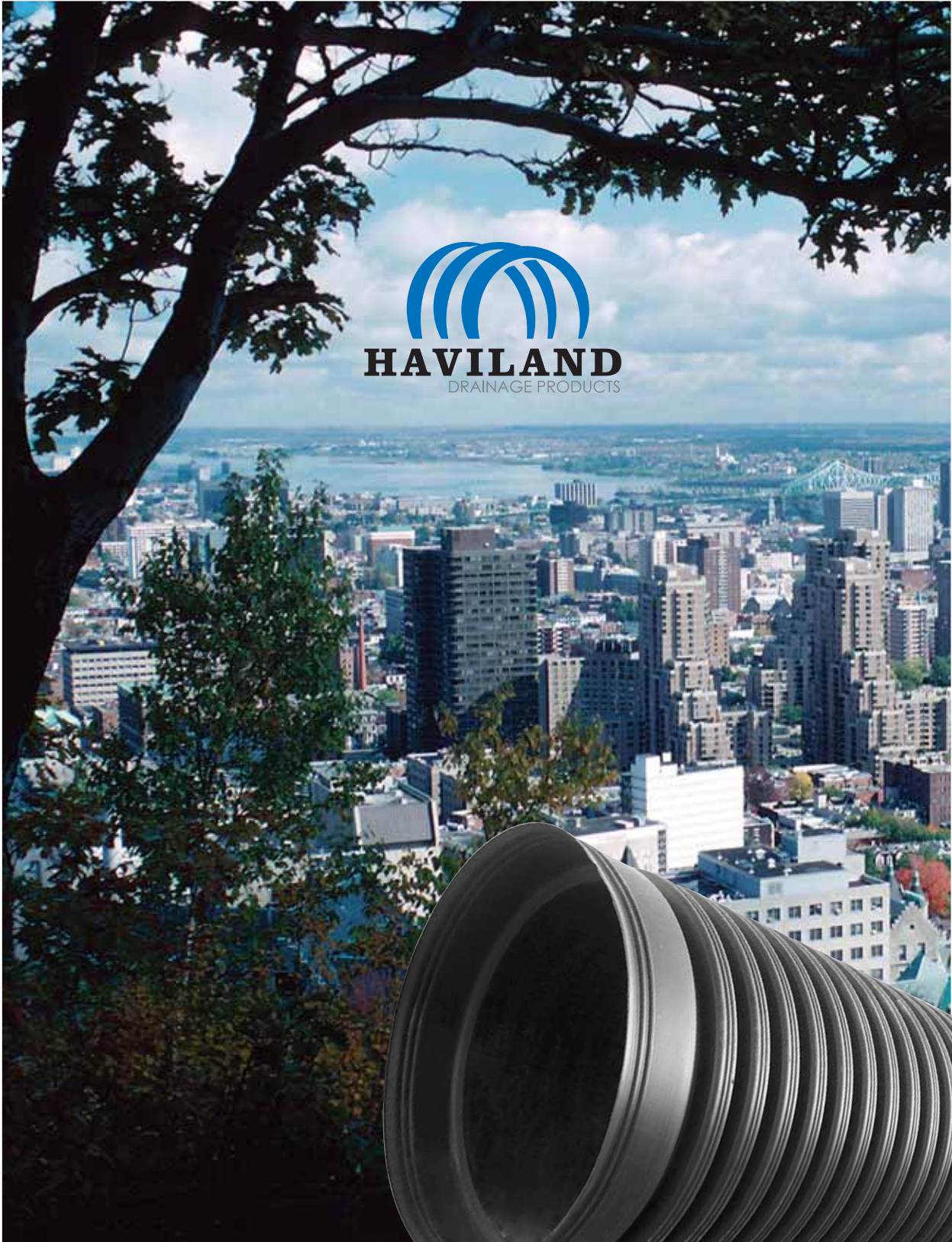




HAVILAND
DRAINAGE PRODUCTS

Haviland Drainage Products Co.
Box 97 • Haviland, Ohio 45851
Ph. (419) 622-4611 • Fax (419) 622-6911
www.haviland-drainage.com




HAVILAND
DRAINAGE PRODUCTS

Solutions in Drainage

MISSION STATEMENT

For more than five decades, Haviland Drainage Products has built its business on this rule:

Service to our customers is one of our top priorities.

Beginning with our dedicated employees, our well-trained sales staff, friendly order entry and shipping personnel, we are determined to provide superior drainage materials and service to you, our customer. Our professional staff is easily accessible before and after the sale for assistance in product information. We maintain a large inventory

and our own fleet of trucks. With our manufacturing capabilities and quality control, be assured that you will receive prompt attention and delivery.

An excellent product and superior service for a competitive price in today's market will continue to be our goal. As a service and convenience for our customers, we have developed this catalog to provide you with a better understanding of our products. Please feel free to contact anyone in our customer service department or our sales representative in your area.

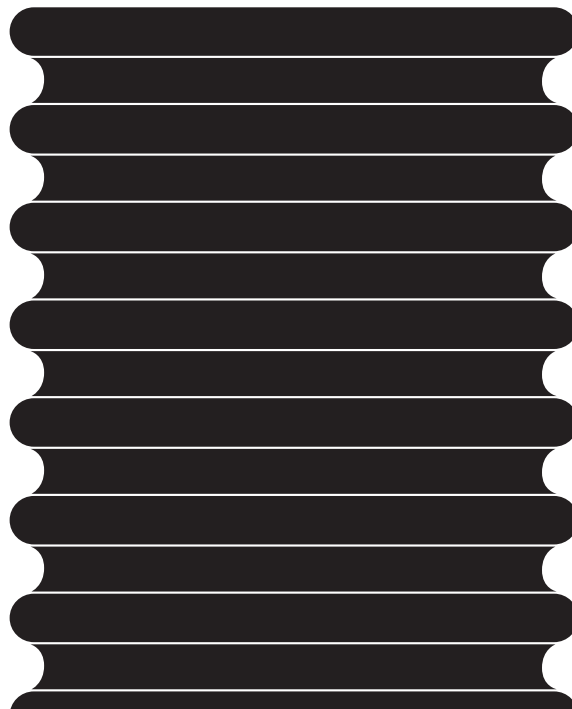


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Size	Length (ft)	Description	Item #	Stock
2"	100	Perf	10030201	
	100	Solid	10030200	
	500	Perf	10030204	N
	500	Solid	10030203	N
3"	10	Perf	10030317	
	10	Perf w/coupler 10/bundle	10030311	
	10	Solid	10030312	
	100	Perf	10030301	
	100	Sock	10030309	
	100	Solid	10030300	
	250	Perf	10030303	
	250	Sock	10030310	
	250	Solid	10030302	
	300	Perf	10030305	
	300	Sock	10030333	N
	300	Solid	10030304	
	5750	Perf *	10030306	
4"	10	Perf w/internal coupler 10/bundle	10030401	
	10	Solid w/coupler 10/bundle	10030400	
	100	Perf	10030404	
	100	Sock	10030413	
	100	Solid	10030403	
	150	Perf	10030407	
	150	Sock	10030414	
	150	Solid	10030406	
	250	Orange	10030462	
	250	Yellow	10030461	
	250	Perf	10030409	
	250	Sock	10030415	
	250	Solid	10030408	
	3250	Perf *	10030448	
	3250	Sock *	10030416	
	3250	Solid *	10030477	N
	5"	150	Perf	10030501
150		Sock	10030508	
150		Solid	10030500	
2150		Perf *	10030505	
2150		Sock *	10030509	N
2150		Solid *	10030512	N

Size	Length (ft)	Description	Item #	Stock
6"	20	Perf	10030611	
	20	Solid	10030612	
	100	Perf	10030601	
	100	Sock	10030608	
	100	Solid	10030600	
	1620	Perf *	10030605	
	1620	Sock *	10030609	
	1620	Solid *	10030604	
8"	20	Perf	10030801	
	20	Sock	10030809	N
	20	Solid	10030800	
	620	Perf *	10030803	
	620	Sock *	10030833	
	620	Solid *	10030802	
	875	Perf *	10030805	
	875	Sock *	10030811	N
	875	Solid *	10030804	
10"	20	Perf	10031002	
	20	Sock	10031005	N
	20	Solid	10031001	
	580	Perf *	10031004	
	580	Sock *	10031007	N
	580	Solid *	10031003	
12"	20	Perf	10031202	
	20	Sock	10031206	N
	20	Solid	10031201	
	24	Solid	10031205	
	330	Perf *	10031204	
	330	Solid *	10031203	
15"	20	Perf	10031502	
	20	Sock	10031504	N
	20	Solid	10031501	
	24	Solid	10031503	
18"	20	Perf	10031802	
	20	Sock	10031822	N
	20	Solid	10031801	
24"	20	Solid	10032401	

* requires specialized handling equipment

HEAVY DUTY PIPE & TUBING

Haviland's heavy duty pipe and tubing has the strength, flexibility and endurance to fulfill most job requirements. Made of high-density polyethylene plastic, our tubing meets or exceeds ASTM F 405 and ASTM F 667 standards. Our tubing and pipe is available in 2" through 24" diameters in the lengths listed.



HIGHWAY PIPE



Used mainly for highway related drainage applications, Haviland's highway pipe conforms to AASHTO M-252 and AASHTO M-294 standards. Superior strength, durability and quality are just a few of the many reasons for choosing our highway pipe. Call for special pricing based on size and location, denoting the applicable job and DOT specification numbers. It is necessary to refer to your local DOT requirements before ordering highway pipe.

HIGHWAY PIPE				
Size	Length (ft)	Description	Item #	Stock
4"	250	Perf	10030409	
	250	Sock *	10030437	
	250	Solid	10030408	
	3250	Perf	10030448	
	3250	Solid	10030477	N
6"	100	Perf	10030601	
	100	Sock *	10030637	
	100	Solid	10030600	
	1620	Perf	10030605	
	1620	Solid	10030604	
8"	20	Perf	10030801	
	20	Solid	10030800	
	620	Perf	10030803	
	620	Solid	10030802	
	875	Perf	10030805	
	875	Solid	10030804	
10"	20	Perf	10031002	
	20	Solid	10031001	
	580	Perf	10031004	
	580	Solid	10031003	
12"	20	Perf	10031202	
	20	Solid	10031201	
	330	Perf	10031204	
	330	Solid	10031203	
15"	20	Perf	10031502	
	20	Solid	10031501	
18"	20	Perf	10031802	
	20	Solid	10031801	
24"	20	Perf	10032402	
	20	Solid	10032401	

* special orders can be MDOT approved



6" x 1620' Perf

4" x 250' Perf



18" x 20' Solid

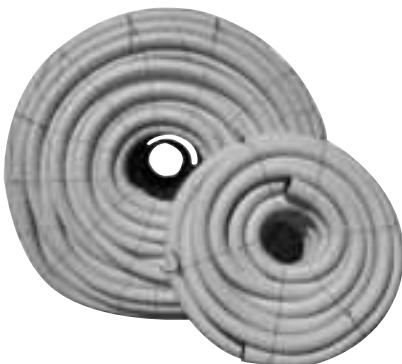
AGRICULTURAL PIPE

Haviland Drainage Products is located in an agricultural community. Therefore, we understand the necessary standards and competitive requirements of the agricultural market. The many types of perforations Haviland offers allow for maximum drainage in all types of soil without further costs. Special heavy duty co-extruded tubing is also available in a 4" diameter. Co-extruded tubing is manufactured with a layer of white plastic on the exterior of the pipe. This layer reflects sunlight, keeping the tubing cooler and stronger prior to installation.

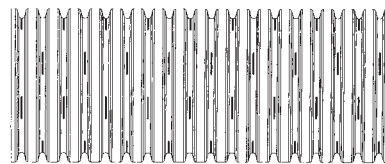
Size	Length (ft)	Description	Item #	Stock
3"	250	Perf	10030303	
	250	Solid	10030302	
	5750	Perf	10030306	
	5750	Sand	10030307	
4"	250	Co-Ex 416	10030417	
	250	Co-Ex 418	10030419	
	250	Co-Ex Sand	10030424	
	250	Co-Ex Solid	10030425	N
	250	Co-Ex Staggered	10030442	
	250	Perf	10030409	
	250	Sand	10030423	
	250	Solid	10030408	
	3250	Co-Ex 416	10030428	
	3250	Co-Ex 418	10030430	
	3250	Co-Ex Sand	10030432	
	3250	Co-Ex Staggered	10030435	
	3250	Perf	10030448	
	3250	Sand	10030431	
	3250	Solid	10030477	N

Size	Length (ft)	Description	Item #	Stock
5"	150	Perf	10030501	
	150	Sand	10030504	
	150	Solid	10030500	
	2150	Perf	10030505	
	2150	Sand	10030507	
	2150	Solid	10030512	N
6"	100	Perf	10030601	
	100	Sand	10030602	
	100	Sock	10030608	
	100	Solid	10030600	
	1620	Perf	10030605	
	1620	Sand	10030607	
	1620	Solid	10030604	
8"	20	Perf	10030801	
	20	Sand	10030810	
	20	Sock	10030809	
	20	Solid	10030800	
	620	Perf	10030803	
	620	Sand	10030807	
	620	Solid	10030802	
	875	Perf	10030805	
875	Sand	10030808		
875	Solid	10030804		
10"	20	Perf	10031002	
	20	Solid	10031001	
	580	Perf	10031004	
	580	Solid	10031003	
12"	20	Perf	10031202	
	20	Solid	10031201	
	330	Perf	10031204	
	330	Solid	10031203	

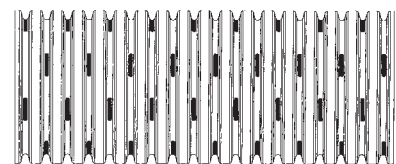
4" x 3250' Co-Ex Staggered



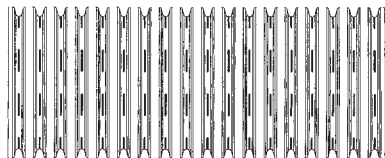
4" x 250' Co-Ex Staggered



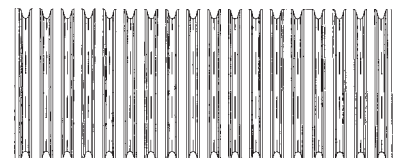
416 Staggered Slot - 1/8" Width



418 Slot - 1/8" Width



416 8-Row Slot - 1/8" Width



Sand Slot

Haviland's corrugated heavy duty fittings are manufactured to the highest standard of quality. They complement our single wall pipe and tubing, which together provide solutions for many drainage applications.

Size	Description	#/Bag	Item #	Stock
TEES				
2"	Tee	10	10050215	
3"	Blind Tee	25	10050327	
	Tap Tee	50	10050323	
	Tee	25	10050315	
4"	Blind Tee	25	10050427	
	Internal Tee	10	10050499	
	Long Tap Tee	50	10050424	
	Short Tap Tee	50	10050423	
	Tee	25	10050415	
5"	Blind Tee	10	10050527	
	Tee	10	10050515	
	5x4 Tee	10	10050517	
6"	Blind Tee	5	10050627	
	Double Tee	5	10050631	
	Tee	5	10050615	
	6x6x5x4 Tee	5	10050617	
8"	Reducing Blind Tee	5	10050827	
	8x8x6x5x4 Tee	5	10050817	
10"	Reducing Blind Tee	3	10051027	
	10x10x8x6 Tee	3	10051017	
12"	Reducing Blind Tee	3	10051227	
	12x12x10x8 Tee	3	10051215	
15"	Reducing Blind Tee	1	10051527	
	15x15x12x10 Tee	1	10051515	
18"	18x18x15 Tee	1	10051815	

Size	Description	#/Bag	Item #	Stock
WYES				
3"	Wye	25	10050316	
4"	Wye	10	10050416	
5"	Wye	5	10050516	
6"	Wye	5	10050616	

CORRUGATED HEAVY DUTY FITTINGS



15" x 15" x 12" x 10" Tee



4" Internal Tee



4" Tee



8" Reducing Blind Tee



4" Long Tap Tee

CORRUGATED HEAVY DUTY FITTINGS

Size	Description	#/Bag	Item #	Stock
COUPLERS				
2"	Internal Coupler	50	10050221	
	Split Coupler	1	10050222	
3"	Internal Coupler	50	10050320	
	Split Coupler	50	10050322	
4"	Internal Coupler	50	10050420	
	Snap Coupler	50	10050421	
	Split Coupler	50	10050422	
5"	Internal Coupler	25	10050520	
	Split Coupler	25	10050522	
6"	Internal Coupler	20	10050620	
	Snap Coupler	20	10050621	
	Split Coupler	50	10050622	
8"	Internal Coupler	10	10050820	
	Snap Coupler	5	10050823	
	Split Coupler	30	10050822	
10"	Internal Coupler	5	10051024	
	Snap Coupler	5	10051023	
	Split Coupler	30	10051022	
12"	Double Bell Coupler	1	10051233	
	Split Coupler	20	10051222	
15"	Double Bell Coupler	1	10051533	
	Split Coupler	5	10051522	
18"	Double Bell Coupler	1	10051844	
	Split Coupler	5	10051822	
24"	Double Bell Coupler	1	10052433	
	Split Coupler	5	10052422	



2" x 3" x 4" Down Spout Adaptor



4" Adaptor



4" Elbow



15" Split Coupler



4" Snap Coupler



4" Internal Coupler

Size	Description	#/Bag	Item #	Stock
END PLUGS				
2"	End Plug	100	10050229	
3"	302 End Plug	50	10050329	
4"	White End Plug	50	10050435	
	401 End Plug	100	10050434	
	402 End Plug	100	10050429	
	402 Perf End Plug	100	10050431	
5"	501 End Plug	50	10050534	
	502 End Plug	50	10050529	
6"	601 End Plug	20	10050636	
	602 End Plug	20	10050629	

Size	Description	#/Bag	Item #	Stock
ELBOWS AND ADAPTORS				
3"	Adaptors	25	10050318	
	Elbow	25	10050317	
4"	Elbow	25	10050417	
	Clay to Plastic Adaptor	50	10050418	
	PVC to Plastic Adaptor	50	10050419	
5"	Clay to Plastic Adaptor	50	10050518	
6"	Clay to Plastic Adaptor	20	10050618	
8"	Clay to Plastic Adaptor	20	10050818	

Size	Description	#/Bag	Item #	Stock
END CAPS				
2"	End Cap	100	10050230	
3"	End Cap	50	10050328	
4"	End Cap	50	10050428	
5"	End Cap	50	10050528	
6"	End Cap	20	10050628	
	End Cap	10	10050828	
8"	End Cap	10	10050828	
	8X4 Offset End Cap	10	10050831	
10"	End Cap	10	10051028	
	10X4 Offset End Cap	10	10051031	
	10X4 Offset w/ Rubber Grommett	10	10051032	
12"	End Cap	5	10051228	
15"	End Cap	1	10051528	
18"	End Cap	1	10051828	
24"	End Cap	1	10052428	

Size	Description	#/Bag	Item #	Stock
REDUCERS				
4x2	Reducer	10	10050432	
4x3	Reducer	10	10050430	
5x4	Reducer	10	10050530	
6x5x4	Reducer	10	10050630	
8x6	Reducer	20	10050830	
10x8	Reducer	5	10051030	
12x10	Reducer	1	10051230	
15X12	Reducer	1	10051530	
15x12x10	Reducer	1	10051531	
18X15	Reducer	1	10051830	
24X18	Reducer	1	10052430	



6" x 5" x 4" Reducer



4" 402 End Plug



3" Wye



4" End Cap



15" End Cap



4" White End Plug

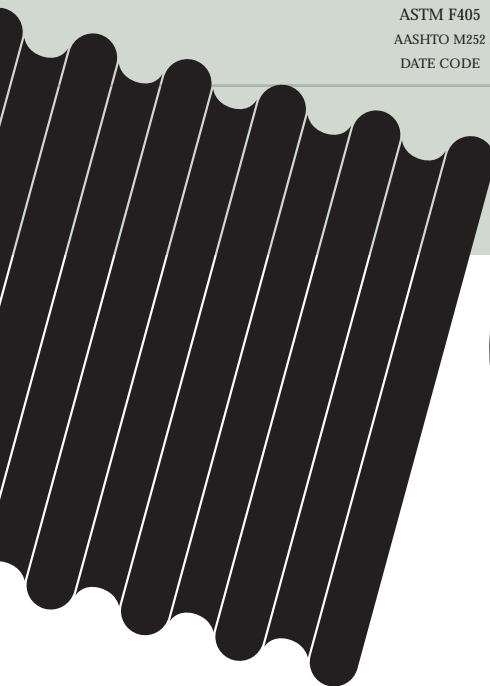
SMOOTH FLOW PIPE NOMINAL DIAMETER (LD.)

	4"	6"	8"	10"	12"	15"	18"	24"	30"	36"	42"	48"
WEIGHT Pounds Per Foot	0.495	0.969	1.82	2.34	3.52	5.12	7.25	11.56	15.64	22.8	26.98	32.99
INSIDE DIAMETER (Nominal)	4"	6"	8"	10"	12"	15"	18"	24"	30"	36"	42"	48"
OUTSIDE DIAMETER (Nominal)	4.6"	6.8"	9.5"	11.75"	14.5"	17.5"	21.6"	27.9"	35.5"	41.8"	48.5"	53.5"
INNER LINER WALL THICKNESS	MIN. .020"	MIN. .020"	MIN. .025"	MIN. .025"	MIN. .035"	MIN. .035"	MIN. .050"	MIN. .060"	MIN. .060"	MIN. .065"	MIN. .070"	MIN. .070"
PIPE STIFFNESS 5% DEFLECTION (Minimum)	50 PSI	50 PSI	50 PSI	50 PSI	50 PSI	42 PSI	40 PSI	34 PSI	28 PSI	22 PSI	20 PSI	18 PSI
WATER INLET AREA (Perforated Pipe) (Minimum)	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.5 SQ. IN/FT	1.5 SQ. IN/FT	1.5 SQ. IN/FT	2.0 SQ. IN/FT	2.0 SQ. IN/FT			
MARKINGS	DPI 4" 100 MM Heavy Duty ASTM F405 AASHTO M252 DATE CODE	DPI 6" 150 MM Heavy Duty ASTM F405 AASHTO M252 DATE CODE	DPI 8" 200 MM Heavy Duty ASTM F667 AASHTO M252 DATE CODE	DPI 10" 250 MM Heavy Duty ASTM F667 AASHTO M252 DATE CODE	DPI 12" 300 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 15" 375 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 18" 450 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 24" 600 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 30" 750 MM Heavy Duty AASHTO M294 DATE CODE	DPI 36" 900 MM Heavy Duty AASHTO M294 DATE CODE	DPI 42" 1050 MM Heavy Duty AASHTO M294 DATE CODE	DPI 48" 1200 MM Heavy Duty AASHTO M294 DATE CODE

REGULAR CORRUGATED PIPE NOMINAL DIAMETER (LD.)

	2"	3"	4"	5"	6"	8"	10"	12"	15"	18"	24"
WEIGHT Pounds Per Foot	0.147	0.213	0.34	0.495	0.76	1.28	1.80	2.97	4.23	5.89	10.68
INSIDE DIAMETER (Nominal)	2"	3"	4"	5"	6"	8"	10"	12"	15"	18"	24"
OUTSIDE DIAMETER (Nominal)	2.45"	3.5"	4.6"	5.7"	6.8"	9.5"	11.75"	14.5"	17.5"	21.6"	27.9"
WALL THICKNESS (Nominal)	.025"	.030"	.033"	.035"	.040"	.042"	.045"	.075"	.090"	.100"	.110"
PIPE STIFFNESS 5% DEFLECTION (Minimum)	35 PSI	35 PSI	35 PSI	35 PSI	35 PSI	35 PSI	35 PSI	50 PSI	42 PSI	40 PSI	34 PSI
WATER INLET AREA (Perforated Pipe) (Minimum)	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.0 SQ. IN/FT	1.5 SQ. IN/FT	1.5 SQ. IN/FT	1.5 SQ. IN/FT	N/A
MARKINGS	N/A	DPI 3" 75 MM Heavy Duty ASTM F405 AASHTO M252 DATE CODE	DPI 4" 100 MM Heavy Duty ASTM F405 AASHTO M252 DATE CODE	DPI 5" 125 MM Heavy Duty ASTM F405 AASHTO M252 DATE CODE	DPI 6" 150 MM Heavy Duty ASTM F405 AASHTO M252 DATE CODE	DPI 8" 200 MM Heavy Duty ASTM F667 AASHTO M252 DATE CODE	DPI 10" 250 MM Heavy Duty ASTM F667 AASHTO M252 DATE CODE	DPI 12" 300 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 15" 375 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 18" 450 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE	DPI 24" 600 MM Heavy Duty ASTM F667 AASHTO M294 DATE CODE

Any of the listed specifications may change at any time, without notice. Please call with any questions.



48" x 20' SF Solid w/ Bell & Spigot ASTM F-477



6" x 20' SF Solid

SMOOTH FLOW PIPE

Smooth Flow pipe is a corrugated polyethylene pipe with a smooth interior. This combination provides a lightweight, durable product for storm sewers, culverts, and many other applications where high strength and maximum

flow are essential. Haviland Smooth Flow pipe is available with plain ends from 4" to 36" and with belled ends from 4" to 48". Smooth Flow pipe conforms to AASHTO M-252 and AASHTO M-294 specifications.

An installation guide is available specifically for Smooth Flow pipe on our website. As shown below, 4" through 6" pipe can be ordered in pallets.

Size	Length (ft)	Description	Item #	Stock
4"	20	SF Perf	10020402	
	20	SF Sock	10020432	N
	20	SF Solid	10020401	
6"	20	SF Perf	10020602	
	20	SF Sock	10020623	N
	20	SF Solid	10020601	
	20	SF Solid w/ Bell	10020610	
8"	20	SF Perf	10020802	
	20	SF Perf w/ Bell	10020804	
	20	SF Sock	10020821	N
	20	SF Sock w/ Bell	10020825	N
	20	SF Solid	10020801	
10"	20	SF Solid w/ Bell	10020803	
	20	SF Perf	10021002	
	20	SF Perf w/ Bell	10021004	
	20	SF Sock	10021023	N
	20	SF Sock w/ Bell	10021024	N
	20	SF Solid	10021001	
12"	20	SF Solid w/ Bell	10021003	
	13	SF Perf w/ Bell	10021214	
	13	SF Solid w/ Bell	10021213	
	20	SF Perf	10021202	
	20	SF Perf w/ Bell	10021207	
	20	SF Sock	10021205	
	20	SF Sock w/ Bell	10021209	
	20	SF Solid	10021201	
	20	SF Solid w/ Bell	10021206	
	24	SF Solid	10021203	
15"	30	SF Solid	10021204	
	13	SF Perf w/ Bell	10021509	
	13	SF Solid w/ Bell	10021513	
	20	SF Perf	10021502	
	20	SF Perf w/ Bell	10021509	
	20	SF Sock	10021504	
	20	SF Sock w/ Bell	10021505	
	20	SF Solid	10021501	
	20	SF Solid w/ Bell	10021507	
	24	SF Solid	10021503	
	30	SF Solid	10021530	

Size	Length (ft)	Description	Item #	Stock
18"	13	SF Perf w/ Bell	10021813	
	13	SF Solid w/ Bell	10021813	
	20	SF Perf	10021802	
	20	SF Perf w/ Bell	10021807	
	20	SF Sock	10021806	
	20	SF Sock w/ Bell	10021825	
	20	SF Solid	10021801	
	20	SF Solid w/ Bell	10021820	
	24	SF Solid	10021803	
	30	SF Solid	10021805	
24"	13	SF Perf w/ Bell	10022414	N
	13	SF Solid w/ Bell	10022413	
	20	SF Perf	10022402	N
	20	SF Perf w/ Bell	10022422	
	20	SF Sock w/ Bell	10022423	
	20	SF Solid	10022401	
	20	SF Solid w/ Bell	10022421	
30"	24	SF Solid	10022407	
	30	SF Solid	10022430	N
	13	SF Perf w/ Bell	10023015	N
	13	SF Solid w/ Bell	10023013	
	20	SF Perf	10023022	N
36"	20	SF Perf w/ Bell	10023023	
	20	SF Solid	10023020	
	20	SF Solid w/ Bell	10023021	
	13	SF Perf w/ Bell	10023015	N
	13	SF Solid w/ Bell	10023613	
42"	20	SF Perf w/ Bell	10203622	
	20	SF Solid	10023620	
	20	SF Solid w/ Bell	10023621	
	13	SF Perf w/ Bell	10024214	N
	13	SF Solid w/ Bell	10024213	
48"	20	SF Perf w/ Bell	10024220	N
	20	SF Solid w/ Bell	10024220	
	13	SF Perf w/ Bell	10024814	N
	13	SF Solid w/ Bell	10024813	
	20	SF Perf w/ Bell	10024801	N
	20	SF Solid w/ Bell	10024820	



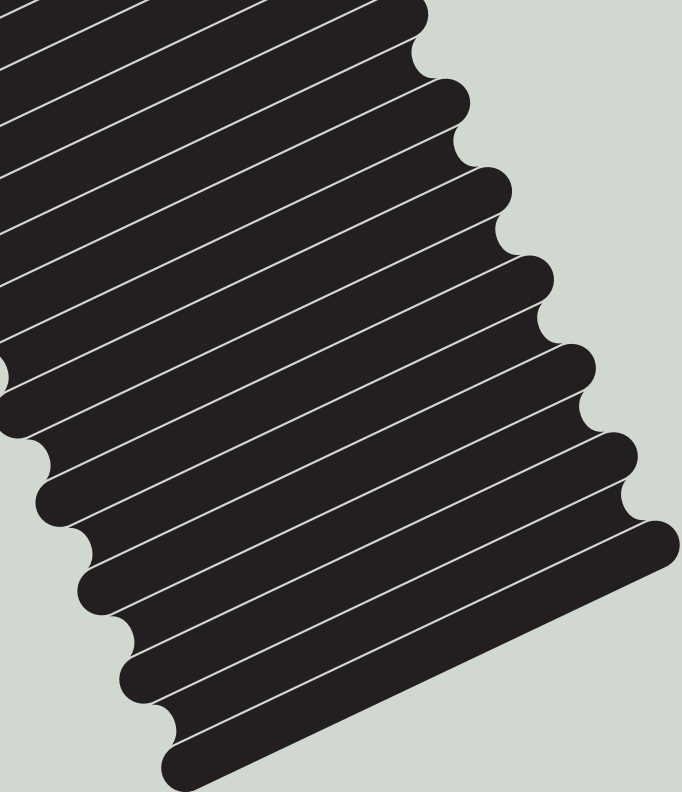
8" x 20' SF Solid w/ Bell



12" x 20' SF Solid



18" x 20' SF Solid w/ Bell & Spigot ASTM F-477



F-477 PIPE & WT PIPE

Haviland's F-477 pipe is a Smooth Flow pipe with an attached bell and spigot. A preinstalled rubber gasket conforms to ASTM F-477 specifications.

For applications requiring gravity flow storm drainage, Haviland offers WT pipe. It is a Smooth Flow pipe with a specially manufactured belled end and lock tite gasket. To assist in assembling this connection requires lubricating.

Size	Length (ft)	Description	Item #	Stock
F-477 Pipe All W/Bell				
4"	20	F-477 Perf	10020421	N
	20	F-477 Solid	10020420	N
6"	20	F-477 Perf	10020611	N
	20	F-477 Solid	10020610	N
8"	20	F-477 Perf	10020823	N
	20	F-477 Solid	10020822	N
10"	20	F-477 Perf	10021011	N
	20	F-477 Solid	10021010	N
12"	20	F-477 Perf	10021221	N
	20	F-477 Solid	10021220	N
15"	20	F-477 Perf	10021521	N
	20	F-477 Solid	10021520	N
18"	20	F-477 Perf	10021821	N
	20	F-477 Solid	10021820	N
24"	20	F-477 Perf	10022432	N
	20	F-477 Solid	10022431	N
30"	20	F-477 Perf	10023025	N
	20	F-477 Solid	10023024	N
36"	20	F-477 Perf	10023632	N
	20	F-477 Solid	10023631	N
42"	20	F-477 Perf	10024225	N
	20	F-477 Solid	10024224	N
48"	20	F-477 Perf	10024822	N
	20	F-477 Solid	10024821	N

Size	Length (ft)	Description	Item #	Stock
WT Pipe All W/Bell				
8"	20	WT	10020824	
10"	20	WT	10021012	
12"	20	WT	10021222	
15"	20	WT	10021522	
18"	20	WT	10021822	
24"	20	WT	10022433	
30"	20	WT	10023026	
36"	20	WT	10023633	
42"	20	WT	10024226	
48"	20	WT	10024823	



18" x 20' F-477



12" x 20' WT

SMOOTH FLOW FITTINGS

Smooth Flow fittings are fabricated from Smooth Flow pipe to maintain good flow characteristics through the fitting. Available with plain or belled ends, Smooth Flow fittings can be custom-

fabricated to satisfy the most unique applications. Call your Haviland sales representative to check the price and availability of custom-made items.

Size	Description	Item #	W/Bells	Stock
Smooth Flow Fittings				
22 1/2° Elbows				
4	SF 22 1/2° Elbow	10040420	10040426	
6	SF 22 1/2° Elbow	10040622	10040630	
8	SF 22 1/2° Elbow	10040825	10040836	
10	SF 22 1/2° Elbow	10041027	10041044	
12	SF 22 1/2° Elbow	10041228	10041251	
15	SF 22 1/2° Elbow	10041529	10041551	
18	SF 22 1/2° Elbow	10041830	10041852	
24	SF 22 1/2° Elbow	10042431	10042457	
30	SF 22 1/2° Elbow	10043022	10043063	
36	SF 22 1/2° Elbow	10043622	10043652	
42	SF 22 1/2° Elbow	10044222	10044223	
48	SF 22 1/2° Elbow	10044822	10044823	
45° Elbows				
4	SF 45° Elbow	10040421	10040427	
6	SF 45° Elbow	10040623	10040631	
8	SF 45° Elbow	10040826	10040837	
10	SF 45° Elbow	10041028	10041045	
12	SF 45° Elbow	10041229	10041252	
15	SF 45° Elbow	10041530	10041552	
18	SF 45° Elbow	10041831	10041853	
24	SF 45° Elbow	10042432	10042458	
30	SF 45° Elbow	10043045	10043069	
36	SF 45° Elbow	10043645	10043658	
42	SF 45° Elbow	10044245	10044247	
48	SF 45° Elbow	10044845	10044847	
90° Elbows				
4	SF 90° Elbow	10040422	10040428	
6	SF 90° Elbow	10040624	10040632	
8	SF 90° Elbow	10040827	10040838	
10	SF 90° Elbow	10041029	10041046	
12	SF 90° Elbow	10041230	10041253	
15	SF 90° Elbow	10041531	10041553	
18	SF 90° Elbow	10041832	10041854	
24	SF 90° Elbow	10042433	10042459	
30	SF 90° Elbow	10043090	10043070	
36	SF 90° Elbow	10043605	10043646	
42	SF 90° Elbow	10044290	10044291	
48	SF 90° Elbow	10044890	10044891	
End Caps				
30	SF End Cap	10053001		
36	SF End Cap	10053602		
42	SF End Cap	10054201		
Split Couplers				
30	SF Split Coupler	10053000		
36	SF Split Coupler	10053600		

Size	Description	Item #	W/Bells	Stock
Double Bell Couplers				
30 SF	Double Bell Coupler	10053033		
36 SF	Double Bell Coupler	10053601		
42 SF	Double Bell Coupler	10054202		
Reducers				
6x4	SF Reducer	10040620	10040628	
8x4	SF Reducer	10040820	10040831	
8x6	SF Reducer	10040821	10040832	
10x4	SF Reducer	10041020	10041037	
10x6	SF Reducer	10041021	10041038	
10x8	SF Reducer	10041022	10041039	
12x4	SF Reducer	10041204	10041205	
12x6	SF Reducer	10041220	10041243	
12x8	SF Reducer	10041221	10041244	
12x10	SF Reducer	10041222	10041245	
15x8	SF Reducer	10041520	10041542	
15x10	SF Reducer	10041521	10041543	
15x12	SF Reducer	10041522	10041544	
18x8	SF Reducer	10041808	10041809	N
18x10	SF Reducer	10041820	10041843	
18x12	SF Reducer	10041821	10041844	
18x15	SF Reducer	10041822	10041845	
24x6	SF Reducer	10042406	10042407	N
24x8	SF Reducer	10042444	10042446	
24x10	SF Reducer	10042420	10042448	N
24x12	SF Reducer	10042421	10042449	
24x15	SF Reducer	10042422	10042450	
24x18	SF Reducer	10042423	10042451	
30x10	SF Reducer	10043011	10043053	N
30x12	SF Reducer	10043012	10043054	N
30x15	SF Reducer	10043016	10043058	N
30x18	SF Reducer	10043019	10043061	
30x24	SF Reducer	10043025	10043066	
36x12	SF Reducer	10043612	10043649	
36x15	SF Reducer	10043615	10043650	
36x18	SF Reducer	10043618	10043651	
36x24	SF Reducer	10043624	10043654	
36x30	SF Reducer	10043630	10043657	
42x12	SF Reducer	10044214	10044226	N
42x15	SF Reducer	10044217	10044227	N
42x18	SF Reducer	10044220	10044228	N
42x24	SF Reducer	10044221	10044229	
42x30	SF Reducer	1044232	10044234	
42x36	SF Reducer	10044233	10044235	
48x12	SF Reducer	10044814	10044826	N
48x15	SF Reducer	10044817	10044827	N
48x18	SF Reducer	10044820	10044828	N
48x24	SF Reducer	10044821	10044829	N
48x30	SF Reducer	10044832	10044834	N
48x36	SF Reducer	10044833	10044835	N
48x42	SF Reducer	10044838	10044839	N

S M O O T H

Size	Description	Item #	W/Bells	Stock
Reducing Tees				
4x4	SF Tee	10040424	10040430	
6x4	SF Tee	10040621	10040629	
6x6	SF Tee	10040626	10040634	
8x4	SF Tee	10040822	10040833	
8x6	SF Tee	10040823	10040834	
8x8	SF Tee	10040829	10040840	
10x4	SF Tee	10041023	10041040	
10x6	SF Tee	10041024	10041041	
10x8	SF Tee	10041025	10041042	
10x10	SF Tee	10041031	10041048	
12x4	SF Tee	10041223	10041246	
12x6	SF Tee	10041224	10041247	
12x8	SF Tee	10041225	10041248	
12x10	SF Tee	10041226	10041249	
12x12	SF Tee	10041232	10041255	
15x4	SF Tee	10041523	10041545	
15x6	SF Tee	10041524	10041546	
15x8	SF Tee	10041525	10041547	
15x10	SF Tee	10041526	10041548	
15x12	SF Tee	10041527	10041549	
15x15	SF Tee	10041533	10041555	
18x4	SF Tee	10041805	10041806	
18x6	SF Tee	10041824	10041846	
18x8	SF Tee	10041825	10041847	
18x10	SF Tee	10041826	10041848	
18x12	SF Tee	10041827	10041849	
18x15	SF Tee	10041828	10041850	
18x18	SF Tee	10041834	10041856	
24x4	SF Tee	10042404	10042445	
24x6	SF Tee	10042424	10042452	
24x8	SF Tee	10042425	10042453	
24x10	SF Tee	10042426	10042454	
24x12	SF Tee	10042412	10042447	
24x15	SF Tee	10042428	10042455	
24x18	SF Tee	10042429	10042456	
24x24	SF Tee	10042435	10042461	
30x4	SF Tee	10043005	10043047	

Size	Description	Item #	W/Bells	Stock
Reducing Tees Continued				
30x6	SF Tee	10043007	10043049	N
30x8	SF Tee	10043008	10043050	N
30x10	SF Tee	10043010	10043052	
30x12	SF Tee	10043013	10043055	
30x15	SF Tee	10043015	10043057	
30x18	SF Tee	10043018	10043060	
30x24	SF Tee	10043024	10043065	
30x30	SF Tee	10043030	10043068	
36x6	SF Tee	10043606	10043647	N
36x8	SF Tee	10043608	10043648	N
36x10	SF Tee	10043609	10043610	N
36x12	SF Tee	10043613	10043614	
36x15	SF Tee	10043613	10043617	
36x18	SF Tee	10043623	10043653	
36x24	SF Tee	10043625	10043655	
36x30	SF Tee	10043631	10043632	
36x36	SF Tee	10043629	10043656	
42x6	SF Tee	10044206	10044207	N
42x8	SF Tee	10044208	10044209	N
42x10	SF Tee	10044210	10044211	N
42x12	SF Tee	10044212	10044213	
42x15	SF Tee	10044215	10044216	
42x18	SF Tee	10044218	10044219	
42x24	SF Tee	10044224	10044225	
42x30	SF Tee	10044230	10044231	
42x36	SF Tee	10044236	10044237	
42x42	SF Tee	10044242	10044243	
48x6	SF Tee	10044806	10044807	N
48x8	SF Tee	10044808	10044809	N
48x10	SF Tee	10044810	10044811	N
48x12	SF Tee	10044812	10044813	
48x15	SF Tee	10044815	10044816	
48x18	SF Tee	10044818	10044819	
48x24	SF Tee	10044824	10044825	
48x30	SF Tee	10044830	10044831	
48x36	SF Tee	10044836	10044837	
48x42	SF Tee	10044842	10044843	
48x48	SF Tee	10044848	10044849	



12" SF 22½° Elbow



12" SF 45° Elbow

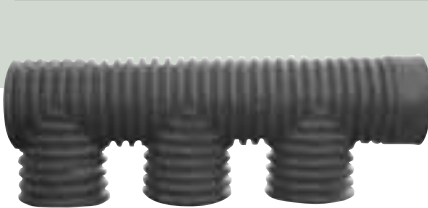


12" SF 90° Elbow w/ Bells

FLOW FITTINGS

Size	Description	Item #	W/Bells	Stock
Double Tees				
4	SF Double Tee	10040425	10040431	
6	SF Double Tee	10040627	10040635	
8	SF Double Tee	10040830	10040841	
10	SF Double Tee	10041032	10041049	
12	SF Double Tee	10041233	10041256	
15	SF Double Tee	10041534	10041556	N
18	SF Double Tee	10041835	10041857	N
24	SF Double Tee	10042436	10042462	N
30	SF Double Tee	10043020	10043027	N
36	SF Double Tee	10043603	10043602	N
42	SF Double Tee	10044244	10044251	N
48	SF Double Tee	10044844	10044846	N
Blind Tees				
12	SF Blind Tee	10041239	10041242	
15	SF Blind Tee	10041537	10041536	
Size	Description	Item #	W/Bells	Stock
Wyes				
4x4	SF Wye	10040423	10040429	
6x4	SF Wye	10046028	10046029	
6x6	SF Wye	10040625	10040633	
8x4	SF Wye	10048031	10048033	
8x6	SF Wye	10048032	10048034	
8x8	SF Wye	10040828	10040839	
10x4	SF Wye	10041033	10041050	
10x6	SF Wye	10041006	10041036	
10x8	SF Wye	10041035	10041051	
10x10	SF Wye	10041030	10041047	
12x4	SF Wye	10041234	10041257	N
12x6	SF Wye	10041235	10041258	
12x8	SF Wye	10041236	10041259	
12x10	SF Wye	10041237	10041260	N
12x12	SF Wye	10041231	10041254	
15x4	SF Wye	10041535	10041557	N
15x6	SF Wye	10041538	10041559	N
15x8	SF Wye	10041539	10041560	

Size	Description	Item #	W/Bells	Stock
Wyes Continued				
15x10	SF Wye	10041540	10041561	
15x12	SF Wye	10041541	10041562	
15x15	SF Wye	10041532	10041554	
18x4	SF Wye	10041836	10041858	N
18x6	SF Wye	10041837	10041859	N
18x8	SF Wye	10041838	10041860	
18x10	SF Wye	10041839	10041861	
18x12	SF Wye	10041840	10041862	
18x15	SF Wye	10041841	10041863	
18x18	SF Wye	10041833	10041855	
24x4	SF Wye	10042402	10043660	N
24x6	SF Wye	10042437	10042463	N
24x8	SF Wye	10042438	10042464	
24x10	SF Wye	10042439	10042465	
24x12	SF Wye	10042441	10042467	
24x15	SF Wye	10042442	10042468	
24x18	SF Wye	10042443	10042469	
24x24	SF Wye	10042434	10042460	
30x4	SF Wye	10043004	10043046	N
30x6	SF Wye	10043006	10043048	N
30x8	SF Wye	10043009	10043051	
30x10	SF Wye	10043014	10043056	N
30x12	SF Wye	10043017	10043059	N
30x15	SF Wye	10043021	10043062	N
30x18	SF Wye	10043023	10043064	N
30x24	SF Wye	10043026	10043067	
30x30	SF Wye	10043099	10043072	
36x6	SF Wye	10043659	10043660	N
36x8	SF Wye	10043661	10043662	
36x10	SF Wye	10043663	10043664	
36x12	SF Wye	10043665	10043666	
36x15	SF Wye	10043667	10043668	
36x18	SF Wye	10043669	10043670	
36x24	SF Wye	10043671	10043672	
36x30	SF Wye	10043673	10043674	
36x36	SF Wye	10043675	10043676	
42x42	SF Wye	10044248	10044250	N
48x42	SF Wye	10044850	10044851	N



Custom Made 24" SF Header



18" x 8" SF Reducing Tee



12" x 6" SF Wye



15" x 15" SF Wye w/ Bells

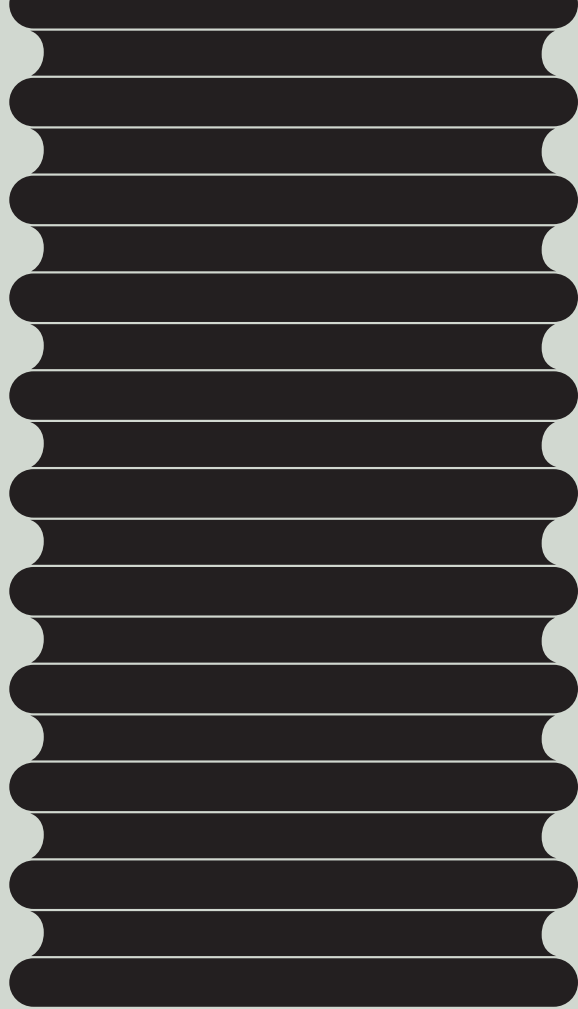


8" SF Double Tee



24" x 12" SF Reducer

Tri-Wall pipe is a three layered high density polyethylene sewer and drain pipe. With a welded bell for consistent fit, the product is truly revolutionary. It provides better impact resistance, added strength and is easier to handle than conventional sewer and drain pipe. Consisting of a white exterior and black interior, tri-wall pipe meets or exceeds ASTM F 810 when installed in accordance to ASTM F 481. It is available in 3", 4" and 6" diameter, in 10' lengths and bundled in pallets. Thirty pallets can be shipped per truckload on 53' trailers. 4" 2 Hole Tri-Wall is available with $\frac{5}{8}$ " holes upon special request.



TRI-WALL PIPE

Size	Length (ft)	Description	Hole Diameter	Item #	Stock
3"	1380	Tri-Wall Solid		10010322	
	1380	Tri-Wall 2 Hole	1/2"	10010323	
4"	900	Tri-Wall Solid		10010424	
	900	Tri-Wall 2 Hole	1/2"	10010425	
	900	Tri-Wall 4-6-8 Hole	5/8"	10010426	
	900	Tri-Wall 4-8-12 Hole	5/8"	10010427	
6"	390	Tri-Wall Solid		10010622	
	390	Tri-Wall 2 Hole	1/2"	10010623	



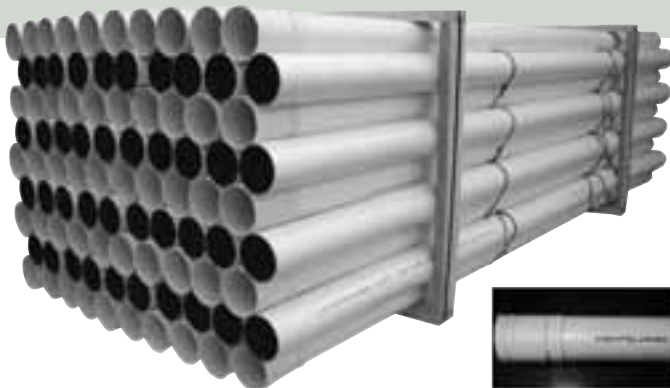
2-Hole



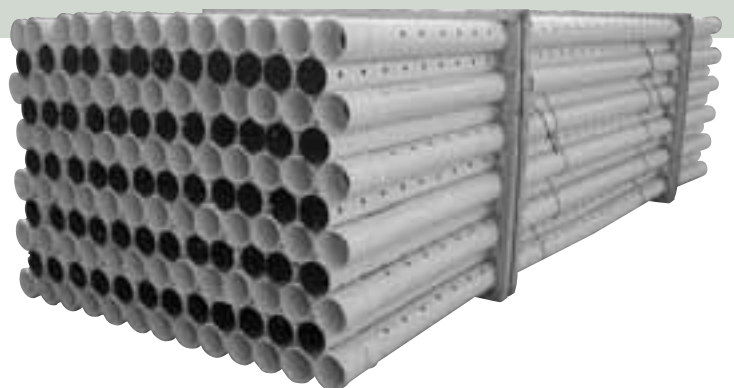
4-6-8



4-8-12



4" x 900' Tri-Wall Solid



3" x 1380' Tri-Wall Perf

LEACH TUBING & SOCK TUBING

For leachfield applications, Haviland offers tubing with a $\frac{5}{8}$ " diameter perforation. This large amount of inlet area provides greater drainage than conventional slots. To prevent soil infiltration, a deep understanding of soil types is imperative prior to use. Check health department regulations for permissible use of this product in your area. Tubing with $\frac{1}{2}$ " diameter is available for special applications.

Sock tubing is a combination of heavy duty pipe and a polyester filter wrap. Primarily used in sandy soils, filter sock ranges in weight from 2.5 to 3.9 oz/yd². Sock wrap is typically purchased pre-wrapped but is also available separately.

Size	Length (ft)	Description	Item #	Stock
4"	10	Leach w/coupler 10/bundle	10030402	
	100	Leach	10030405	
	250	Leach	10030410	
	250	Leach w/ Sock	10030445	N
	3250	Leach	10030456	
5"	150	Leach	10030503	
	150	Leach w/ Sock	10030599	N
	2150	Leach	10030506	
6"	100	Leach	10030603	
	100	Leach w/ Sock	10030666	N
	1620	Leach	10030606	

Size	Length (ft)	Description	Item #	Stock
3"	100	Sock	10030309	
	250	Sock	10030310	
	300	Sock	10030333	N
4"	100	Sock	10030413	
	150	Sock	10030414	
	250	Sock	10030415	
	3250	Sock	10030416	
5"	150	Sock	10030508	
	2150	Sock	10030509	N
6"	100	Sock	10030608	
	1620	Sock	10030609	
8"	20	Sock	10030809	N
	620	Sock	10030833	
	875	Sock	10030811	
10"	20	Sock	10031005	N
	580	Sock	10031007	
12"	20	Sock	10031206	N
	330	Sock	10031207	N
15"	20	Sock	10031504	N
18"	20	Sock	10031822	N
24"	20	Sock	10032403	N
30"	20	SF Sock w/ Bell	10023027	N
36"	20	SF Sock w/ Bell	10023603	N



4" x 250' Leach



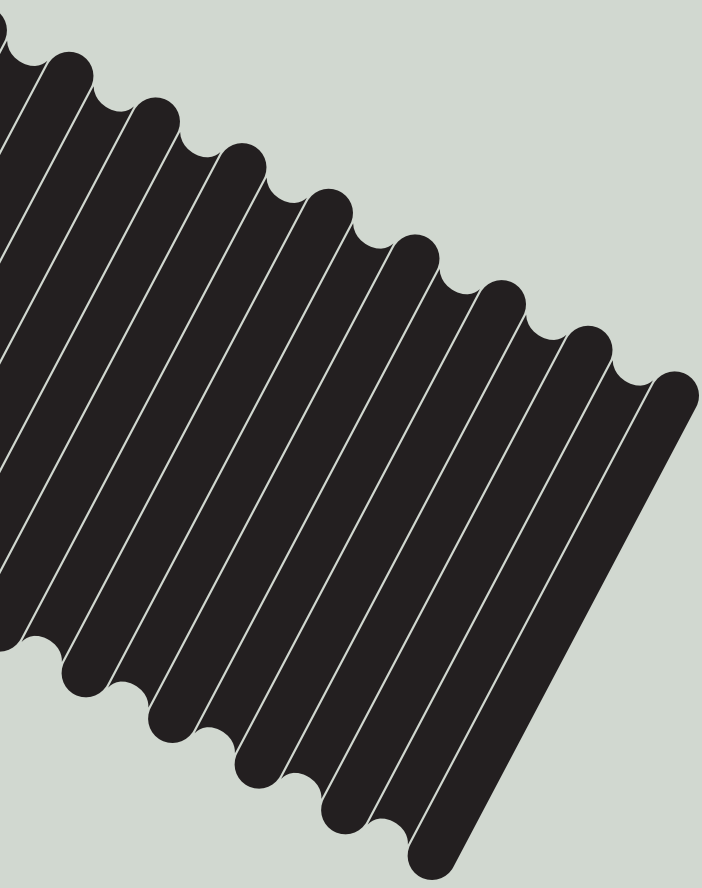
4" x 100' Sock



8" x 20' Sock

SOIL SEPARATORS

In leachfield systems where lack of soil infiltration is essential, we offer non-biodegradable soil separators. These separators are available in several sizes and lengths for your convenience.

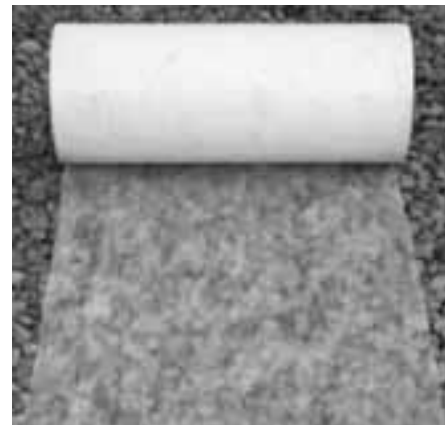


Width (in)	Length (ft)	Color	Oz / yd ²	Item No.
24	1500	white	0.50	40062415
36	300	white	0.50	40063601
36	1500	white	0.50	40063602
48	1500	white	0.50	40064815
60	1500	white	0.50	40066099
72	1500	white	0.50	40067299

Specification	Test Method	Soil Separator
Fiber		Polypropylene
Weight (Ox/yd ²) Applied	ASTM D-3776	0.50
"Thickness, in (mm)"		0.10
"Mullen Burst, p.s.i. (kpa)"	ASTM D-3786	20
Air Permeability	ASTM D-737	800
Trapezoid Tear	ASTM D-4533	n/a
Water Permeability by Permittivity s(-1)	ASTM D-4491	n/a
"AOS, US sieve"	ASTM D-4751	20
"AOS, (UM)"	ASTM D-4751	840



48" x 1500' 36" x 1500' 24" x 1500'



24" x 1500' Soil Separator

GRAVELLESS PIPE

Haviland gravelless pipe offers homeowners a cost effective and sound alternative to gravel-filled leachfields. A single wall corrugated polyethylene pipe, Haviland gravelless is encased in a strong, lightweight filtration fabric. It is shipped in a protective plastic sleeve, which should remain on the pipe until installation. Check local health department requirements concerning proper use of this product.

Specification	Test Method	1.50 Non-Woven
Weight (Oz/yd ²) Applied	ASTM D-3776	1.5
"Thickness, mils"	ASTM D-5199	14.00
"Mullen Burst, p.s.i."	ASTM D-3786	76
Grab Strength	ASTM D-4632	MD 60 XD 50
Elongation	ASTM D-4632	MD 90 XD 86
Trapezoid Tear	ASTM D-4533	MD 31.0 XD 25
Puncture Strength	ASTM D-4833	14.7
Water Permeability by Permittivity s(-1)	ASTM D-4491	4.12
Water Flow Rate 2" C.H gpm/s.f	ASTM D-4491	575
"AOS, US sieve"	ASTM D-4751	20
"AOS, (UM)"	ASTM D-4751	840
Melt Point		425 degrees F
Air Permeability (Fraiser)		751
Fiber Size		6 - Denier
Specific Gravity		1.29 - 1.40

Size	Length (ft)	Description	Item #	Stock
8	20	Gravelless Pipe	10030806	
10	20	Gravelless Pipe	10031006	

Size	Description	#/ Bag	Item #	Stock
8x4	Offset End Cap	10	10050831	
10x4	Offset End Cap	10	10051031	
10X4	Offset w/ Rubber Grommet	10	10051032	



10" x 4" Offset Endcap



8" x 20' Gravelless

Haviland Gravelless Leachfield Installation Guidelines*

Site Factors & System

Layout

1. Gravelless leachfield may be used on any site suitable for conventional gravel drainfield lines, with the exception of those sites containing group 4 soil conditions.

2. High water tables and/or slowly permeable soils severely affect the efficiency of all soil absorption systems.

3. Gravelless leachfield systems can utilize any system of distribution used in conventional systems, i.e. distribution boxes, hillside boxes, serial distribution, manifolds, etc. All of these systems should be

installed in a fashion allowing for each line to follow the contours of the land. In serial distribution systems, individual lines are to be joined with a connecting lateral that provides a one-inch maximum head on the upper line. This ensures that the upper line is full to capacity before any effluent flow can overflow into the next line.

4. All plumbing connections between the house and the gravelless leachfield drainfield, including the septic tank, should meet the specifications required by the local regulations for conventional gravel systems.

5. All local rules and regulations for conventional ground systems apply concerning the distances of soil absorption lines to property lines, wells, lakeshores, bedrock, ground water, etc.

Trench Excavation

1. We recommend that Haviland Gravelless Leachfield be installed in an 18 to 24 inch wide trench. Tight soils

require the larger trench to provide room for proper backfill around the sides and bottom of the gravelless leachfield. A minimum of 10 inches of backfill is recommended; however the amount of backfill used depends on the trench depth as determined by the site evaluation. No gravel is required, just dirt from the trench. The septic tank flow line should be at least one inch above the top of the Haviland Gravelless Leachfield. The trench bottom should be level with a maximum slope of 1 inch per 100 lineal feet.

2. The trench should not be longer than maximum lengths for conventional gravel systems.

Pipe Installation

1. The black shipping bag must be removed before installing.

2. The Haviland Gravelless Leachfield must be placed in the trench with the stripe at the top and joined with split couplers. Pull the filter over the joint to reduce soil infiltration. The filter wrap should be held in place using the tile tape provided by Haviland Drainage Products.

3. End caps or inspection/cleaning ports should be placed on the ends of each line as per local codes. Do not let pipe move in the trench during backfilling. In heavy soil, a loose granular backfill will enhance drainage. Do not use rocks or large clumps of soil as backfill. Seed with grass as soon as possible to prevent soil erosion. *All local regulations take precedence over these guidelines.

2" TUBING, POST TENSION DUCT, & DE-WATERING PIPE

Typically used for drainage and irrigation, 2" tubing is a single wall corrugated pipe made of high density polyethylene. Excellent quality makes this product a top choice for many landscaping projects.

Post Tensioning Duct is an extra heavy walled corrugated tubing used to encase steel bridge reinforcements. Because each application is unique, please call for pricing and availability.

Haviland's De-watering Vacuum pipe is a heavy wall corrugated tubing. It is available in 4", 5" 6", and 8" diameters, and in perf or sock styles. Contact your friendly sales representative for more information on these products.

Size	Length (ft)	Description	Item #	Stock
2"	100	Solid	10030200	
	100	Perf	10030201	
	500	Solid	10030203	
	500	Perf	10030204	



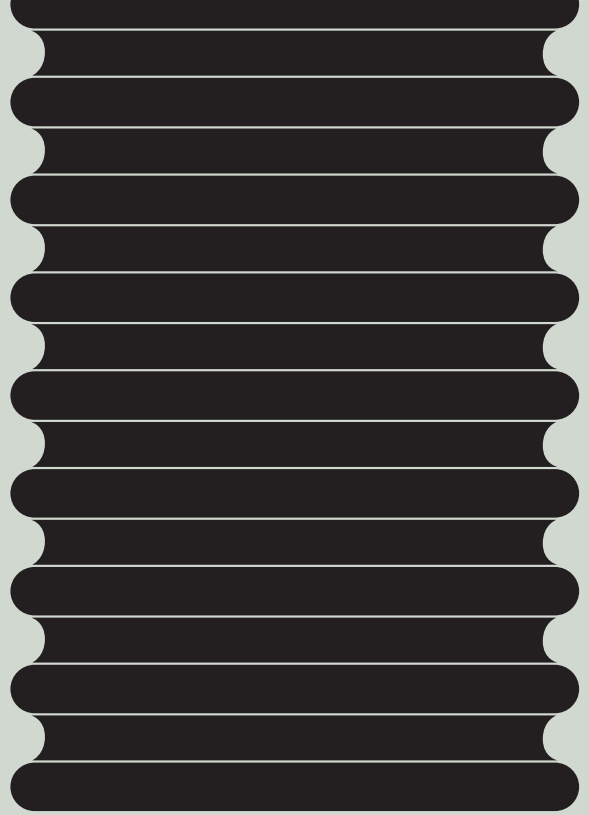
8" x 20' Dewatering Pipe



2" x 100' Solid

SUMPS & SUMP ACCESSORIES

Molded from polyethylene, Haviland sump liners are lightweight, durable, easy to install and completely corrosion proof. Pre-formed collars and flat molded panels allow quick and convenient connections. Sump lids twist on without the use of bolts or fasteners and are available in solid and slotted styles.



Item #	Size	Item Description	Quantity / Bag
10051833	16x24	Sump	1
10051834	16x30	Sump	1
10051835	18x24	Sump	1
10051836	18x30	Sump	1
10051832		Radon Sump Lid	1
10051837		HD Sump Lid	5
10051838		Solid Locking Sump Lid	5
10051839		Heavy Duty 16" Sump Lid	5
10051842		Heavy Duty Locking Sump Lid	5



18" x 30" Sump



16" x 24" Sump
16" x 30" Sump



18" x 24" Sump



Heavy Duty Locking Lid

ACCESSORIES

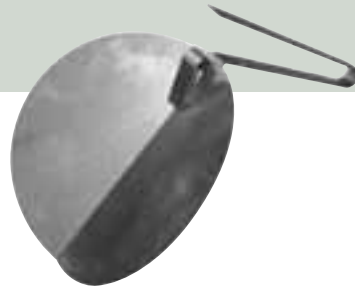
From orange tubing to animal guards, Haviland has many accessories to meet your drainage needs. Call a Haviland Drainage sales representative for advice on proper applications.

Size	Description	Item #	Stock
Animal Guards			
4"	Aluminum Animal Guard	40160420	
	Bar Guard Intake	40160499	
	Plastic Animal Guard	40160422	
	Steel Animal Guard - Solid	40160421	
6"	Steel Finger Animal Guard	40160424	
	Aluminum Animal Guard	40160620	
	Bar Guard Intake	40160699	
	Plastic Animal Guard	40160624	
8"	Seal Tites	40160623	
	Steel Animal Guard - Solid	40160621	
	Steel Finger Animal Guard	40160625	
	Aluminum Animal Guard	40160820	
10"	Bar Guard Intake	40160899	
	Plastic Animal Guard	40160825	
	Screen Animal Guard	40160824	
	Seal Tites	40160823	
	Steel Animal Guard - Solid	40160821	
	Steel Finger Animal Guard	40160822	
12"	Aluminum Animal Guard	40161020	
	Bar Guard Intake	40161099	
	Seal Tites	40161023	
	Steel Animal Guard - Solid	40161021	
	Steel Finger Animal Guard	40161022	

Size	Description	Item #	Stock
12"	Aluminum Animal Guard	40161220	
	Bar Guard Intake	40161299	
	Seal Tites	40161223	
	Steel Animal Guard - Solid	40161221	
15"	Aluminum Animal Guard	40161520	
	Seal Tites	40161523	
18"	Steel Animal Guard - Solid	40161521	
	Aluminum Animal Guard	40161820	
21"	Seal Tites	40161823	
	Steel Animal Guard - Solid	40161821	
	Aluminum Animal Guard	40162120	
24"	Seal Tites	40162123	
	Steel Animal Guard - Solid	40162121	
	Aluminum Animal Guard	40162420	
30"	Seal Tites	40162423	
	Steel Animal Guard - Solid	40162421	
	Aluminum Animal Guard	40163020	N
	Seal Tites	40163023	N



4" Plastic Animal Guard



10" Steel Animal Guard



12" Aluminum Animal Guard

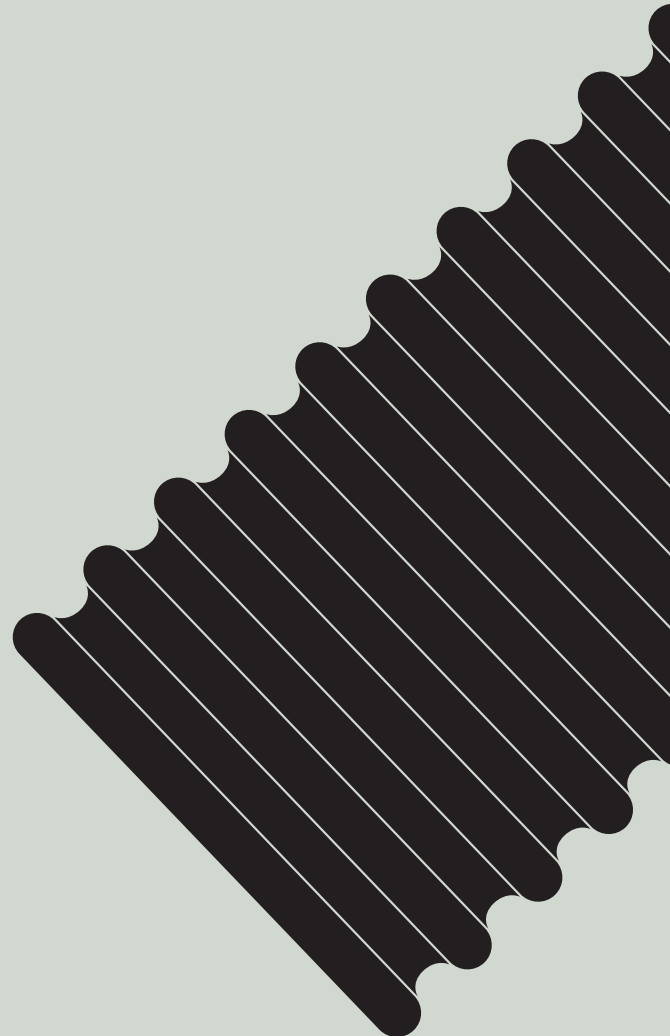


4" Steel Finger Animal Guard



8" Seal Tite

Size	Description	Item #	Stock
Surface Inlet Structures			
6x1	Surface Inlet	10060622	
6x5/16	Surface Inlet	10060623	
6	Black Solid Surface Inlet	10060624	
6	Surface Inlet Tee	10060625	
6	Hickenbottom Orifice	10060626	
8x1	Surface Inlet	10060821	
8x5/16	Surface Inlet	10060822	
8	Surface Inlet Tee	10060823	
8	Hickenbottom Orifice	10060824	
10x1	Surface Inlet	10061021	
10x5/16	Surface Inlet	10061022	
10	Surface Inlet Tee	10061023	
12x1	Surface Inlet	10060221	
12x5/16	Surface Inlet	10061222	
12	Surface Inlet Tee	10061223	
Round Plastic Grates			
4	Round Plastic Grate	40060400	
6	Round Plastic Grate	40060600	
8	Round Plastic Grate	40060800	
12	Round Plastic Grate	40061245	
15	Round Plastic Grate	40061501	
Accessories			
4" x 250'	Orange Solid Distribution Box	10030462	
	Bull Run Valve	40061235	
	Bull Run Valve	10069999	
15 1/2x11x11	Tuf-Tites	10061512	
	Tile Hole Saw	40061240	
	Tile Tape	40061234	
	Ball of Twine	40061000	
4'	Tile Probe	40061238	
5'	Tile Probe	40061238	
6'	Tile Probe	40061250	
	Tile Probe Tip	40061239	



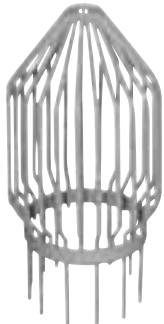
Tuf-Tite



Bull Run Valve



Distribution Box



8" Bar Guard Intake



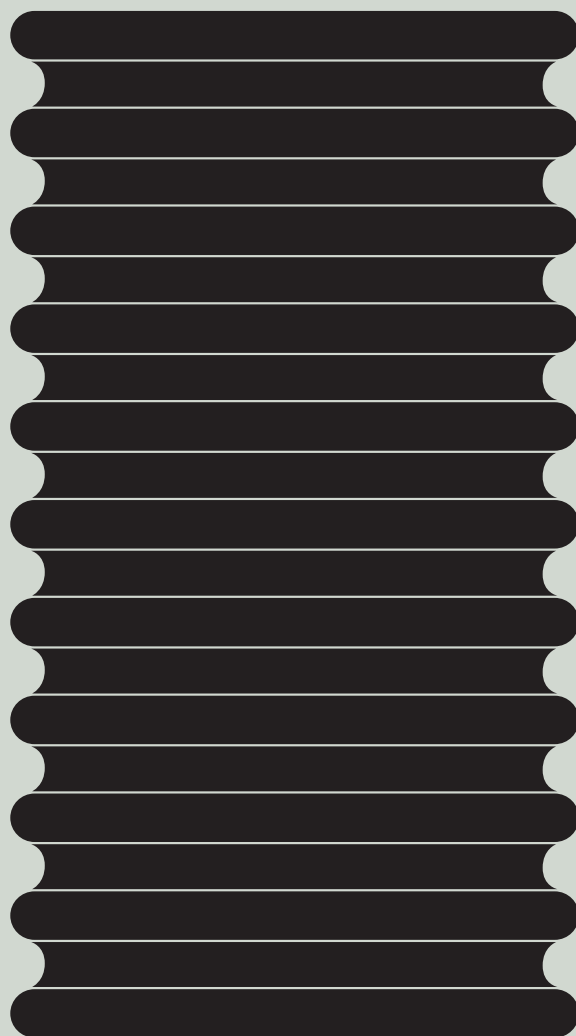
15" & 12" Round Plastic Grate



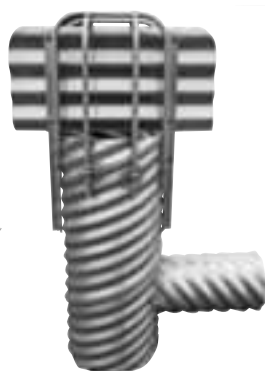
Surface Inlet

RIVETED CORRUGATED, GALVANIZED AND ALUMINIZED METAL PIPE

Riveted corrugated metal pipe is available in 2' increments of 18 gauge through 8 gauge annular riveted styles. It is typically used for culverts, bridge work, conduits, and storm sewers. Ideal for limited headroom conditions, arched pipe is also available. 6" spiral pipe is offered in 16 and 18 gauge.



12" x 7" 16 ga. Band



Custom Made Structure



36" x 20' 16 ga.

71" x 47" x 24' Pipe Arch

SAFETY SLOPE, END SECTIONS, & TAPERED SLEEVES

Many new federal regulations require end sections to have low slopes and safety bars. Haviland safety slope end sections, used with corrugated metal pipe, meet or exceed these specifications.

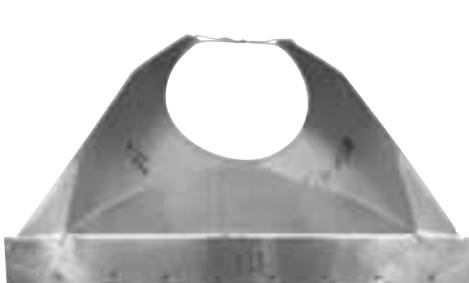
Galvanized metal end sections can be used in conjunction with plastic or metal pipe. Our expert design typically results in easier installation and reduced maintenance costs. Please note when ordering: end sections require longer straps when installed with plastic pipe.

Tapered sleeves allow end sections to be used with concrete pipe. Fabricated from high quality galvanized metal, these items are very durable.

Size	Description	Item #	Stock
Tapered Sleeve			
15	Tapered Sleeve	20131501	
18	Tapered Sleeve	20131801	
24	Tapered Sleeve	20132401	

Size	Description	Item #	Stock
Safety Slope			
15	4:1 Safety Slope End Section	20131515	
18	4:1 Safety Slope End Section	20131815	
21	4:1 Safety Slope End Section	20132116	N
24	4:1 Safety Slope End Section	20132415	
30	4:1 Safety Slope End Section	20133015	N
36	4:1 Safety Slope End Section	20133615	N
15	6:1 Safety Slope End Section	20131512	
18	6:1 Safety Slope End Section	20131812	
21	6:1 Safety Slope End Section	20132118	N
24	6:1 Safety Slope End Section	20132412	
30	6:1 Safety Slope End Section	20133017	N
36	6:1 Safety Slope End Section	20133617	N
15	Safety Slope End Section W/Bar	20131514	
18	Safety Slope End Section W/Bar	20131814	
24	Safety Slope End Section W/Bar	20132414	

Size	Description	Item #	Stock
End Sections			
6	End Section 16 GA	20130600	
8	End Section 16 GA	20130800	
10	End Section 16 GA	20131000	
12	End Section 16 GA	20131210	
15	End Section 16 GA	20131510	
18	End Section 16 GA	20131810	
21	End Section 16 GA	20132110	
24	End Section 16 GA	20132410	
30	End Section 14 GA	20133010	
36	End Section 14 GA	20133610	
17x13	End Section 16 GA	20131713	
21x15	End Section 16 GA	20132115	
24x18	End Section 16 GA	20132418	
28x20	End Section 16 GA	20132820	
35x24	End Section 14 GA	20133524	



18" End Section 16 ga.



18" 6:1 Safety Slope End Section



18" Tapered Sleeve



QUALITY ASSURANCE

Quality at Haviland Drainage Products begins long before pipe is produced. We carefully test incoming resins to ensure the utmost quality. Each step of the manufacturing process is carefully monitored, resulting in high caliber products. Our need of quality results from our desire to serve our customers.

DIAMETER

Inside Diameter		Outside Diameter	
Inches	Millimeters	Inches	Millimeters
2	50	2.4375	61
3	75	3.5	88
4	100	4.6875	117
5	125	5.6875	142
6	150	6.875	229
8	200	9.5	238
10	250	11.75	294
12	300	14.5	361
15	375	17.5	456
18	450	21.5	541
24	600	28	702
30	750	35	887
36	900	42	1046
42	1050	47	1212
48	1200	55	1375

RESIN CELL CLASSIFICATIONS

ASTM SPECIFICATION D3350 POLYETHYLENE RESINS

Density	3
Melt Index	3
Flexural Modulus	5
Tensile Strength	4
ESCR	0
HDB	0
UV Stabilizer Code	C

APPLICABLE STANDARDS

ASTM D 3350	Standard Specification for Polyethylene Plastic Pipe & Fitting Material
ASTM F 405	Standard Specification for Corrugated Polyethylene Pipe & Fittings
ASTM F 477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F 667	Standard Specification for Large Diameter Corrugated Polyethylene Pipe & Fittings
ASTM F 810	Standard Specification for Smoothwall Polyethylene Pipe for Use in Drainage and Waste Disposal Absorption Fields
AASHTO M-252	Standard Specification for Corrugated Polyethylene Drainage Pipe, 3" thru 10" diameter
AASHTO M-294	Standard Specification for Corrugated Polyethylene Pipe, 12" thru 48" diameter

All materials must be installed in accordance with ASTM and AASHTO standards.

DELIVERY



To provide customers with prompt deliveries, Haviland Drainage Products keeps hundreds of items in inventory. We have a large network of outside carriers and maintain our own fleet of trucks,

many of which are customized for greater unloading ease. Whether it is sticks, pallets, small rolls, jumbo rolls, or a combination of each, endless effort is given to ensure customer satisfaction.

MULTIPLIERS FOR % OF TRUCKLOADS

3 x 100	0.20
3 x 250	0.70
4 x 10	0.50
4 x 100	0.50
4 x 150	0.70
4 x 250	1.10
5 x 150	1.10
6 x 100	1.10
8 x 20	0.34
10 x 20	0.60
12 x 20	0.86
15 x 20	1.25
18 x 20	1.95
24 x 20	3.70
30 x 20	6.25
36 x 20	8.33
42 x 20	11.11
48 x 20	12.5

8" thru 36" can be telescoped
42" can be telescoped into 48"