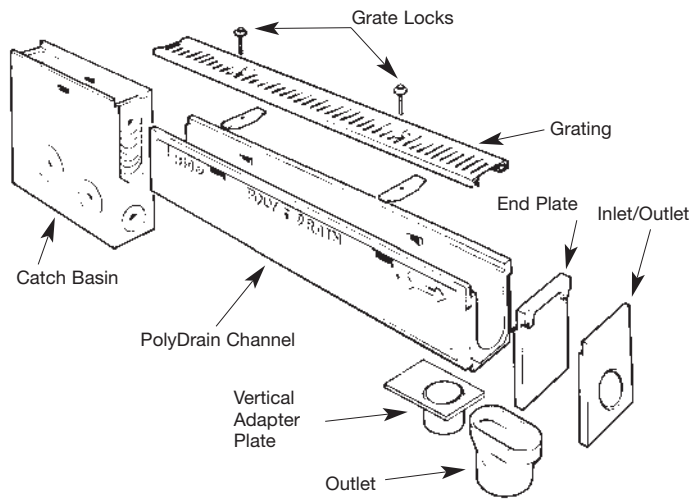
Polymer Concrete is resistant to salt, oil, gas, sewage, most acids and many alkalis. This makes it excellent for chemical transport, washdown and food processing, as well as many other applications.

Portland Cement Concrete is subject to deterioration of varying degrees under any of these conditions.

Other quality drainage products by ABT, Inc.



Typical PolyDrain System

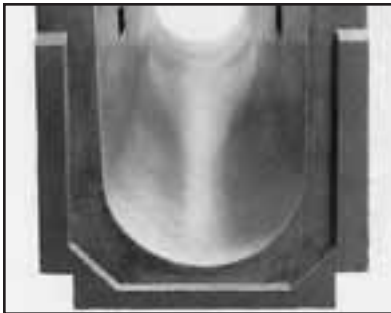


Interlocking Joints

PolyDrain channels have interlocking tongue-and-groove joints that serve two important functions. First they aid in maintaining proper channel alignment during the pour. Second, they assist in securing channel connections to prevent fluid migration out of the system. ABT maintains a line of sealants that can be applied to channels when a sealed system is required.

Pre-Sloped Radius Channels

Standard PolyDrain channels have a built-in 0.6% slope with a smooth radius bottom and a narrow cross section. These features provide excellent hydraulic efficiency and when hydraulically loaded can achieve flow velocities of 3.5 feet per second.

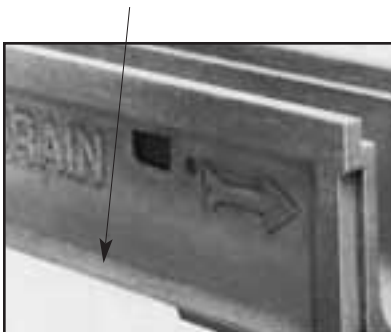


PolyLock Inserts

PolyDrain channels feature RedDot® polyethylene inserts or GreenDot® polypropylene inserts. These, together with the grate locking devices comprise the PolyLock grate lock-down system. RedDot inserts also provide vibration dampening that helps keep grates secure under traffic conditions.

Anchoring Ribs

PolyDrain channels are formed with full-length anchoring ribs on each side of the channel at the base of the side wall. These anchoring ribs provide a positive mechanical lock with surrounding concrete.



DISCLAIMER

The customer and the customer's architects, engineers, consultants and other professionals are completely responsible for the selection, installation, and maintenance of any product purchased from ABT, and EXCEPT AS EXPRESSLY PROVIDED IN ABT'S STANDARD WARRANTIES, ABT MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY, DESIGN, MERCHANTABILITY, OR FITNESS OF THE PRODUCT FOR CUSTOMER'S APPLICATION. Copies of ABT's standard warranties are available upon request.

PolyDrain®, PolyDyn®, PolyChampion®, GreenDot®, RedDot®, and PolyWall® are registered trademarks of ABT, Inc.®

400 Series Grates

Solid Covers

Part No.	Load Class	Material*	Length m (in)	Weight kg (lb)	Locking Device
404	A	Galvanized steel	1.0 (39.19)	2.7 (6)	810A
405	A	Galvanized steel	0.5 (19.60)	1.4 (3)	810A
406	A	Galvanized steel embossed	1.0 (39.19)	2.7 (6)	810A
407	A	Galvanized steel embossed	0.5 (19.60)	1.4 (3)	810A
444	A	18-8 Stainless steel	1.0 (39.19)	3.2 (7)	840A
445	A	18-8 Stainless steel	0.5 (19.60)	1.8 (4)	840A
446	A	18-8 Stainless steel embossed	1.0 (39.19)	3.2 (7)	840A
447	A	18-8 Stainless steel embossed	0.5 (19.60)	1.8 (4)	840A

Perforated Heel-Proof Grates

Part No.	Load Class	Material*	Length m (in)	Weight kg (lb)	Locking Device
Ⓒ 410	A	Galvanized steel	1.0 (39.19)	2.7 (6)	810A
Ⓒ 411	A	Galvanized steel	0.5 (19.60)	1.4 (3)	810A
Ⓒ 452	A	18-8 Stainless steel	1.0 (39.19)	2.7 (6)	840A
Ⓒ 453	A	18-8 Stainless steel	0.5 (19.60)	1.4 (3)	840A

Reinforced Perforated Heel-Proof Grates

Part No.	Load Class	Material*	Length m (in)	Weight kg (lb)	Locking Device
Ⓒ 412	A-B	Galvanized steel	1.0 (39.19)	3.6 (8)	810A
Ⓒ 413	A-B	Galvanized steel	0.5 (19.60)	1.8 (4)	810A
Ⓒ 454	A-B	18-8 Stainless steel	1.0 (39.19)	3.6 (8)	840A
Ⓒ 455	A-B	18-8 Stainless steel	0.5 (19.60)	1.8 (4)	840A

Load Class A-B-C perforated grating available on special order basis

Slotted Steel Grates

Part No.	Load Class	Material*	Length m (in)	Weight kg (lb)	Locking Device
420	A-B	Galvanized steel	1.0 (39.19)	2.7 (6)	811A
421	A-B	Galvanized steel	0.5 (19.60)	1.4 (3)	811A
440	A-B	18-8 Stainless steel	1.0 (39.19)	2.7 (6)	841A
441	A-B	18-8 Stainless steel	0.5 (19.60)	1.4 (3)	841A
442.19	A-B-C-D	Stainless steel	1.0 (39.16)	3.6 (8)	841A
443.10	A-B-C-D	Stainless steel	.5 (19.6)	1.8 (4)	841A

Reinforced Slotted Steel Grates

Part No.	Load Class	Material*	Length m (in)	Weight kg (lb)	Locking Device
H20 422	A-B-C	Galvanized steel	1.0 (39.19)	3.6 (8)	811A
H20 423	A-B-C	Galvanized steel	0.5 (19.60)	1.8 (4)	811A
H20 423.10	A-B-C-D	Galvanized steel	0.5 (19.60)	1.8 (4)	811A
H20 442	A-B-C	18-8 Stainless steel	1.0 (39.19)	3.6 (8)	841A
H20 443	A-B-C	18-8 Stainless steel	0.5 (19.60)	1.8 (4)	841A

*Special coatings available on all grates

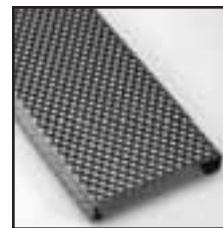
Load Classifications

Load Class	Description	Design Load psi maximum	Grate Options
A	Bicycles, golf carts	60	All grates
B	Automobiles, light trucks, light aircraft (less than 5 mph)	175	412, 413, 454, 455, 420, 421, 440, 441, 422, 423, 442, 443
C	Pneumatic tire vehicles (high speed), highways	325	422.19, 500, 502, 503, 504, 505, 512, 513, 514, 515
D	Severe point loads, hard tire fork lifts	575	512AF, 513AF, 514AF, 515AF, 522, 524, 532, 534, 512MFFAF
E	Commercial aircraft	775	513AF, 515AF, 522, 524, 532, 534
F	Snowplow	775	532, 534

For variations on load suitability contact our technical sales support team at 800-438-6057.



410



406



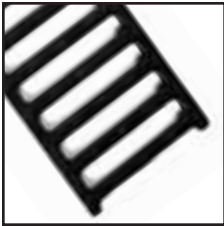
422



420

Grate Testing Procedure

Grate/cover is placed in a support fixture in a load testing machine. A steel rod, 100 mm (4") in diameter by 305 mm (12") in length, is placed longitudinally at the weakest point of the grate/cover (column, shear or beam). Load is applied to the rod until grate/cover failure occurs. The minimum failure load is then used to compute the Load Class formula listed with the drawing. Thus, Load Class as designated in the table is based on the worst case service load carrying capacity per linear foot of grate/cover. Test assumes a minimum of contact area. Actual applications may involve a larger load contact patch, thereby reducing stress.



502



503



504



505



512AF



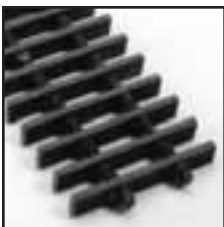
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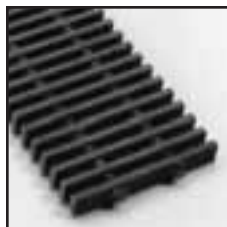
532



510MFFAF



720



722

500 Series Grates

Ductile Iron Solid Cover

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
H20 500†	A-B-C-D	Ductile iron	0.5 (19.60)	5.4 (12)	811C

†500 cover is also compatible with 510 frame

Slotted Grates

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
H20 502	A-B-C-D	Ductile iron	0.5 (19.60)	3.6 (8)	811B
H20 503	A-B-C-D-E	Ductile iron	0.5 (19.60)	6.0 (11)	811B

Longitudinally Slotted Grates

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
♿/H20 504	A-B-C-D	Ductile iron	0.5 (19.60)	4.5 (10)	811C

Ornamental Ductile Iron Grate

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
♿/H20 505	A-B-C-D-E	Ductile iron ornamental	0.5 (19.60)	4.5 (10)	811C

510AF Frame & Grate Assemblies

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
H20 512AF	A-B-C-D	Ductile iron frame and 502	0.5 (19.60)	6.8 (15)	815B
H20 513AF	A-B-C-D-E	Ductile iron frame and 503	0.5 (19.60)	8.5 (18)	815B
♿/H20 514AF	A-B-C-D	Ductile iron frame and 504	0.5 (19.60)	7.7 (17)	815C
♿/H20 515AF	A-B-C-D-E	Ductile iron frame and 505	0.5 (19.60)	7.7 (17)	815B

520 Frame & Grate Assemblies

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
H20 522	A-B-C-D-E	Gray iron (class 30) and 502 style	0.5 (19.60)	12.7 (28)	815E
H20 524	A-B-C-D-E	Gray iron (class 30) frame and 504 style ductile	0.5 (19.60)	10.4 (23)	815F

530 Frame & Grate Assemblies

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
H20 532	A-B-C-D-E	Gray iron (class 30) and 502	0.5 (19.60)	13.6 (30)	815B
H20 534	A-B-C-D-E	Gray iron (class 30) frame, ductile iron longitudinally-slotted grate	0.5 (19.60)	11.3 (25)	815F

510MFF Fabrication/End Frame

Part No.	Load Class	Material**	Length m (in)	Weight kg (lb)	Locking Device
H20 510MFF	N/A	Ductile iron	0.5 (19.60)	4.1 (9)	N/A

**All ductile iron grates and frames available with galvanized coating. All ductile and cast grates have compatible anchor frames.

700 Series Grates

Vinyl Ester Chemical Resistant FRP Slotted Grates

Part No.	Load Class	Material	Length m (in)	Weight kg (lb)	Locking Device
720	A-B	Vinyl ester (bars on 1" centers)	1.0 (39.19)	1.8 (4)	887
721	A-B	Vinyl ester (bars on 1" centers)	0.5 (19.60)	0.9 (2)	887
722	A-B-C	Vinyl ester (bars on 0.6" centers)	1.0 (39.19)	2.7 (6)	887
723	A-B-C	Vinyl ester (bars on 0.6" centers)	0.5 (19.60)	1.4 (3)	887

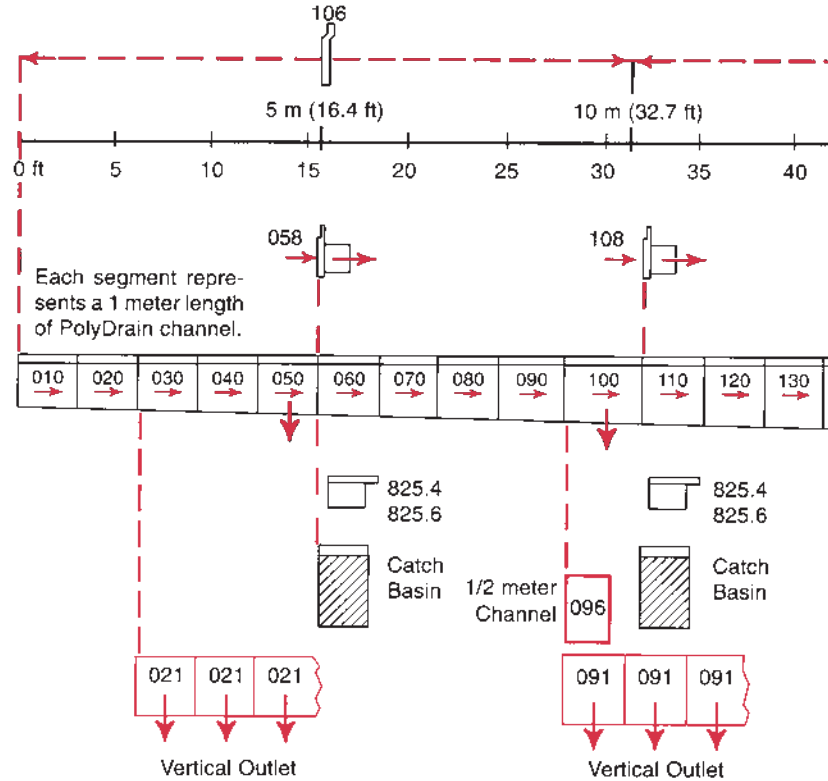
Key to special compliance grates

♿ Meets Americans with Disabilities Act (ADA) Requirements

H20 Meets or exceeds AASHTO H-20 HS-25 standards

The PolyDrain Trench Drain System consists of 30 interlocking sloped channels and 4 non-sloped channels. Special non-sloping channels can be inserted at specified intervals in order to extend channel runs. Catch basins, horizontal outlet plates, closed end plates and vertical outlet plate adapters can be installed at designated locations. Closed end plates terminate channel runs. To determine number of channels required simply divide footage by 3.27.

NOTE: Always begin at the appropriate outlet channel, working towards the shallow end.



Channel Specifications

Use this chart to estimate flow capacities and invert elevations. Excavation depth may be estimated by adding slab thickness to Maximum Channel Depth, or as recommended by Structural Engineer.

When using the Model 510, 520 or 530 Series frame and grate systems, add 31 mm (1.2") to the overall depths.

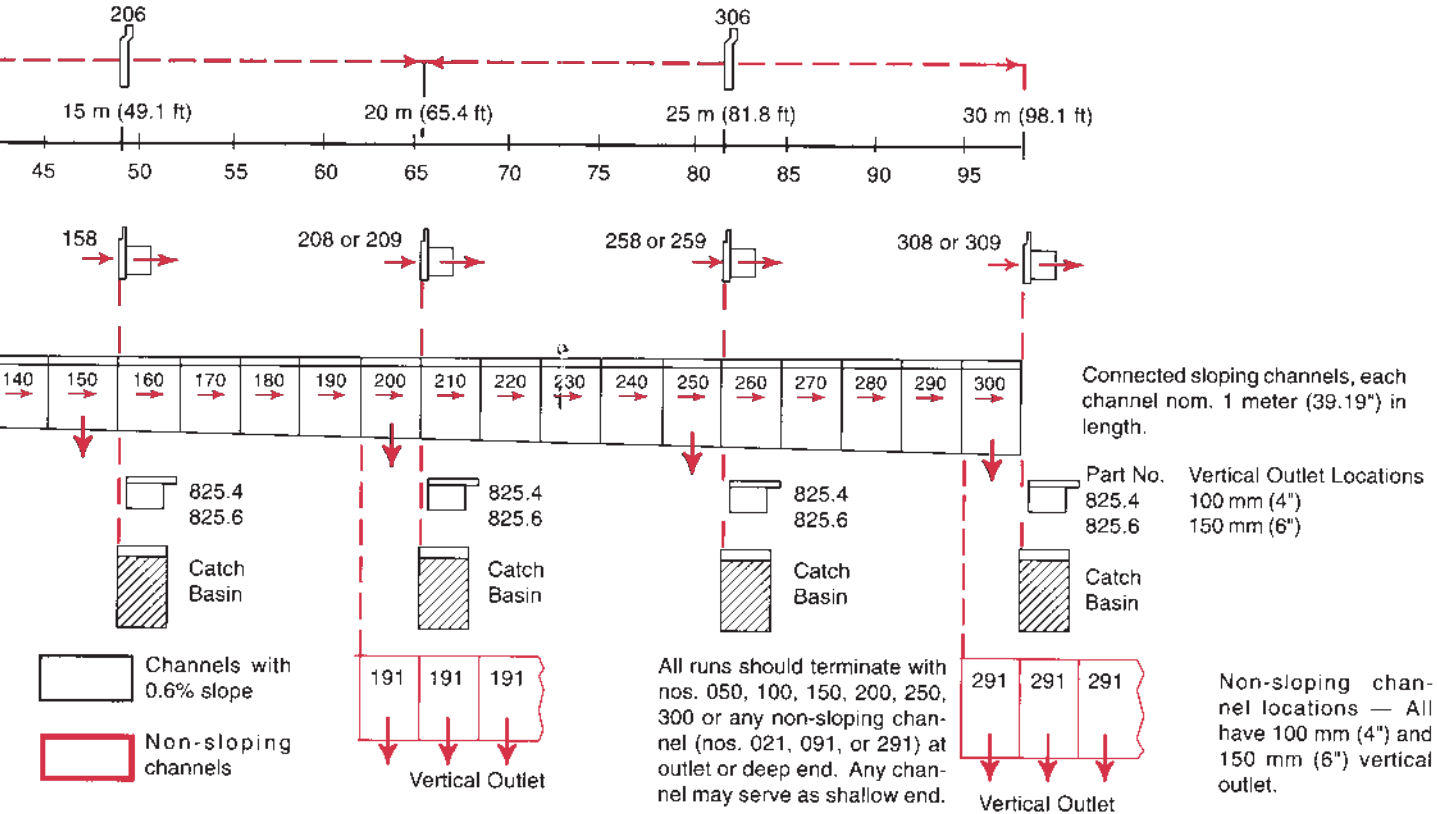
NOTES:

Subtract 25 mm (1") from minimum and maximum depths shown to obtain invert elevations.

Red part numbers indicate non-sloping channels.

Excludes grate lip, n = 0.010, average channel depth.

Part No.	Channel Only				Channel With PolyWall I			
	Overall Channel Depth cm (in)		Maximum Flow Rate lpm (gpm)	Weight kg (lbs)	Overall Channel Depth cm (in)		Maximum Flow Rate lpm (gpm)	Weight kg (lbs)
	Minimum	Maximum			Minimum	Maximum		
010	12.9 (5.1)	13.5 (5.3)	403.8 (106.7)	14.1 (31.1)	30.9 (12.2)	31.5 (12.4)	1476.1 (389.9)	37.6 (82.9)
020	13.5 (5.3)	14.1 (5.6)	438.3 (115.8)	14.9 (32.8)	31.5 (12.4)	32.1 (12.6)	1512.4 (399.5)	38.4 (84.6)
021	14.1 (5.6)	14.1 (5.6)	—	14.5 (32.0)	32.1 (12.6)	32.1 (12.6)	—	38.0 (83.8)
030	14.1 (5.6)	14.7 (5.8)	473.1 (125.0)	15.2 (33.6)	32.1 (12.6)	32.7 (12.9)	1548.7 (409.1)	38.7 (85.4)
040	14.7 (5.8)	15.3 (6.0)	508.0 (134.2)	15.5 (34.3)	32.7 (12.9)	33.3 (13.1)	1584.9 (418.7)	39.0 (86.1)
050	15.3 (6.0)	15.9 (6.3)	543.0 (143.5)	15.3 (33.8)	33.3 (13.1)	33.9 (13.3)	1621.2 (428.3)	38.8 (85.6)
060	15.9 (6.3)	16.5 (6.5)	578.2 (152.7)	16.0 (35.2)	33.9 (13.3)	34.5 (13.6)	1657.6 (437.9)	39.5 (87.0)
070	16.5 (6.5)	17.1 (6.7)	613.5 (162.1)	16.4 (36.2)	34.5 (13.6)	35.1 (13.8)	1693.9 (447.5)	39.9 (88.0)
080	17.1 (6.7)	17.7 (7.0)	648.9 (171.4)	16.8 (37.0)	35.1 (13.8)	35.7 (14.0)	1730.2 (457.1)	40.3 (88.8)
090	17.7 (7.0)	18.3 (7.2)	684.3 (180.8)	17.2 (38.0)	35.7 (14.0)	36.3 (14.3)	1766.5 (466.7)	40.7 (89.8)
091	18.3 (7.2)	18.3 (7.2)	—	17.0 (37.4)	36.3 (14.3)	36.3 (14.3)	—	40.5 (89.2)
096	18.3 (7.2)	18.3 (7.2)	—	9.1 (20.1)	36.3 (14.3)	36.3 (14.3)	—	32.6 (71.9)
100	18.3 (7.2)	18.9 (7.4)	719.9 (190.2)	17.1 (37.6)	36.3 (14.3)	36.9 (14.5)	1802.9 (476.3)	40.6 (89.4)
110	18.9 (7.4)	19.5 (7.7)	755.5 (199.6)	18.1 (39.8)	36.9 (14.5)	37.5 (14.8)	1839.2 (485.9)	41.5 (91.6)
120	19.5 (7.7)	20.1 (7.9)	791.2 (209.0)	18.4 (40.6)	37.5 (14.8)	38.1 (15.0)	1875.6 (495.5)	41.9 (92.4)
130	20.1 (7.9)	20.7 (8.2)	826.9 (218.5)	19.2 (42.4)	38.1 (15.0)	38.7 (15.2)	1912.0 (505.1)	42.7 (94.2)
140	20.7 (8.2)	21.3 (8.4)	862.7 (227.9)	19.4 (42.8)	38.7 (15.2)	39.3 (15.5)	1948.4 (514.7)	42.9 (94.6)
150	21.3 (8.4)	21.9 (8.6)	898.6 (237.4)	19.3 (42.6)	39.3 (15.5)	39.9 (15.7)	1984.7 (524.3)	42.8 (94.4)
160	21.9 (8.6)	22.5 (8.9)	934.4 (246.9)	20.0 (44.2)	39.9 (15.7)	40.5 (15.9)	2021.1 (533.9)	43.5 (96.0)
170	22.5 (8.9)	23.1 (9.1)	970.4 (256.3)	20.5 (45.1)	40.5 (15.9)	41.1 (16.2)	2057.5 (543.5)	44.0 (96.9)
180	23.1 (9.1)	23.7 (9.3)	1006.3 (265.8)	20.9 (46.1)	41.1 (16.2)	41.7 (16.4)	2093.9 (553.2)	44.4 (97.9)
190	23.7 (9.3)	24.3 (9.6)	1042.3 (275.4)	21.2 (46.8)	41.7 (16.4)	42.3 (16.7)	2130.3 (562.8)	44.7 (98.6)
191	24.3 (9.6)	24.3 (9.6)	—	21.1 (46.6)	42.3 (16.7)	42.3 (16.7)	—	44.6 (98.4)
200	24.3 (9.6)	24.9 (9.8)	1078.3 (284.9)	21.3 (46.9)	42.3 (16.7)	42.9 (16.9)	2166.8 (572.4)	44.8 (98.7)
210	24.9 (9.8)	25.5 (10.0)	1114.4 (294.4)	22.0 (48.6)	42.9 (16.9)	43.5 (17.1)	2203.2 (582.0)	45.5 (100.4)
220	25.5 (10.0)	26.1 (10.3)	1150.5 (303.9)	22.6 (49.8)	43.5 (17.1)	44.1 (17.4)	2239.6 (591.6)	46.1 (101.6)
230	26.1 (10.3)	26.7 (10.5)	1186.6 (313.5)	22.7 (50.0)	44.1 (17.4)	44.7 (17.6)	2276.0 (601.3)	46.2 (101.8)
240	26.7 (10.5)	27.3 (10.7)	1222.7 (323.0)	23.4 (51.5)	44.7 (17.6)	45.3 (17.8)	2312.5 (610.9)	46.9 (103.3)
250	27.3 (10.7)	27.9 (11.0)	1258.9 (332.6)	22.9 (50.5)	45.3 (17.8)	45.9 (18.1)	2348.9 (620.5)	46.4 (102.3)
260	27.9 (11.0)	28.5 (11.2)	1295.0 (342.1)	23.7 (52.4)	45.9 (18.1)	46.5 (18.3)	2385.3 (630.1)	47.2 (104.2)
270	28.5 (11.2)	29.1 (11.5)	1331.2 (351.7)	24.0 (53.0)	46.5 (18.3)	47.1 (18.5)	2421.8 (639.8)	47.5 (104.8)
280	29.1 (11.5)	29.7 (11.7)	1367.4 (361.2)	24.7 (54.5)	47.1 (18.5)	47.7 (18.8)	2458.2 (649.4)	48.2 (106.3)
290	29.7 (11.7)	30.3 (11.9)	1403.6 (370.8)	24.9 (54.9)	47.7 (18.8)	48.3 (19.0)	2494.7 (659.0)	48.4 (106.7)
291	30.3 (11.9)	30.3 (11.9)	—	24.2 (53.4)	48.3 (19.0)	48.3 (19.0)	—	47.7 (105.2)
300	30.3 (11.9)	30.9 (12.2)	1439.9 (380.4)	25.3 (55.6)	48.3 (19.0)	48.9 (19.3)	2531.2 (668.7)	48.7 (107.4)

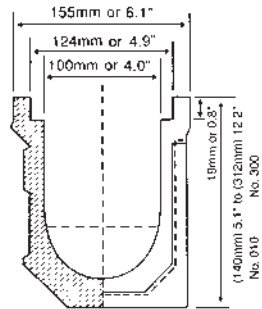


Connected sloping channels, each channel nom. 1 meter (39.19") in length.

Part No. Vertical Outlet Locations
 825.4 100 mm (4")
 825.6 150 mm (6")

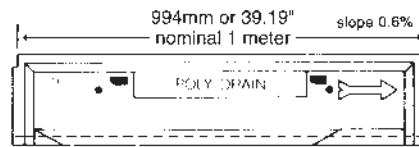
Non-sloping channel locations — All have 100 mm (4") and 150 mm (6") vertical outlet.

Channel With PolyWall II				Part No.
Overall Channel Depth cm (in)		Maximum Flow Rate lpm (gpm)	Weight kg (lbs)	
Minimum	Maximum			
48.9 (19.3)	49.5 (19.5)	2567.6 (678.3)	46.3 (106.5)	010
49.5 (19.5)	50.1 (19.7)	2604.1 (687.9)	47.1 (108.2)	020
50.1 (19.7)	50.1 (19.7)	—	46.7 (107.4)	021
50.1 (19.7)	50.7 (20.0)	2640.5 (697.6)	47.4 (109.0)	030
50.7 (20.0)	51.3 (20.2)	2677.0 (707.2)	47.7 (109.7)	040
51.3 (20.2)	51.9 (20.4)	2713.5 (716.8)	47.5 (109.2)	050
51.9 (20.4)	52.5 (20.7)	2750.0 (726.5)	48.2 (110.6)	060
52.5 (20.7)	53.1 (20.9)	2786.4 (736.1)	48.6 (111.6)	070
53.1 (20.9)	53.7 (21.1)	2822.9 (745.7)	49.0 (112.4)	080
53.7 (21.1)	54.3 (21.4)	2859.4 (755.4)	39.4 (113.4)	090
54.3 (21.4)	54.3 (21.4)	—	49.2 (112.8)	091
54.3 (21.4)	54.3 (21.4)	—	41.3 (95.5)	096
54.3 (21.4)	54.9 (21.6)	2895.9 (765.0)	49.3 (113.0)	100
54.9 (21.6)	55.5 (21.9)	2932.4 (774.7)	50.3 (115.2)	110
55.5 (21.9)	56.1 (22.1)	2968.9 (784.3)	50.6 (116.0)	120
56.1 (22.1)	56.7 (22.3)	3005.4 (793.9)	51.4 (117.8)	130
56.7 (22.3)	57.3 (22.6)	3041.9 (803.6)	51.6 (118.2)	140
57.3 (22.6)	57.9 (22.8)	3078.4 (813.2)	51.5 (118.0)	150
57.9 (22.8)	58.5 (23.0)	3114.9 (822.9)	52.3 (119.6)	160
58.5 (23.0)	59.1 (23.3)	3151.4 (832.5)	52.7 (120.5)	170
59.1 (23.3)	59.7 (23.5)	3187.9 (842.1)	53.1 (121.5)	180
59.7 (23.5)	60.3 (23.7)	3224.4 (851.8)	53.4 (122.2)	190
60.3 (23.7)	60.3 (23.7)	—	53.3 (122.0)	191
60.3 (23.7)	60.9 (24.0)	3260.9 (861.4)	53.5 (122.3)	200
60.9 (24.0)	61.5 (24.2)	3297.4 (871.1)	54.2 (124.0)	210
61.5 (24.2)	62.1 (24.4)	3333.9 (880.7)	54.8 (125.2)	220
62.2 (24.4)	62.7 (24.7)	3370.4 (890.4)	54.9 (125.4)	230
62.7 (24.7)	63.3 (24.9)	3406.9 (900.0)	55.6 (126.9)	240
63.3 (24.9)	63.9 (25.2)	3443.4 (909.7)	55.1 (125.9)	250
63.9 (25.2)	64.5 (25.4)	3480.0 (919.3)	55.9 (127.8)	260
64.5 (25.4)	65.1 (25.6)	3516.5 (929.0)	56.2 (128.4)	270
65.1 (25.6)	65.7 (25.9)	3553.0 (938.6)	56.9 (129.9)	280
65.7 (25.9)	66.3 (26.1)	3589.5 (948.2)	57.1 (130.3)	290
66.3 (26.1)	66.3 (26.1)	—	56.4 (128.8)	291
66.3 (26.1)	66.9 (26.3)	3626.0 (957.9)	57.4 (131.0)	300

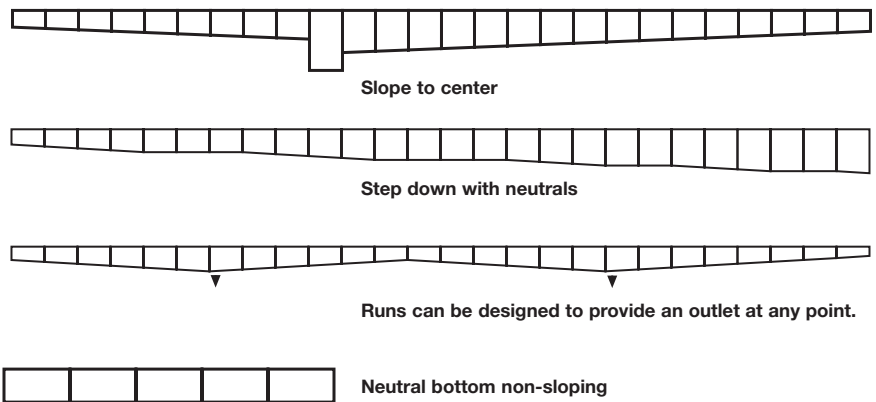


- Minimum overall depth (No. 010) 128 mm or 5.1"
- Maximum overall depth (No. 300) 309 mm or 12.2"
- Inside top width (all channels) 100 mm or 4.0"
- Maximum cross section flow area 25,400 mm² or 39.9 sq. in.
- Length of slope system 30 m or 98.1 feet
- Channel bottom thickness 20 mm or 1.0" (nom.)

PolyDrain systems can be extended to greater lengths by insertion of any number of non-slope channels (No. 021, 091, 096, 191, and 291) at the appropriate locations, or by the addition of PolyWall sidewall extensions.



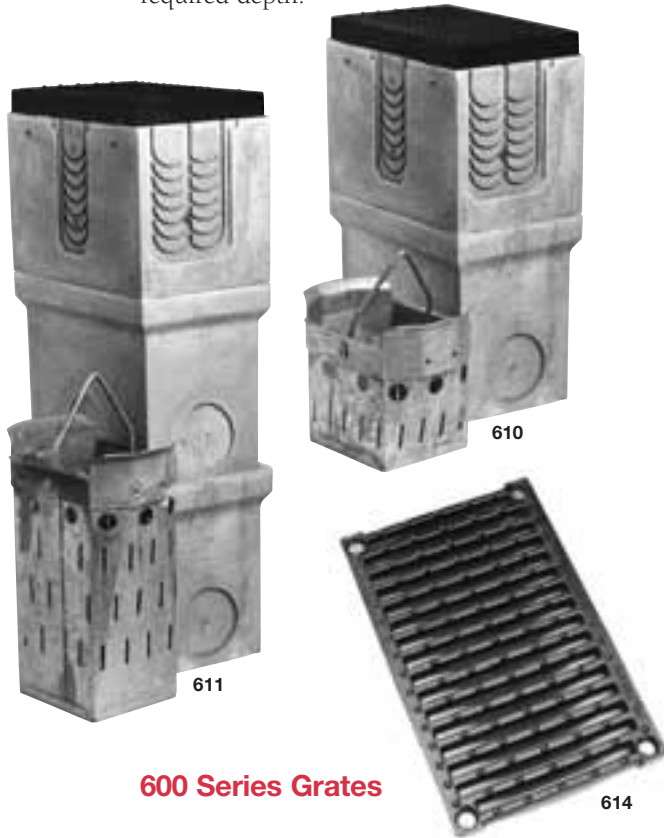
Run Variations



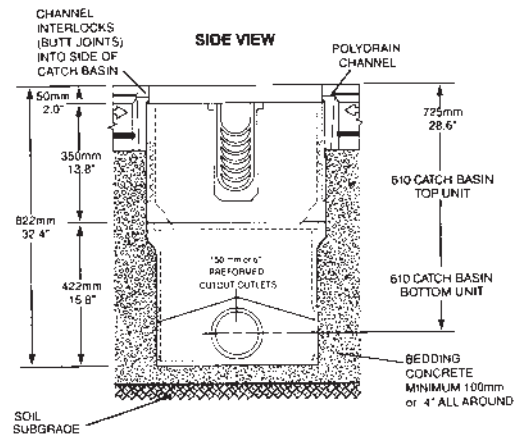
Runs can be designed to provide an outlet at any point.

610-611 Large Catch Basins

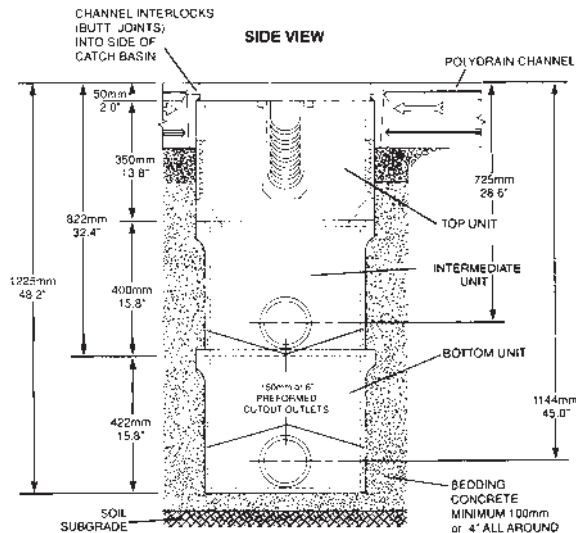
PolyDrain's 610 and 611 Large Catch Basins are designed to accept large volumes of fluids. Removable stainless or galvanized steel trash buckets are available and a cast iron grate and frame is included. Catch basins are 19.6" long and 12.8" wide and have pre-formed cutouts for insertion of channels and 150 mm (6") outlets on all four sides of the basin, although other pipe sizes can be fitted to the catch basin as required. PolyDrain Large Catch Basins have a stackable design which allows for installation to any required depth.



610 Large Catch Basin



611 Large Catch Basin



600 Series Grates

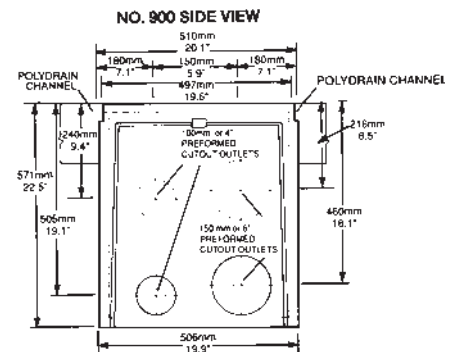
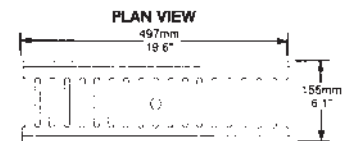
Slotted Grates For 600 Series Catch Basins

Part No.	Load Class	Material	Length m (in)	Weight kg (lb)	Locking Device
H20 604	A-B-C-D	Gray iron (class 30)	0.48 (18.87)	24.9 (55)	828
H20 614	A-B-C-D-E	Ductile iron	0.48 (18.87)	39.5 (87)	828

900 Series Small Catch Basins

900 Series Small Catch Basins

PolyDrain's 900 Series Catch Basins have the same outside dimensions as standard PolyDrain channels. Designed to accept sidewall extensions, they can be positioned any place in a channel run. The 900 Series Catch Basins are available with easy-to-remove stainless or galvanized steel trash buckets and can accept the full range of lockable inlay or frame-and-grate systems. Available with foul air traps when required.



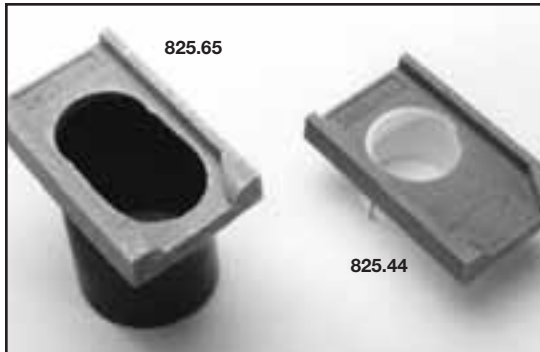
900 Series

Inlets and Outlets

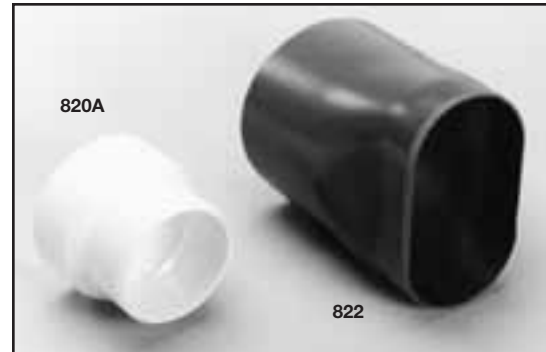
All 100 mm (4") horizontal plates have inlet or outlet capability. As outlets, they fit the downstream end of every fifth channel, or as inlets, the upstream end of the following channel. All 100 mm (4") plates are made with a PVC sleeve to accept either SCH40 or SDR35 pipe. 150 mm (6") outlet plates are made with a special adapter flume. Vertical outlet plates fit over the cutouts on each of the outlet channels.



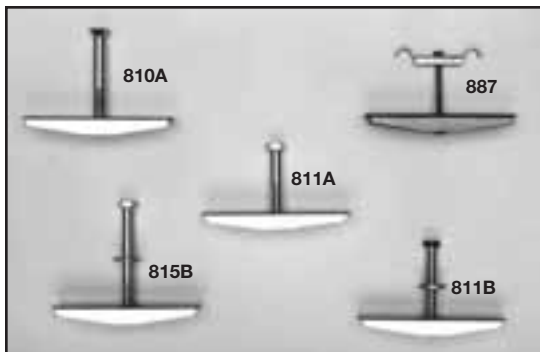
Closed End Plates



Vertical Outlet Plates

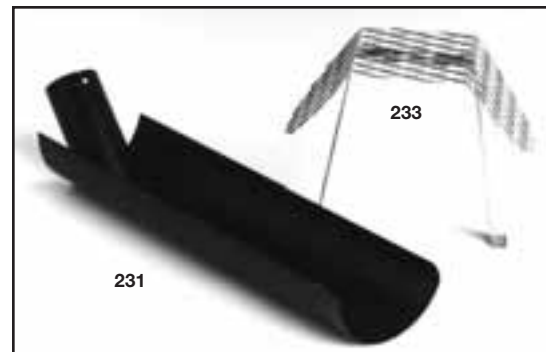


PVC Connectors



Locking Devices

Grate locking devices are recommended for all applications involving vehicular traffic, or where vandalism may be a problem. Locking devices are provided in zinc-plated and stainless steel. The bolt is threaded into the lock toggle through the hole provided in the grate prior to grate installation. As the bolt is tightened, the toggle cams into place for hands-free installation.



Shovel Head

Designed to conform to the PolyDrain channel bottom.

100 mm (4") Strainer

The strainer is designed to intercept leaves and similar type trash to prevent it from entering the sewer system. Fits all 100 mm (4") vertical channel outlets.



PolySeal

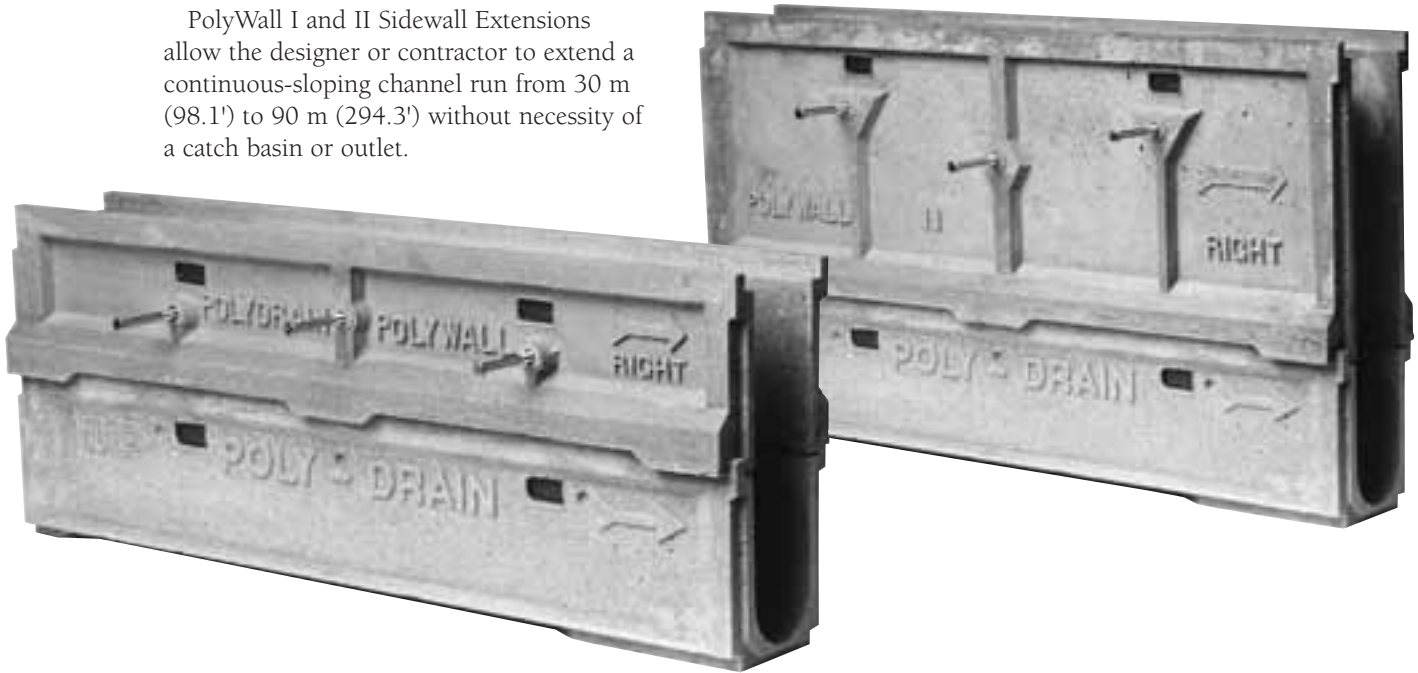
PolySeal 1 is a single-part polyurethane in a standard paper caulk tube, and is used as a general purpose sealant for gray water applications.

PolySeal 2 is a two-part epoxy in a double tube with a static mixing nozzle. PolySeal 2 maintains a permanent flexibility and offers chemical resistant properties.

PolySeal 3 is a two-part vinyl ester sealant which sets hard in about 30 minutes. It is recommended for sealing all joints in a PolyChampion installation. It is also ideal for bonding all PolyDrain fabrications and mitres.

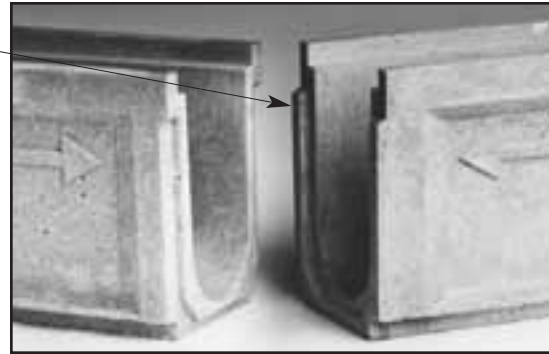
PolyWall Sidewall Extensions

PolyWall I and II Sidewall Extensions allow the designer or contractor to extend a continuous-sloping channel run from 30 m (98.1') to 90 m (294.3') without necessity of a catch basin or outlet.



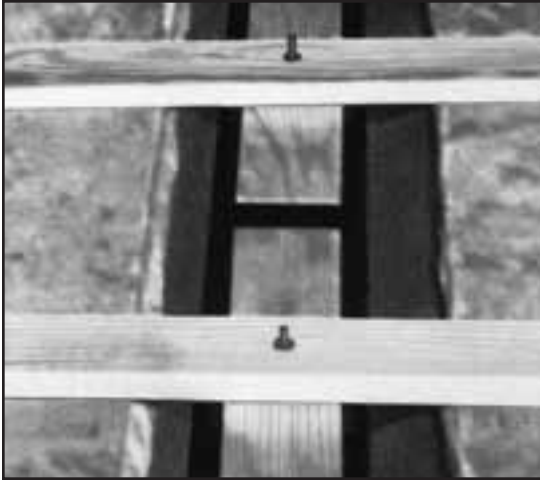
Gender Mender Outlet Channel

A series of specially modified channels that addresses the difficulties encountered when two sloping channels converge where a vertical outlet is required. For every outlet channel (050, 100, 150, 200, 250 and 300), a Gender Mender channel is molded with a female interlocking joint at the low point. This feature provides proper channel alignment and eliminates field fabrication for these center draining configurations.



Overlay Rails (Must Use Reinforced Grate)

Overlay Rails are made of galvanized or stainless steel and are applied to any standard channels. They cover and protect the channel edge in medium-duty traffic applications. When visual aesthetics are important, the Overlay Rails enhance the appearance of the PolyDrain channels.



Suspended Installation

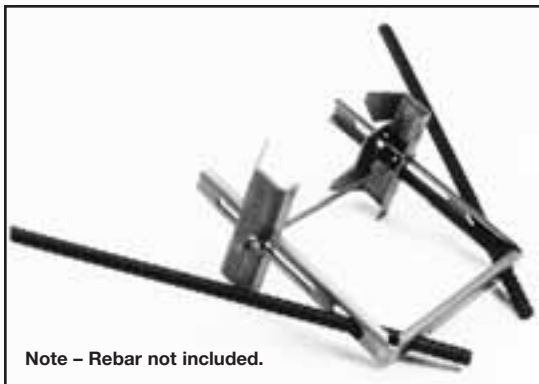
This method is best suited for retrofit installations. The existing slab serves to suspend channel sections, or in a new construction using forming boards for the same purpose.

Using 2" x 4" boards of sufficient length to span the trench, and 6" long threaded bolts or all thread bolts with toggle bars, secure channels to the boards.

With channels properly positioned, place and consolidate concrete under and around the channels, then finish to the proper grade.

PolyClip Installation Aids

PolyClip was developed to speed channel installation and make the joining of the channels more secure before the pour. PolyClip consists of: two special securing brackets (one for either side of the channel); a "no-float" U-shaped leg that serves to maintain proper height and keep channels from floating during the pour; and a securing bolt to keep the entire appliance attached to the channel.



PolyClip Installation

PolyClips are installed at the channel joints. Height adjustment is made by loosening the wingnut and sliding brackets up or down on the U-legs. Tightening the wingnut fixes the height while at the same time drawing the channels together for a tight joint. Channels can then be secured to the subgrade either by pouring a non-structural anchoring slab or by driving two rebar "nails" through preformed holes in the U-leg.

Bedding Slurry Method

Place a low-slump (1"-2") concrete in the trench to a depth that will ensure at least 4" of concrete under the channels. (Patties of stiff concrete can be substituted for continuous slurry.) Position channels in the slurry, ensuring that the concrete comes above the anchoring ribs. Re-check channel alignment and grade before the concrete stiffens.

After the bedding slurry sets, concrete can be placed and consolidated around the channels and finished to the proper grade.

Standard cold joint details and procedures must be followed on bedding slurry pour to prevent floor expansion from damaging channels.



Suggested Specification (Short Form)

Section 02725 — Precast Trench Drain and Catch Basin System

Part 2 — Products

A. Acceptable manufacturers:

1. Surface drain system:

- a. Base: PolyDrain; manufactured by ABT, Inc., PO Box 837, 259 Murdock Rd., Troutman, NC 28166; 1-800-438-6057.

B. Components:

1. Drain trench: Fabricated of polyester polymer concrete, 155 mm (6.1") wide, 100 mm (4") ID with radiused bottom, having following attributes:
 - a. Lengths: Nominal 0.5 meter (19.6") and 1.0 meter (39.19").
 - b. Bottoms: Sloped to provide 0.6% slope.
 - c. Anchoring ribs: Full length.
 - d. Grate locking slots: Blind, vibration damping, thermoplastic.
 - e. Interlocking ends.
 - f. Available to 90 m (294'), continuous slope using sidewall extensions.

Specifier: If corrosive products will be transported with this system, change polyester to vinyl ester and add compatible sealant. See the *PolyDrain Chemical Resistance Guide* for suitable material specification information.

2. Grates:

- a. Perforated heel-proof, steel.
- b. Slotted steel.
- c. Ductile iron anchor frames.
- d. Grey iron anchor frames.
- e. Fiberglass.

3. Accessories:

- a. End plates.
- b. Outlet plates.
- c. Strainer.
- d. Locking devices.
- e. Sealant.
- f. Polywall sidewall extensions.
- g. Installation devices.
- h. Catch basins.

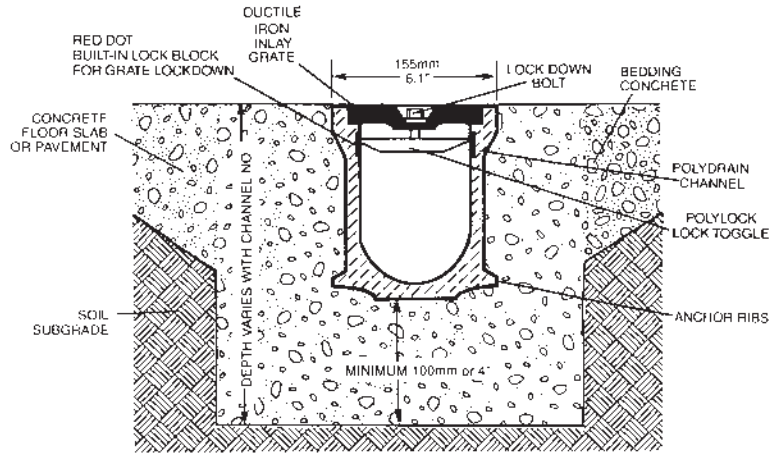
Specifier: Select grate type from catalog and enter part number. Assure that selected type meets loading requirements. Select proper accessories, insert model numbers. Always use cast anchor frames for hard tire loadings. Delete items not used.

Part 3 — Execution

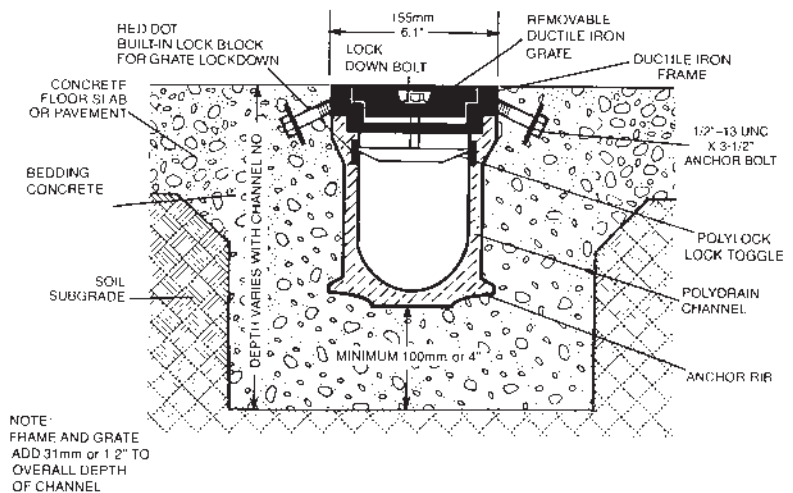
3.02 Preparation

- A. Where sealant is required, roughen surface, and acetone wash area to receive sealant.

Cross-Sectional View Channel with In-lay Type Grate



Cross-Sectional View Channel with Frame and Grate



3.03 Installation

- A. In accord with manufacturer's instructions.
- B. Utilize manufacturer's approved installation device to assure proper joints, drawn tightly together by device.
- C. The trench drain and its encapsulating concrete should be isolated from the expansion and contraction stress of the adjacent slabs.

For comprehensive long-form specifications and details in print or digital format, call 800-438-6057.

ABT, INC.