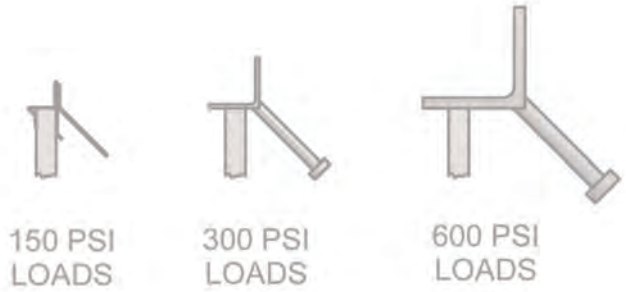
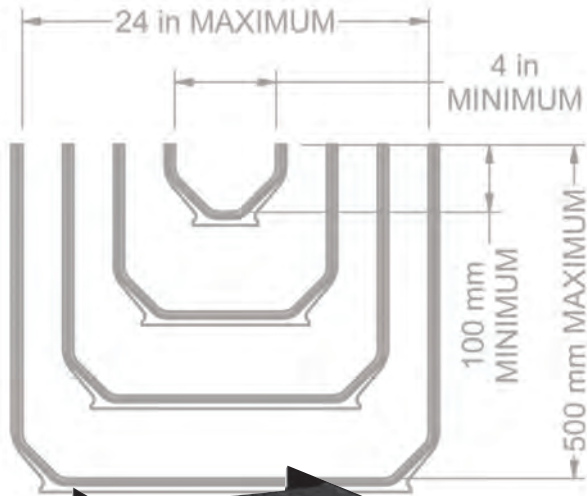


PolyDrain® PDX

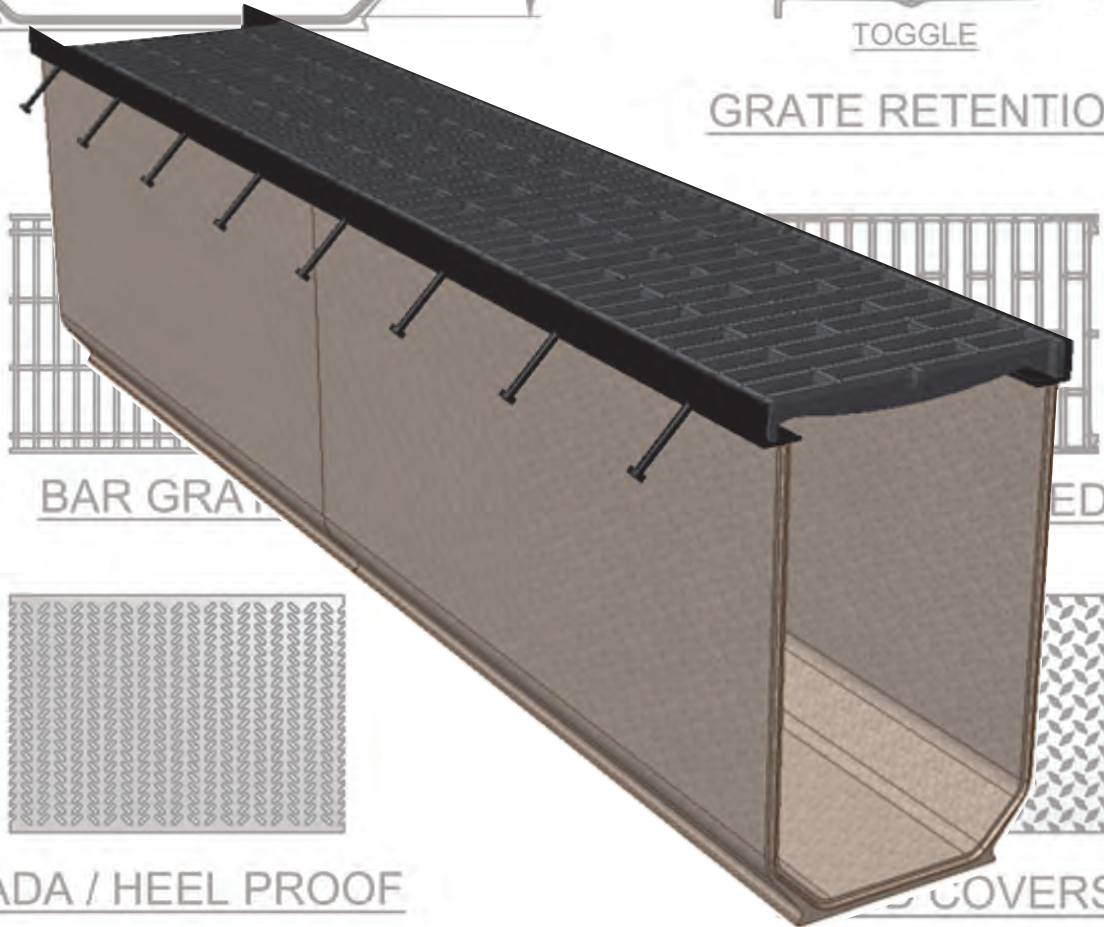
Versatile Modular Polymer Concrete
Trench Forming System



RAILS



GRATE RETENTION



ABT, INC.

Advanced Building Technologies



www.abtdrains.com
Today's Hydraulic Solutions

PolyDrain PDX

PDX is the first and only versatile chemical resistant modular polymer concrete system. The PDX system allows the designer or customer to select a modular trench drain by trench width, depth, and slope as required, and not from a limited product selection.

Product Features:

Channels - Manufactured from UL / ULC certified polymeric materials, the channels feature a high precision tongue and groove joint for positive alignment and a superior configuration for sealant application. Visit www.abtdrains.com for polymer concrete physical properties.

Grate Options - A wide range of grate options exist for pedestrian to airport applications. Select grates with the right strength, style, and corrosion resistance for the application.

Frame Options - Steel, stainless steel, painted steel, galvanized steel, or FRP styles are available. Select the best rail material for your application. All rails are independently anchored into the surrounding concrete so that the encapsulation concrete receives the horizontal loads, not the channel walls.

Variable Grate Retention Systems - For applications with substantial horizontal loads, pin locks are available and recommended. Toggle locks can be used when longitudinal loads are low. No grate lock is an option where horizontal loads and grate retention are not a consideration. ABT can assist you in making a suitable selection.

Ease of Installation - The system can be installed using the suspension method, installation device, or no-float legs as the application requires.

Eliminates Sub-Slab Barrier Penetration - Geo-membrane penetrations during trench drain installation and monolithic pours are eliminated using no-float legs and anchor slab.

Design Chart Instructions:

Utility Trench - Select the width and depth sufficient to contain the application's wire or pipes for each run. Select materials and the style of cover desired.

Containment or Storage Trench - Lay out the length of trench for the site. Determine the maximum storage volume required for this trench run. Divide volume storage by trench length. In "Trench Storage Capacity" below, find which trench widths and depths provide sufficient storage and select the one that is best for the application.

Drainage Trench - Simple drainage systems can be determined if the application's run length and hydraulic load are known. In the "Run Length vs. Slope" table, select a slope which equals or exceeds the required run length. Add or subtract any site slope to the channel slope. Determine what trench width is required for this hydraulic load using the "Flat Site Flow" table on the opposite page. Additional technical information is available in the "Hydraulic Design Guide" at www.abtdrains.com. For more complex hydraulic applications, contact ABT for assistance.

Run Length vs. Slope

Channel Slope	Run Length		Channel Slope	Run Length	
	Ch. or M	Feet		Ch. Or M	Feet
0.0%	∞	∞	4.0%	10	32.8
0.5%	80	262.5	5.0%	8	26.2
1.0%	40	131.2	8.0%	5	16.4
1.5%	27	87.6	10%	4	13.1
2.0%	20	65.6	20%	2	6.6
2.5%	16	52.5	40%	1	3.3

Note: Intermediate slopes in 0.5% increments between those shown above are possible with decreased run lengths. Non-sloped trenches are available in 10 mm depth increments. Contact ABT for availability and additional information.

Physical Properties for

ABT's Polyester Polymer Concrete

Property	Test Method	Value
Compressive Strength	ASTM C579	17,000 psi Minimum
Bending Strength	ASTM C580	4,000 psi Minimum
Tensile Strength	ASTM C307	2,000 psi Minimum
Moisture Absorption	ASTM C140	0.2% Maximum
Chemical Resistance	ASTM C267	Pass - Automotive Fluids
Freeze/Thaw (1,600 Cycles)	ASTM C666	No Weight Loss
Fungi Growth Resistance	ASTM G21	Zero (0) Mold Growth
Flame Spread - UL / ULC	UL 723	Class A - Flame 5; Smoke 95

Trench Storage Capacity and Cross Section Area

Trench Depth	4 Inch		5 Inch		6 Inch		8 Inch		10 Inch		12 Inch		18 Inch		21 Inch		24 Inch		
	mm	Inch	Gal/Ft	Sq In	Gal/Ft	Sq In	Gal/Ft	Sq In	Gal/Ft	Sq In	Gal/Ft	Sq In	Gal/Ft	Sq In	Gal/Ft	Sq In	Gal/Ft	Sq In	
100	3.94	0.67	12.87	0.87	16.81	1.08	20.75	1.49	28.62	1.90	36.50	2.30	44.37	3.53	67.99	4.15	79.80	4.76	91.61
150	5.91	1.08	20.75	1.38	26.65	1.69	32.56	2.30	44.37	2.92	56.18	3.53	67.99	5.37	103.43	6.29	121.14	7.21	138.86
200	7.87	1.49	28.69	1.90	36.56	2.31	44.43	3.13	60.18	3.94	75.93	4.76	91.68	7.22	138.92	8.44	162.54	9.67	186.17
250	9.84	1.91	36.68	2.42	46.53	2.93	56.37	3.95	76.05	4.97	95.74	6.00	115.42	9.06	174.48	10.60	204.01	12.13	233.53
300	11.81	2.32	44.74	2.94	56.56	3.55	68.37	4.78	91.99	6.01	115.61	7.23	139.23	10.91	210.10	12.75	245.53	14.60	280.96
350	13.78	2.75	52.87	3.46	66.65	4.18	80.43	5.61	107.99	7.04	135.54	8.47	163.10	12.77	245.78	14.92	287.12	17.06	328.46
400	15.75	3.17	61.05	3.99	76.80	4.81	92.55	6.44	124.04	8.08	155.54	9.72	187.04	14.62	281.52	17.08	328.77	19.53	376.01
450	17.72	3.60	69.30	4.52	87.01	5.44	104.73	7.28	140.16	9.12	175.60	10.96	211.03	16.48	317.33	19.25	370.48	22.01	423.63
500	19.69	4.03	77.61	5.05	97.29	6.08	116.98	8.12	156.35	10.17	195.72	12.21	235.09	18.35	353.20	21.42	412.25	24.48	471.31



Flat Site Flow Capacity for 19.69 Inch [500 mm] Deep Channel

Invert Slope	4 Inch			5 Inch			6 Inch			8 Inch			10 Inch		
	GPM	CFS	FPS	GPM	CFS	FPS	GPM	CFS	FPS	GPM	CFS	FPS	GPM	CFS	FPS
0.5%	741	1.65	3.06	1,080	2.41	85.9	1,468	3.27	4.03	2,380	5.30	4.88	3,461	7.71	5.67
1.0%	1,048	2.33	4.33	1,527	3.40	122	2,076	4.62	5.69	3,366	7.50	6.91	4,895	10.9	8.02
1.5%	1,283	2.86	5.30	1,870	4.17	149	2,542	5.66	6.97	4,123	9.19	8.46	5,995	13.4	9.83
2.0%	1,481	3.30	6.12	2,159	4.81	172	2,936	6.54	8.05	4,761	10.6	9.77	6,922	15.4	11.3
2.5%	1,656	3.69	6.85	2,414	5.38	192	3,282	7.31	9.00	5,323	11.9	10.9	7,739	17.2	12.7
4.0%	2,095	4.67	8.66	3,054	6.80	243	4,152	9.25	11.4	6,733	15.0	13.8	9,789	21.8	16.0
5.0%	2,342	5.22	9.68	3,414	7.61	272	4,642	10.3	12.7	7,527	16.8	15.4	10,945	24.4	17.9
8.0%	2,963	6.60	12.2	4,319	9.62	344	5,871	13.1	16.1	9,521	21.2	19.5	13,844	30.8	22.7
10%	3,313	7.38	13.7	4,828	10.8	384	6,564	14.6	18.0	10,645	23.7	21.8	15,478	34.5	25.4
20%	4,685	10.4	19.4	6,828	15.2	543	9,283	20.7	25.5	15,055	33.5	30.9	21,890	48.8	35.9
40%	6,625	14.8	27.4	9,657	21.5	769	13,128	29.2	36.0	21,291	47.4	43.7	30,957	68.97	50.7

Invert Slope	12 Inch			15 Inch			18 Inch			21 Inch			24 Inch		
	GPM	CFS	FPS	GPM	CFS	FPS	GPM	CFS	FPS	GPM	CFS	FPS	GPM	CFS	FPS
0.5%	4,698	10.5	6.41	6,825	15.2	7.44	9,258	20.6	8.41	11,979	26.7	9.32	14,974	33.4	10.2
1.0%	6,643	14.8	9.07	9,652	21.5	10.5	13,093	29.2	11.9	16,941	37.7	13.2	21,176	47.2	14.4
1.5%	8,137	18.1	11.1	11,821	26.3	12.9	16,036	35.7	14.6	20,749	46.2	16.1	25,936	57.8	17.7
2.0%	9,395	20.9	12.8	13,650	30.4	14.9	18,516	41.3	16.8	23,959	53.4	18.6	29,948	66.7	20.4
2.5%	10,504	23.4	14.3	15,261	34.0	16.6	20,702	46.1	18.8	26,787	59.7	20.8	33,483	74.6	22.8
4.0%	13,287	29.6	18.1	19,304	43.0	21.1	26,186	58.3	23.8	33,883	75.5	26.4	42,353	94.4	28.8
5.0%	14,855	33.1	20.3	21,582	48.1	23.5	29,277	65.2	26.6	37,882	84.4	29.5	47,352	106	32.2
8.0%	18,790	41.9	25.6	27,299	60.8	29.8	37,033	82.5	33.6	47,918	107	37.3	59,896	133	40.8
10%	21,008	46.8	28.7	30,522	68.0	33.3	41,404	92.2	37.6	53,573	119	41.7	66,966	149	45.6
20%	29,710	66.2	40.5	43,164	96.2	47.1	58,554	130.5	53.2	75,764	169	59.0	94,704	211	64.5
40%	42,017	93.6	57.3	61,043	136.0	66.6	82,808	184.5	75.2	107,147	239	83.4	133,931	298	91.2



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