



Product Catalog



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Dedicated to Quality, Service, and Reliability

At Haviland Drainage Products, our commitment to excellence begins with our people. From our knowledgeable sales team to our friendly order entry and shipping staff, every employee is dedicated to providing exceptional service and support to our customers.

Our professional team is always accessible—before and after the sale—to provide product information, answer questions, and ensure your project runs smoothly.

- **Extensive Inventory:** We maintain a large selection of drainage products, ready to meet your project needs.
- **Reliable Fleet & Delivery:** With our own fleet of trucks and trusted carriers, prompt delivery is a priority.
- **Quality You Can Trust:** Our manufacturing capabilities, combined with rigorous in-house quality control, ensure that every product meets the highest standards.

With Haviland Drainage Products, you receive not only superior materials, but also the dedicated service and reliability your project deserves.

Our Commitment to You

At Haviland Drainage Products, our goal is simple: to deliver excellent products and superior service at a competitive price.

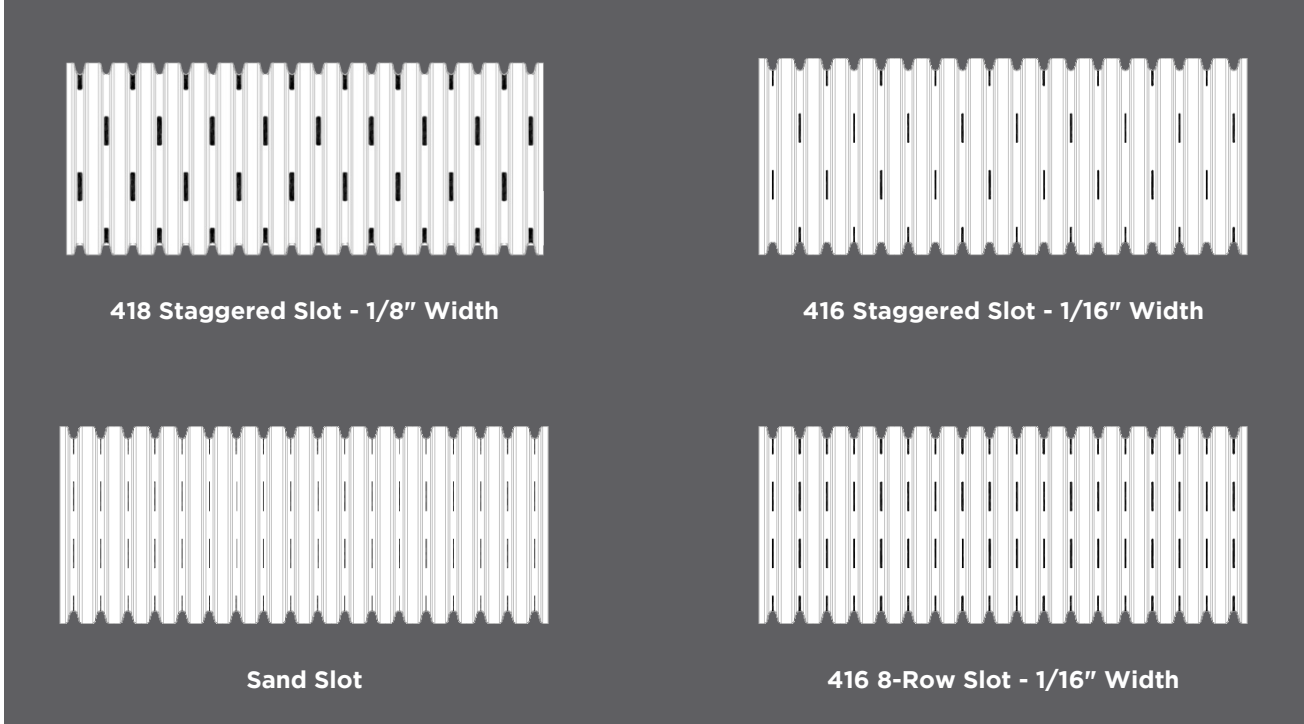
This catalog was created to give you a clear, convenient guide to our wide range of products and their applications. Whether you’re looking for detailed specifications or help selecting the right solution for your project, our team is here to assist.

For personalized service, reach out to our customer service department or connect with your local Haviland sales representative—we’re always ready to help.





Agricultural Perforation Patterns



Designed for the Demands of Agriculture

Located in the heart of farm country, Haviland Drainage Products understands the high standards and tough conditions of the agricultural market. Our wide range of perforation options ensures maximum drainage performance in any soil type—without adding extra costs to your project.

We offer both Black and Co-Extruded tubing. Our Co-Extruded tubing features a durable white exterior that reflects sunlight, keeping the pipe cooler and stronger during installation. For projects that demand even more durability, we provide Extra Heavy-Duty tubing in 4” thru 10” diameters, available in convenient jumbo coils.

Heavy Duty Agricultural Pipe

Size	Length (ft)	Description
2"	100	Perf
	100	Solid
	500	Perf
	500	Sand
	500	Solid
	5200	Perf
	5200	Perf
3"	100	Perf
	100	Solid
	250	Perf
	250	Solid
	250	Sand
	250	Muck
	5600	Solid
	5600	Perf
	5600	Solid
	5600	Sand
	5600	Co-Ex Perf
	5600	Co-Ex Sand
	5600	Co-Ex Sand
	5600	Co-Ex Sand
4"	100	Perf
	100	Solid
	100	Sand
	100	Co-Ex Staggered
	100	Co-Ex SLR Heavy
	250	Co-Ex Perf 8-Row
	250	Co-Ex 418
	250	Co-Ex Sand
	250	Co-Ex Solid
	250	Co-Ex Staggered
	250	Co-Ex SLR Heavy
	250	Perf
	250	Sand
	250	Solid
	3250	Co-Ex Perf 8-Row
	3250	Co-Ex 418
	3250	Co-Ex 418 Extra Heavy
	3250	Co-Ex Sand
	3250	Co-Ex Sand Extra Heavy
	3250	Co-Ex Staggered
	3250	Co-Ex Staggered Extra Heavy
	3250	Co- Ex SLR Heavy
	3250	Staggered
	3250	Staggered Extra Heavy
	3250	Sand
	3250	Sand Extra Heavy
	3250	Muck
	3250	Solid

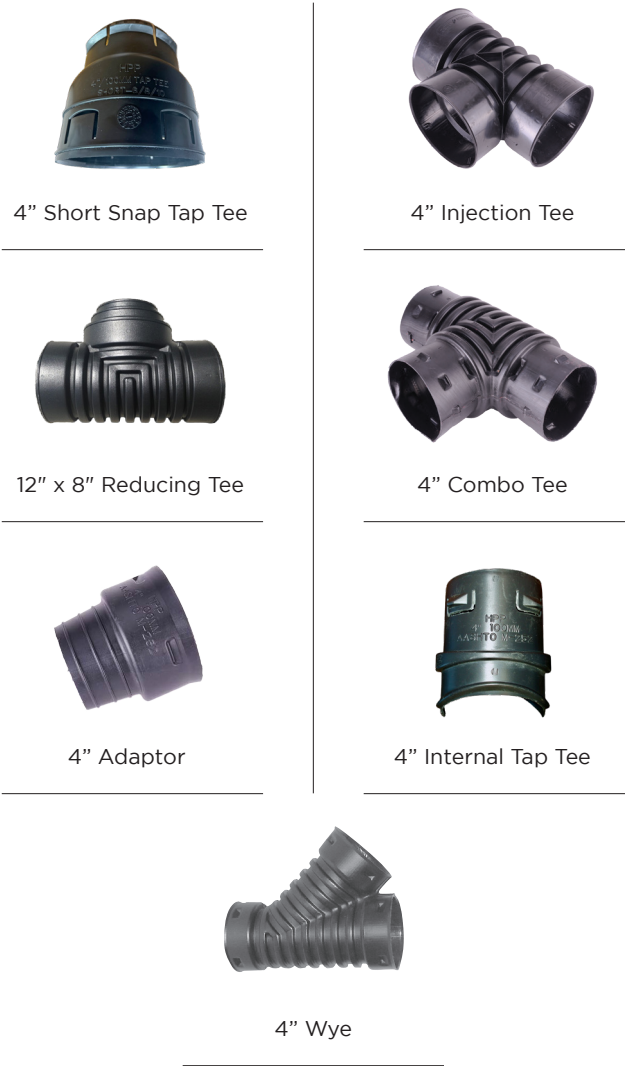
Size	Length (ft)	Description
5"	150	Perf
	150	Sand
	150	Solid
	2150	Perf
	2150	Sand
	2150	Muck
	2150	Solid
6"	20	Perf
	20	Solid
	100	Perf
	100	Perf Extra Heavy
	100	Sand
	100	Solid
	100	Solid Extra Heavy
	1600	Perf
	1600	Co-Ex Perf
	1600	Co-Ex Perf Extra Heavy
	1600	Sand
	1600	Co-Ex Sand Extra Heavy
	1600	Co-Ex Sand Extra Heavy
	1600	Solid
	1600	Solid Co-Ex
8"	20	Perf
	20	Sand
	20	Solid
	110	Perf
	110	Solid
	620	Perf
	620	Sand
	620	Solid
	875	Perf
	875	Co-Ex Perf Extra Heavy
	875	Sand
	875	Co-Ex Sand Extra Heavy
	875	Solid
	875	Co-Ex Solid Extra Heavy
10"	20	Perf
	20	Sand
	20	Solid
	580	Perf
	580	Perf Extra Heavy
	580	Sand
	580	Sand Extra Heavy
	580	Solid
	580	Solid Extra Heavy
	580	Solid Extra Heavy
12"	20	Perf
	20	Sand
	20	Solid
	330	Perf
	330	Sand
	330	Solid
	330	Solid



Corrugated Heavy Duty Fittings

Tees and Wyes

Size	Item Description	#/Bag
Tees		
2"	Tee	10
3"	Tee	25
	Short Tap Tee	50
	4" Combo Tee (Internal 4"/External 3")	25
4"	Tee (Injection Molded)	25
	Short Snap Tap Tee	50
	Long Tap Tee	50
	Internal Tap Tee	50
	Internal Tee	10
	4" Combo Tee (Internal 4"/External 3")	25
	5" x 4" Reducing Tee	10
6" x 6" x 5" x 4"	Reducing Tee	5
6"	Blind Tee	5
6"	Double Tee	5
8" x 8" x 6" x 5" x 4"	Reducing Tee	5
8"	Reducing Blind Tee	5
10" x 10" x 8" x 6"	Reducing Tee	3
10"	Reducing Blind Tee	3
12" x 12" x 10" x 8"	Reducing Tee	3
12"	Reducing Blind Tee	3
15" x 15" x 12" x 10"	Reducing Tee	1
15"	Reducing Blind Tee	1
Wyes		
3"	Wye	25
4"	Wye	10
5"	Reducing Wye	5
6"	Reducing Wye	5
8"	Wye	1



Corrugated Heavy Duty Fittings

Haviland's corrugated heavy-duty fittings are built to meet the highest quality standards, providing a reliable fit for your drainage systems. Designed to work seamlessly with our

single-wall pipe and tubing, they offer dependable solutions for a wide range of drainage applications.

Couplers and Down Spout Adaptors

Size	Item Description	#/Bag
Couplers		
2"	Internal Coupler	50
3"	Internal Coupler (Injection Molded)	50
	Split Coupler	50
4"	Internal Coupler (Injection Molded)	50
	Snap Coupler	50
	Split Coupler	50
5"	Internal Coupler	25
	Split Coupler	50
6"	Internal Coupler (Injection Molded)	25
	Snap Coupler	20
	Split Coupler	50
8"	Internal Coupler	10
	Snap Coupler (Without Tabs)	5
	Split Coupler	30
	Double Split Coupler	1
	MarMac Coupler	1
10"	Internal Coupler	5
	Snap Coupler (Without Tabs)	5
	Split Coupler	30
	Double Split Coupler	1
	MarMac Coupler	1
12"	Internal Coupler	5
	Split Coupler	20
	Double Split Coupler	1
15"	Split Coupler	5
	Double Split Coupler	1
	MarMac Coupler	1
18"	Split Coupler	5
	MarMac Coupler	1
24"	Split Coupler	5
	MarMac Coupler	1
30"	Split Coupler	3
	MarMac Coupler	1
36"	Split Coupler	1
	MarMac Coupler	1
42"	Split Coupler	1
	MarMac Coupler	1
48"	Split Coupler	1
	MarMac Coupler	1
60"	MarMac Coupler	1
Down Spout Adaptors		
2" x 3' x 3"	Down Spout Adaptor	50
2" x 3" x 4"	Down Spout Adaptor	50
3" x 4" x 4"	Down Spout Adaptor	50
4" x 6" x 6"	Down Spout Adaptor	25





Corrugated Heavy Duty Fittings

End Caps and End Plugs

Size	Item Description	#/Bag
End Caps		
2"	End Cap	100
3"	End Cap	50
4"	End Cap	50
5"	End Cap	50
6"	End Cap	20
8"	End Cap	10
10"	End Cap	10
12"	End Cap	5
15"	End Cap (Rigid)	1
	End Cap (Split)	1
18"	End Cap (Split)	1
	Green End Cap (Flat w/Screws)	1
24"	End Cap (Split)	1
	Green End Cap (Flat w/Screws)	1
30"	End Cap	1
36"	End Cap	1
42"	End Cap	1
48"	End Cap	1
60"	End Cap	1
End Plugs		
2"	End Plug	100
3"	302 End Plug	100
4"	402 End Plug	100
	Bullet End Plug	50
	HD Black End Plug (3" End Cap)	50
5"	502 End Plug	100
6"	602 End Plug	100



4" End Cap



15" End Cap



4" 402 End Plug

Elbows, Adaptors and Reducers

Size	Item Description	#/Bag
Elbows and Adaptors		
3"	Elbow	25
	Adaptors	25
4"	Elbow	25
	Clay to Plastic Adaptor	50
5"	Clay to Plastic Adaptor	50
6"	Elbow (6" Blind Tee)	5
	Clay to Plastic Adaptor	20
8"	Clay to Plastic Adaptor	10
10"	Clay to Plastic Adaptor	1
12"	Clay to Plastic Adaptor	1
15"	Clay to Plastic Adaptor	1
18"	Clay to Plastic Adaptor	1
24"	Clay to Plastic Adaptor	1
Reducers		
4" x 3"	Reducer	25
5" x 4"	Reducer	10
6" x 5" x 4"	Reducer	10
8" x 6"	Reducer	5
10" x 8"	Reducer	5
12" x 10"	Reducer	5
15" X 12"	Reducer	5



Heavy Duty Pipe and Tubing

Size	Length (ft)	Description
2"	100	Perf
	100	Solid
	500	Perf
	500	Sand
	500	Solid
3"	10	Perf
	10	Perf w/Coupler 10/Bundle
	10	Solid
	100	Perf
	100	Solid
	250	Perf
	250	Sand
	250	Muck
	250	Solid
	5600	Perf
	5600	Sand
4"	10	Perf w/Bell 10/bundle
	10	Solid w/Bell 10/bundle
	100	Perf
	100	Solid
	250	Perf
	250	Sand
	250	Solid
	3250	Staggered
	3250	Staggered Extra Heavy
	3250	Sand
	3250	Sand Extra Heavy
	3250	Solid
5"	150	Perf
	150	Sand
	150	Solid
	2150	Perf
	2150	Perf Extra Heavy
	2150	Sand
	2150	Leach
	2150	Solid
6"	20	Perf
	20	Solid
	100	Perf
	100	Sand
	100	Solid
	1600	Perf
	1600	Co-Ex Perf Extra Heavy
	1600	Sand
	1600	Co-Ex Sand Extra Heavy
	1600	Solid

Haviland's heavy-duty pipe and tubing deliver the strength, flexibility, and durability needed to handle most job requirements. Manufactured from high-density polyethylene, our products meet or exceed ASTM F 667 standards, ensuring long-lasting performance in the field. Tubing and pipe are available in diameters from 2" to 24", offered in the lengths listed below.

Size	Length (ft)	Description
8"	20	Perf
	20	Sand
	20	Solid
	110	Perf
	110	Solid
	620	Perf
	620	Sand
	620	Solid
	875	Perf
	875	Co-Ex Perf Extra Heavy
	875	Sand
	875	Co-Ex Sand Extra Heavy
	875	Solid
	250	Solid
	5600	Perf
	5600	Sand
10"	20	Perf
	20	Sand
	20	Solid
	580	Perf
	580	Perf Extra Heavy
	580	Sand
	580	Sand Extra Heavy
	580	Solid
	580	Solid Extra Heavy
12"	20	Perf
	20	Sand
	20	Solid
	330	Perf
	330	Sand
	330	Solid
15"	20	Perf
	20	Solid



SmoothFLEX™ Dual-Wall Pipe

Haviland’s flexible dual-wall pipe, SmoothFLEX™, is transforming the way agricultural mains are installed. Designed for efficiency and safety, SmoothFLEX makes trenchless installation faster, easier, and more cost-effective—without compromising strength or flow.

Why Choose SmoothFLEX?

- Installs in half the time of traditional SmoothFLOW sticks
- Flexible design eliminates the need for extra labor, trench boxes, or heavy equipment
- Smooth interior liner delivers Manning’s N-value comparable to SmoothFLOW sticks
- Crush strength matches that of rigid dual-wall pipe
- Enhances jobsite safety through reduced handling and faster installation
- Ideal for draining fields with high water tables
- Available in perforated, sand slot, and solid wall options



SmoothFLEX Jumbo

SmoothFLEX Installation Recommendations

Installation Area	Recommendation
Getting Started	Use a strap or attach corrugated tile to help guide the pipe through the boot.
Rounded Trench Bottom	Ensure the trench has a rounded bottom up to the spring-line to prevent stress and extend pipe life. Refer to ASTM F-449 for more details.
Boot Width	Use a boot at least 3" larger than the pipe's O.D. to reduce friction during installation.
Couplers	Use double split couplers secured with tile tape for added strength as the joint moves through the boot.
Bend Radius	Avoid tight bends. Maintain wide curves to reduce friction and prevent damage to the pipe.

Size	Length (ft) (Jumbo)	Perf	Sand	Solid
6"	1540'	Y	Y	Y
8"	725'	Y	Y	Y
10"	440'	Y	Y	Y
12"	380'	Y	Y	Y
15"	198'	Y	Y	Y

SmoothPro™ High Performance Polypropylene Pipe

Haviland’s SmoothPRO™ HP pipe is a high-performance, dual-wall polypropylene solution built for strength, durability, and long-term reliability. Designed with increased stiffness and excellent chemical resistance, SmoothPRO HP is ideal for projects requiring superior structural performance. Its watertight bell and spigot joints meet or exceed ASTM D3212,

delivering secure, leak-resistant connections. Available in diameters of 12 inches and larger, SmoothPRO HP meets the rigorous standards of both AASHTO M330 and ASTM F2881, ensuring compliance with industry specifications for demanding drainage applications.

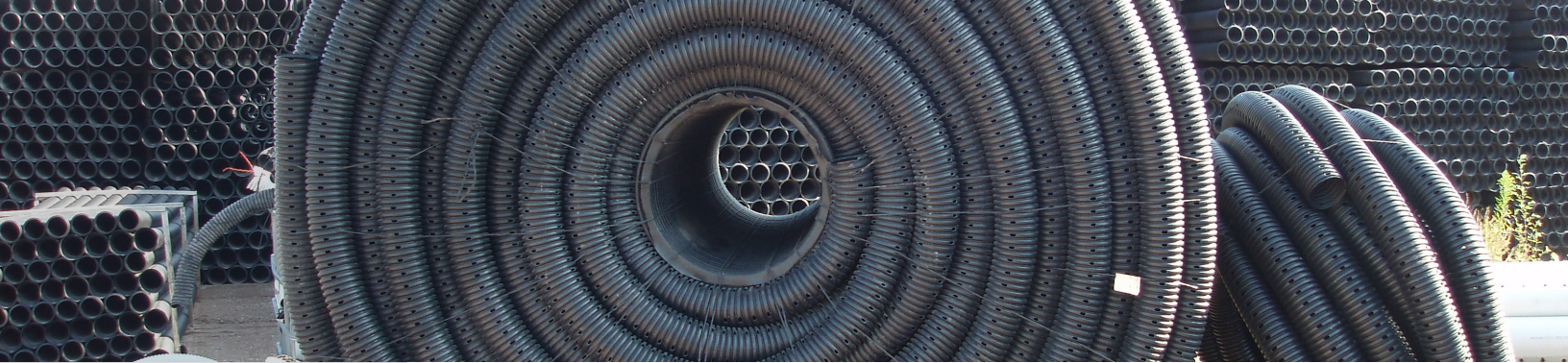
SmoothPRO HP Highlights

Feature	Benefit
Improved beam stiffness	Enhances installation surety through inconsistent site conditions
Polypropylene resin	Provides optimal performance and service life
Increased pipe stiffness	Prevents handling and installation damage
Time-tested dual-wall design	Contributes to proven, long-term performance
Lightweight construction	Enables safer, more efficient installation
Chemical-resistant material	Resists the effects of chemicals, corrosion, and abrasion

Size	Length (ft)
12"	20'
15"	20'
18"	20'
24"	20'
30"	20'
36"	20'
42"	20'
48"	20'
60"	20'



SmoothPro HP Pipe



Highway Pipe

Haviland’s highway pipe is designed for reliable performance in roadway and infrastructure drainage applications. Manufactured to meet AASHTO M 252 and M 294 standards, our pipe offers the strength, durability, and quality required for highway projects.

Size	Length (ft)	Description
4"	250	Perf
	250	Sock *
	250	Solid
	3250	Perf
	3250	Solid
6"	100	Perf
	100	Sock *
	100	Solid
	1600	Perf
	1600	Solid
8"	620	Perf
	620	Solid
	875	Perf
	875	Solid
10"	20	Perf
	20	Solid
	580	Perf
	580	Solid
12"	20	Perf
	20	Solid
	330	Perf
	330	Solid
15"	20	Perf
	20	Solid

* MDOT approved

For pricing, contact us with your job size, location, and the applicable DOT specification numbers. Be sure to review your local DOT requirements before placing an order to ensure proper compliance.



4" x 3250' Perf



4" x 250' Perf

Muck and Sock Tubing

For leach field applications, Haviland provides tubing with a 7.7 in²/ft inlet area, featuring four rows of staggered oblong holes approximately 0.27" x 0.62" per corrugation. This increased inlet area allows for greater drainage capacity compared to conventional slots. Before installation, it is important to understand local soil conditions and review health department regulations to confirm permissible use.

Tubing with 1/2" diameter perforations is also available for specialized applications.

Sock tubing combines our heavy-duty pipe with a durable polyester filter wrap. Designed for sandy soils, the filter sock ranges from 2.5 to 3.9 oz/yd². Sock tubing is most often purchased pre-wrapped, though filter sock material is also available separately.

Size	Length (ft)	Description
3"	100	Perf w/Sock+
	250	Perf w/Sock+
	250	Muck
	250	Muck w/Sock
4"	10	Muck w/Bell 10/bundle
	100	Perf w/Sock
	100	Muck
	100	Sock Material Only
	250	Muck
	250	Muck w/Sock+
	3250	Muck*
	3250	Muck w/Sock**
	3250	Perf w/Sock**
	3250	Sand w/Sock**
	3250	Co-Ex 418 w/Sock**
5"	150	Muck
	150	Muck w/Sock+
	150	Perf w/Sock
	2150	Muck
	2150	Muck w/Sock**
	2150	Perf w/Sock**
6"	100	Sock Material Only
	100	Muck+
	100	Muck w/Sock+
	100	Perf w/Sock+
	1600	Perf w/Sock**
	1600	Muck**
	1600	Muck w/Sock**
8"	20	Perf w/Sock+
	875	Perf w/Sock+
10"	20	Perf w/Sock+
	580	Perf w/Sock**
12"	20	Perf w/Sock+
	330	Perf w/ Sock**
15"	20	Perf w/Sock+

* Requires specialized handling equipment.

+ Special Order Item contact your Haviland Sales Representative for more information.



8" x 20' Sock



4" x 250' Leach



SmoothFLOW™ Pipe

SmoothFLOW pipe is a corrugated polyethylene pipe with a smooth interior, providing a lightweight yet durable solution for storm sewers, culverts, and other applications where high strength and maximum flow are required.

Size	Length (ft)	Description
4"	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	1520	Pallet/SF Perf w/ Bell
	1520	Pallet/SF Solid w/ Bell
6"	1520	Pallet/SF Solid w/ Bell F-477
	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	780	Pallet/SF Perf w/ Bell
8"	780	Pallet/SF Solid w/ Bell
	780	Pallet/SF Solid w/ Bell F-477
	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell
10"	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	20	SF Solid w/ Bell WT

Haviland SmoothFLOW pipe is available with belled ends from 4" to 60". It meets ASTM 2648 and AASHTO M-252 or M-294 specifications. For proper installation, a SmoothFLOW pipe guide is available on our website. As shown below, 4" through 6" pipe is also available for order in pallets.

Size	Length (ft)	Description
12"	9.667	SF Perf w/ Bell
	9.667	SF Solid w/ Bell F-477
	9.667	SF Perf Sock w/ Bell
	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
15"	10	SF Solid w/ Bell F-477
	10	SF Perf w/ Bell
	10	SF Perf Sock w/ Bell
	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
30"	14.4	SF Solid w/ Bell F-477
	14.4	SF Perf w/ Bell
	14.4	SF Perf Sock w/ Bell
	20	SF Perf w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	20	SF Solid w/ Bell WT
36"	14.5	SF Solid w/ Bell F-477
	14.5	SF Perf w/ Bell
	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	20	SF Solid w/ Bell WT

SmoothFLOW™ Pipe

Size	Length (ft)	Description
42"	14.5	SF Perf w/ Bell
	14.5	SF Solid w/ Bell F-477
	20	SF Perf w/ Bell
	20	SF Perf Sock w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
	20	SF Solid w/ Bell WT
48"	14.5	SF Perf w/ Bell
	14.5	SF Solid w/ Bell F-477
	20	SF Perf w/ Bell
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT
60"	14.5	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell F-477
	20	SF Solid w/ Bell WT



6" x 20' SF Solid w/Bell





SmoothFLOW™ Fittings

Elbows

Size	Description	PE Stock	BE Stock
22 1/2° Elbows			
4"	SF 22 1/2° Elbow		
6"	SF 22 1/2° Elbow		
8"	SF 22 1/2° Elbow		
10"	SF 22 1/2° Elbow		
12"	SF 22 1/2° Elbow		
15"	SF 22 1/2° Elbow		
18"	SF 22 1/2° Elbow		
24"	SF 22 1/2° Elbow		
30"	SF 22 1/2° Elbow		
36"	SF 22 1/2° Elbow		
42"	SF 22 1/2° Elbow	N	
48"	SF 22 1/2° Elbow	N	
60"	SF 22 1/2° Elbow	N	
45° Elbows			
4"	SF 45° Elbow		
6"	SF 45° Elbow		
8"	SF 45° Elbow		
10"	SF 45° Elbow		
12"	SF 45° Elbow		
15"	SF 45° Elbow		
18"	SF 45° Elbow		
24"	SF 45° Elbow		
30"	SF 45° Elbow		
36"	SF 45° Elbow		
42"	SF 45° Elbow	N	
48"	SF 45° Elbow	N	
60"	SF 45° Elbow	N	



SF 22 1/2° Elbows



SF 45° Elbows



SF 90° Elbows w/Bells

Elbows and End Caps

Size	Description	PE Stock	BE Stock
90° Elbows			
4"	SF 90° Elbow		
6"	SF 90° Elbow		
8"	SF 90° Elbow		
10"	SF 90° Elbow		
12"	SF 90° Elbow		
15"	SF 90° Elbow		
18"	SF 90° Elbow		
24"	SF 90° Elbow		
30"	SF 90° Elbow		
36"	SF 90° Elbow		
42"	SF 90° Elbow	N	
48"	SF 90° Elbow	N	
60"	SF 90° Elbow	N	
End Caps			
30"	SF End Cap		
36"	SF End Cap		
42"	SF End Cap	N	
48"	SF End Cap	N	
60"	SF End Cap	N	

Note: See page 5 for a full listing of all couplers.
4" – 30" Smooth Flow Fittings available with Plain Ends (PE) or Bell Ends (BE). 36" – 60" Smooth Flow Fittings are only available with Plain Ends (PE).

SmoothFLOW™ Fittings

SmoothFLOW fittings are fabricated from SmoothFLOW pipe to ensure consistent flow characteristics throughout the system. Available with plain or belled ends, these fittings can also be

custom-made to meet unique project requirements. Contact your Haviland sales representative for pricing and availability on custom-fabricated items.

Reducers

Size	Description	PE Stock	BE Stock
Reducers			
6" x 4"	SF Reducer		
8" x 4"	SF Reducer		
8" x 6"	SF Reducer		
10" x 4"	SF Reducer		
10" x 6"	SF Reducer		
10" x 8"	SF Reducer		
12" x 4"	SF Reducer		
12" x 6"	SF Reducer		
12" x 8"	SF Reducer		
12" x 10"	SF Reducer		
15" x 8"	SF Reducer		
15" x 10"	SF Reducer		
15" x 12"	SF Reducer		
18" X 4"	SF Reducer		
18" X 6"	SF Reducer		
18" x 8"	SF Reducer		
18" x 10"	SF Reducer		
18" x 12"	SF Reducer		
18" x 15"	SF Reducer		
24" X 4"	SF Reducer		
24" x 6"	SF Reducer		
24" x 8"	SF Reducer		
24" x 10"	SF Reducer		
24" x 12"	SF Reducer		
24" x 15"	SF Reducer		
24 " x 18"	SF Reducer		
30" X 6"	SF Reducer		
30" X 8"	SF Reducer		
30" x 10"	SF Reducer		
30" x 12"	SF Reducer		
30" x 15"	SF Reducer		
30" x 18"	SF Reducer		
30" x 24"	SF Reducer		
36" x 12"	SF Reducer		
36" x 15"	SF Reducer		
36" x 18"	SF Reducer		
36" x 24"	SF Reducer		
36" x 30"	SF Reducer		

Double Tees

Size	Description	PE Stock	BE Stock
Reducers			
42" x 12"	SF Reducer		N
42" x 15"	SF Reducer		N
42" x 18"	SF Reducer		N
42" x 24"	SF Reducer		N
42" x 30"	SF Reducer		N
42" x 36"	SF Reducer		N
48" x 12"	SF Reducer		N
48" x 15"	SF Reducer		N
48" x 18"	SF Reducer		N
48" x 24"	SF Reducer		N
48" x 30"	SF Reducer		N
48" x 36"	SF Reducer		N
48" x 42"	SF Reducer		N
60" X 24"	SF Reducer		N
60" X 30"	SF Reducer		N
60" X 36"	SF Reducer		N
60" X 42"	SF Reducer		N
60" X 48"	SF Reducer		N
Double Tees			
4"	SF Double Tee		
6"	SF Double Tee		
8"	SF Double Tee		
10"	SF Double Tee		
12"	SF Double Tee		
15"	SF Double Tee	N	N
18"	SF Double Tee	N	N
24"	SF Double Tee	N	N
30"	SF Double Tee	N	N
36"	SF Double Tee	N	N
42"	SF Double Tee	N	N
48"	SF Double Tee	N	N



SmoothFLOW™ Fittings

Reducing and Non-Reducing Tees

Size	Description	PE Stock	BE Stock
4" x 4"	SF Tee		
6" x 4"	SF Tee		
6" x 6"	SF Tee		
8" x 4"	SF Tee		
8" x 6"	SF Tee		
8" x 8"	SF Tee		
10" x 4"	SF Tee		
10" x 6"	SF Tee		
10" x 8"	SF Tee		
10" x 10"	SF Tee		
12" x 4"	SF Tee		
12" x 6"	SF Tee		
12" x 8"	SF Tee		
12" x 10"	SF Tee		
12" x 12"	SF Tee		
15" x 4"	SF Tee		
15" x 6"	SF Tee		
15" x 8"	SF Tee		
15" x 10"	SF Tee		
15" x 12"	SF Tee		
15" x 15"	SF Tee		
18" x 4"	SF Tee		
18" x 6"	SF Tee		
18" x 8"	SF Tee		
18" x 10"	SF Tee		
18" x 12"	SF Tee		
18" x 15"	SF Tee		
18" x 18"	SF Tee		
24" x 4"	SF Tee		
24" x 6"	SF Tee		
24" x 8"	SF Tee		
24" x 10"	SF Tee		
24" x 12"	SF Tee		
24" x 15"	SF Tee		
24" x 18"	SF Tee		
24" x 24"	SF Tee		
30" x 4"	SF Tee		N
30" x 6"	SF Tee		
30" x 8"	SF Tee		
30" x 10"	SF Tee		
30" x 12"	SF Tee		
30" x 15"	SF Tee		
30" x 18"	SF Tee		
30" x 24"	SF Tee		
30" x 30"	SF Tee		

Size	Description	PE Stock	BE Stock
36" x 4"	SF Tee		N/A
36" x 6"	SF Tee		N/A
36" x 8"	SF Tee		N/A
36" x 10"	SF Tee		N/A
36" x 12"	SF Tee		N/A
36" x 15"	SF Tee		N/A
36" x 18"	SF Tee		N/A
36" x 24"	SF Tee		N/A
36" x 30"	SF Tee		N/A
36" x 36"	SF Tee		N/A
42" x 6"	SF Tee		N/A
42" x 8"	SF Tee		N/A
42" x 10"	SF Tee		N/A
42" x 12"	SF Tee		N/A
42" x 15"	SF Tee		N/A
42" x 18"	SF Tee		N/A
42" x 24"	SF Tee		N/A
42" x 30"	SF Tee		N/A
42" x 36"	SF Tee		N/A
42" x 42"	SF Tee		N/A
48" x 6"	SF Tee	N	N/A
48" x 8"	SF Tee	N	N/A
48" x 10"	SF Tee	N	N/A
48" x 12"	SF Tee	N	N/A
48" x 15"	SF Tee	N	N/A
48" x 18"	SF Tee	N	N/A
48" x 24"	SF Tee	N	N/A
48" x 30"	SF Tee	N	N/A
48" x 36"	SF Tee	N	N/A
48" x 42"	SF Tee	N	N/A
48" x 48"	SF Tee	N	N/A
60" x 4"	SF Tee	N	N/A
60" x 6"	SF Tee	N	N/A
60" x 8"	SF Tee	N	N/A
60" x 10"	SF Tee	N	N/A
60" x 12"	SF Tee	N	N/A
60" x 15"	SF Tee	N	N/A
60" x 18"	SF Tee	N	N/A
60" x 24"	SF Tee	N	N/A
60" x 30"	SF Tee	N	N/A
60" x 36"	SF Tee	N	N/A
60" x 42"	SF Tee	N	N/A
60" x 48"	SF Tee	N	N/A

SmoothFLOW™ Fittings

Wyes

Size	Description	PE Stock	BE Stock
4" x 4"	SF Wye		
6" x 4"	SF Wye		
6" x 6"	SF Wye		
8" x 4"	SF Wye		
8" x 6"	SF Wye		
8" x 8"	SF Wye		
10" x 4"	SF Wye		
10" x 6"	SF Wye		
10" x 8"	SF Wye		
10" x 10"	SF Wye		
12" x 4"	SF Wye		N
12" x 6"	SF Wye		N
12" x 8"	SF Wye		
12" x 10"	SF Wye		N
12" x 12"	SF Wye		
15" x 4"	SF Wye	N	N
15" x 6"	SF Wye	N	N
15" x 8"	SF Wye		
15" x 10"	SF Wye		
15" x 12"	SF Wye		
15" x 15"	SF Wye		
18" x 4"	SF Wye	N	N
18" x 6"	SF Wye	N	N
18" x 8"	SF Wye		
18" x 10"	SF Wye		
18" x 12"	SF Wye		
18" x 15"	SF Wye		
18" x 18"	SF Wye		
24" x 4"	SF Wye	N	N
24" x 6"	SF Wye	N	N
24" x 8"	SF Wye		
24" x 10"	SF Wye		
24" x 12"	SF Wye		
24" x 15"	SF Wye		
24" x 18"	SF Wye		
24" x 24"	SF Wye		
30" x 4"	SF Wye	N	N
30" x 6"	SF Wye	N	N
30" x 8"	SF Wye	N	N
30" x 10"	SF Wye	N	N
30" x 12"	SF Wye	N	N
30" x 15"	SF Wye	N	N
30" x 18"	SF Wye	N	N
30" x 24"	SF Wye	N	N
30" x 30"	SF Wye		



SF Reducing Tee



SF Double Tee

SmoothFLOW fittings are offered in diameters from 4" to 60". Each size is available in standard configurations such as elbows, end caps, reducers, tees, and wyes. For job-specific or custom fittings, contact your Haviland sales representative for availability and pricing.

Size	Description	PE Stock	BE Stock
36" x 6"	SF Wye	N	N/A
36" x 8"	SF Wye	N	N/A
36" x 10"	SF Wye	N	N/A
36" x 12"	SF Wye	N	N/A
36" x 15"	SF Wye	N	N/A
36" x 18"	SF Wye	N	N/A
36" x 24"	SF Wye	N	N/A
36" x 30"	SF Wye	N	N/A
36" x 36"	SF Wye		N/A
42" x 42"	SF Wye	N	N/A
48" x 42"	SF Wye	N	N/A
60" x 4"	SF Wye	N	N/A
60" x 6"	SF Wye	N	N/A
60" x 8"	SF Wye	N	N/A
60" x 10"	SF Wye	N	N/A
60" x 12"	SF Wye	N	N/A
60" x 15"	SF Wye	N	N/A
60" x 18"	SF Wye	N	N/A
60" x 24"	SF Wye	N	N/A
60" x 30"	SF Wye	N	N/A
60" x 36"	SF Wye	N	N/A
60" x 42"	SF Wye	N	N/A
60" x 48"	SF Wye	N	N/A



SF Wye

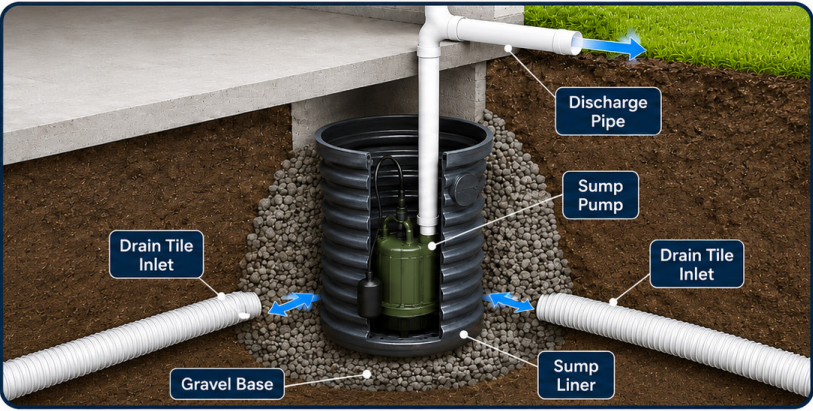


SF Wye w/Bells



SUMP LINER

Durable • Corrosion-Resistant



Soil Separators, Sumps and Sump Accessories

For leach field systems where preventing soil infiltration is critical, Haviland offers durable, non-biodegradable soil separators. These separators are available in multiple sizes and lengths to meet a variety of installation needs.

Soil Separators

Width (in)	Length (ft)	Color	Oz/yd2
36"	300	White	0.50
36"	1500	White	0.50

Specification	Test Method	Soil Separator
Fiber		Polypropylene
Weight (Ox/yd2) 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



Soil Separators



Heavy Duty Locking Lid



18" x 30" Sump



18" x 24" Sump

Sump & Sump Accessories

Size	Description	Qty. / Bag
18" x 24"	Sump	1
18" x 30"	Sump	1
18"	Solid Locking Sump Lid	5
18"	HD Locking Sump Lid	5
18"	HD Non-Locking Sump Lid	5
18"	Radon Sump Lid	1

Haviland sump liners are molded from durable polyethylene, making them lightweight, corrosion-proof, and easy to install. Pre-formed collars and flat molded panels allow for quick, convenient pipe connections. Our twist-on sump lids require no bolts or fasteners and are available in both solid and slotted styles.

Tri-Wall Pipe

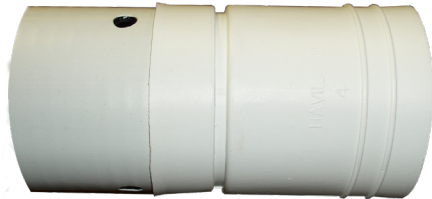
Tri-Wall pipe is a three-layer, high-density polyethylene sewer and drain pipe designed for superior performance. Its welded bell ensures a consistent, secure fit, while the triple-layer construction provides greater impact resistance, added strength, and easier handling compared to conventional pipe.

Featuring a white exterior and black interior, Tri-Wall pipe meets or exceeds ASTM F 810 when installed according to ASTM F 481. It is available in 3", 4", and 6" diameters, in 10' lengths bundled on pallets for efficient transport—up to 30 pallets per truckload on 53' trailers.

Size	Length (ft)	Description	Hole Diameter
3"	1380	Tri-Wall Solid	1/2"
	1380	Tri-Wall 2 Hole	
4"	900	Tri-Wall Solid	1/2"
	900	Tri-Wall 2 Hole	
	900	Tri-Wall 4-6-8	5/8"
	900	Tri-Wall 4-8-12	
6"	390	Tri-Wall Solid	1/2"
	390	Tri-Wall 2 Hole	
 2-Hole  4-6-8  4-8-12			



4" x 900' Solid



4" Tri-Wall Bell End



Accessories

Haviland offers a full range of drainage accessories, from bar guards to animal guards, to help protect and optimize your system. For guidance on selecting the right accessories for your application, contact your Haviland sales representative.

Size	Description
Animal Guards	
4"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
6"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
8"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
10"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
12"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
15"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
18"	Alum inum Animal Guard Bar Guard Intake Steel Finger Animal Guard
24"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard
30"	Aluminum Animal Guard Bar Guard Intake Steel Finger Animal Guard

Size	Description
Round Plastic Grates	
4"	Round Plastic Grate
6"	Round Plastic Grate
12"	Round Plastic Grate
15"	Round Plastic Grate
18"	Round Plastic Grate
24"	Round Plastic Grate



12 Round Plastic Grate



4" Finger Animal Guard



8" Bar Guard Intake



12" Aluminum Animal Guard

Accessories

Size	Description
Surface Inlet Structures	
6 x 1	Surface Inlet
6 x 5/16	Surface Inlet
6	Surface Inlet Tee
8 x 1	Surface Inlet
8 x 5/16	Surface Inlet
8	Surface Inlet Tee
10 x 1	Surface Inlet
10 x 5/16	Surface Inlet
10	Surface Inlet Tee
12 x 1	Surface Inlet
12 x 5/16	Surface Inlet
12	Surface Inlet Tee
Accessories	
	Bull Run Valve w/Key
15 1/2 x 11 x 11	Tuf-Tites
	Tile Tape 24/box
	Flags
4'	Tile Probe
5'	Tile Probe
6'	Tile Probe
	Tile Probe Tip



Surface Inlet



Tuf-Tite





Riveted & Spiral Corrugated Metal Pipe

	Pipe Diameter	Weight Per Ft	Squashed/Arched Pipe
16 GA (.064")	6" Spiral	4.9#	
	8" Riveted	6.6#	
	10" Riveted	8.1#	
	12" Riveted	9.9#	
	15" Riveted	12.3#	17" X 13"
	18" Riveted	14.8#	21" X 15"
	21" Riveted	17.1#	24" X 18"
	24" Riveted	19.6#	28" X 20"
	27" Riveted	22.0#	32" X 22"
	30" Riveted	24.2#	35" X 24"
	36" Riveted	29.0#	42" X 29"
	42" Riveted	33.5#	49" X 33"
	48" Riveted	38.2#	57" X 38"
14 GA (.079")	8" Riveted	8.4#	
	10" Riveted	10.3#	
	12" Riveted	12.2#	
	15" Riveted	15.1#	17" X 13"
	18" Riveted	18.0#	21" X 15"
	21" Riveted	21.0#	24" X 18"
	24" Riveted	23.9#	28" X 20"
	30" Riveted	29.6#	35" X 24"
	36" Riveted	35.5#	42" X 29"
	42" Riveted	41.2#	49" X 33"
	48" Riveted	47.1#	57" X 38"
	54" Riveted	53.1#	64" X 43"

	Pipe Diameter	Weight Per Ft	Squashed/Arched Pipe
12 GA (.109")	12" Riveted	16.6#	
	15" Riveted	20.9#	17" X 13"
	18" Riveted	24.8#	21" X 15"
	21" Riveted	28.#	24" X 18"
	24" Riveted	33.0#	28" X 20"
	30" Riveted	40.7#	35" X 24"
	36" Riveted	48.3#	42" X 29"
	42" Riveted	56.6#	49" X 33"
	48" Riveted	62.5#	57" X 38"
	54" Riveted	73.5#	64" X 43"
	60" Riveted	79.1#	71" X 47"
10 GA (.138")	24" Riveted	41.5#	28" X 20"
	30" Riveted	51.0#	35" X 24"
	36" Riveted	61.1#	42" X 29"
	42" Riveted	70.9#	49" X 33"
	48" Riveted	82.5#	57" X 38"
	54" Riveted	91.7#	64" X 43"
	60" Riveted	103.0#	71" X 47"

Metal & Plastic End Sections

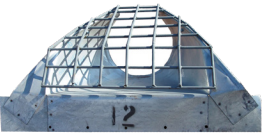
Many federal regulations require end sections with low slopes and safety bars. Haviland safety slope end sections, designed for use with corrugated metal pipe, meet or exceed these specifications.

Our galvanized metal end sections can be paired with either plastic or metal pipe. Their efficient design allows for easier installation and reduced maintenance costs. When installing

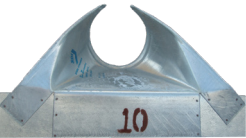
with plastic pipe, be sure to order longer straps to ensure proper fit.

We also offer durable tapered sleeves, fabricated from high-quality galvanized metal, which allow end sections to connect with concrete pipe. Contact your Haviland sales representative for available sizes and details.

Size	Description
Metal End Sections	
6"	End Section 16 GA
8"	End Section 16 GA
10"	End Section 16 GA
12"	End Section 16 GA
15"	End Section 16 GA
18"	End Section 16 GA
21"	End Section 16 GA
24"	End Section 16 GA
30"	End Section 14 GA
36"	End Section 14 GA
42"	End Section 14 GA
48"	End Section 14 GA
60"	End Section 14 GA
Plastic End Sections	
12" / 15"	Plastic End Section
18"	Plastic End Section
24"	Plastic End Section
30" / 36"	Plastic End Section



12" End Section
16 Gauge



10" End Section
16 Gauge



12"/15" Plastic
End Section



Storm Water Quality Unit

Product Numbers	Diameter		Length		Inlet Size		Outlet Size		Treated Flow Rate*		Sed. Vol.		Floatable Vol.		Sieve Size
	in	(mm)	ft	(m)	in	(mm)	in	(mm)	cfs	(1/s)	ft3	(m3)	ft3	(m3)	
SWQU 36X20-A	36	(900.00)	20	(6)	10	(250)	10	(250)	1.5	(43)	64	(2)	29	(1)	140
SWQU 36X40-A	36	(900.00)	40	(12)	10	(250)	10	(250)	3.1	(89)	135	(4)	62	(2)	140
SWQU 36X20-B	36	(900.00)	20	(6)	10	(250)	10	(250)	.075	(21)	64	(2)	29	(1)	200
SWQU36X4-B	36	(900.00)	40	(12)	10	(250)	10	(250)	1.5	(43)	135	(4)	62	(2)	200
SWQU 42X20-A	42	(1050.00)	20	(6)	12	(300)	12	(300)	1.7	(49)	86	(2)	40	(1)	140
SWQU 42X40-A	42	(1050.00)	40	(12)	12	(300)	12	(300)	3.7	(106)	182	(5)	84	(2)	140
SWQU 42X20-B	42	(1050.00)	20	(6)	12	(300)	12	(300)	0.8	(23)	86	(2)	40	(1)	200
SWQU 42X40-B	42	(1050.00)	40	(12)	12	(300)	12	(300)	1.8	(51)	182	(5)	84	(2)	200
SWQU 48X20-A	48	(1200.00)	20	(6)	12	(300)	12	(300)	2.3	(66)	121	(3)	60	(2)	140
SWQU 48X40-A	48	(1200.00)	40	(12)	12	(300)	12	(300)	4.8	(137)	255	(7)	128	(4)	140
SWQU 48X20-B	48	(1200.00)	20	(6)	12	(300)	12	(300)	1.1	(31)	121	(3)	60	(2)	200
SWQU 48X40-B	48	(1200.00)	40	(12)	12	(300)	12	(300)	2.4	(69)	255	(7)	128	(4)	200
SWQU 60X20-A	60	(1500.00)	20	(6)	15	(375)	15	(375)	2.9	(83)	390	(11)	88	(2)	140
SWQU 60X40-A	60	(1500.00)	20	(6)	15	(375)	15	(375)	6.2	(177)	186	(5)	186	(5)	140
SWQU 60X20-B	60	(1500.00)	20	(6)	15	(375)	15	(375)	1.4	(40)	390	(11)	88	(2)	200
SWQU 60X40-B	60	(1500.00)	40	(12)	15	(375)	15	(375)	3.1	(89)	390	(11)	186	(5)	200

Note: 140 Sieve is equal to a particle size of0.0042” (0. 106mm)
200 Sieve is equal to a particle size of0.0030” (0.075mm)

* Flow Rate subject to change. Please call for up to date information.

Detention and Retention Systems

Product Features

Subsurface detention and retention systems offer an efficient alternative to traditional stormwater ponds. While ponds occupy valuable land that can’t be used for other purposes and present issues such as stagnant water or safety concerns, subsurface systems free up the surface area for development while managing stormwater effectively.

Key Benefits of Subsurface Systems:

- Maximize use of developable land
- Reduce safety hazards and standing water concerns
- Support H20 and H25 loading capacities
- Cost-effective and customizable designs
- Easy to maintain and long-lasting

Haviland Drainage Products can assist you and your engineer in designing the ideal subsurface system to meet your project’s needs, with options available from 12” through 60” diameters.

Custom SmoothFLOW & Galvanized Metal Structure Fabrication

Haviland can fabricate custom structures to meet your stormwater drainage needs, from simple pond overflows to complex manifold systems.

Structures are available in:

- SmoothFLOW pipe from 4” to 60”

Contact your Haviland sales representative to discuss project requirements, pricing, and availability for custom-fabricated solutions.



Custom Made 24” SF Header





Technical Data Sheet

SmoothFLOW Pipe — Nominal Dimeter (I.D.)													
	4"	6"	8"	10"	12"	15"	18"	24"	30"	36"	42"	48"	60"
Pounds Per foot	0.49	0.94	1.54	2.29	3.53	5.15	7.00	11.19	16.10	24.72	34.84	46.31	68.91
Inside Diameter	4"	6"	8"	10"	12"	15"	18"	24"	30"	36"	42"	48"	60"
Outside Diameter of Corrugation	4.6"	6.8"	9.5"	11.75"	14.5"	17.5"	21.3"	27.9"	35.5"	41.8"	47.2"	53.5"	67.5"
Outside Diameter of Bell	5"	7.45"	10"	12.25"	15"	17"	21"	26.75"	34.95"	42"	46.5"	52.25"	66"
Outside Diameter of Spigot	4.6"	6.8"	9.5"	11.75"	13.4"	16.35"	19.9"	26.1"	34.37"	40.25"	45.4"	50.75"	64.4"
Inner Liner Thickness	.020"	.020"	0.025	0.025	0.035	.040"	.050"	.060"	.060"	.070"	.070"	.070"	.080"
Min. Pipe Stiffness at 5%	50 PSI	50 PSI	50 PSI	50 PSI	50 PSI	42 PSI	40 PSI	34 PSI	29 PSI	22.5 PSI	21 PSI	20 PSI	15 PSI
Water Inlet Area Per Foot	3.8in²/ft	3.3in²/ft	4.2in²/ft	2.8in²/ft	2.6in²/ft	3.5in²/ft	2.1in²/ft	2in²/ft	2in²/ft	2in²/f	2.6in²/f	2.6in²/f	N/A

Regular Corrugated Pipe — Nominal Dimeter (I.D.)											
	2"	3"	4"	5"	6"	8"	10"	12"	15"	18"	24"
Pounds Per foot	0.14	0.21	0.35	0.50	0.75	1.29	1.69	2.98	4.23	5.90	10.80
Inside Diameter	2"	3"	4"	5"	6"	8"	10"	12"	15"	18"	24"
Outside Diameter	2.45"	3.50"	4.60"	5.70"	6.80"	9.50"	11.75"	14.50"	17.50"	21.3"	27.90"
Min. Pipe Stiffness at 5%	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 Per Foot	1.0 sq.in	1.0 sq.in	1.0 sq.in	1.0 sq.in	1.0 sq.in	1.0 sq.in	1.0 sq.in	1.5 sq.in	1.5 sq.in	1.5 sq.in	2.0 sq.in

Scan for Installation Guide



Quality Assurance

At Haviland Drainage Products, our commitment goes beyond production and extends to every customer we serve. By combining dependable, high-quality products with exceptional service, we strive to deliver solutions that meet or exceed your expectations.

Material Properties

HDPE pipe shall be manufactured from high density polyethylene that meets the minimum cell classification requirements of 424420C for 4 through 10-inch diameters and 435400C for 12 through 60-inch diameters, in accordance with ASTM D3350.

SmoothPro pipe shall be manufactured from a copolymer material that meets the minimum requirements of ASTM F2881 and AASHTO M330.

Standards

AASHTO Product Evaluation and Audit Solutions

Resin Cell Classifications	ASTM Specification D3350 Polyethylene Resins
Density	4
Melt Index	3
Flexural Modulus	5
Tensile Strength	4
ESCR	0
HDB	0
UV Stabilizer Code	C

Applicable Standards	
ASTM D 2321	Standard Specification for Thermoplastic Pipe for Sewers & Other Gravity Flow Applications
ASTM D 3212	Standard Specification for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D 3350	Standard Specification for Polyethylene Plastic Pipe & Fitting Material
ASTM F 449	Standard Specification for Corrugated Polyethylene Pile for Agricultural Drainage or Water Table Control
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
ASTM F 894	Standard Specification for Polyethylene Large Diameter Profile Wall Sewer* Drain Pipe
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
ASTM F 2306	Standard Specification for 12"-60" Annular Corrugated Profile-Wall Polyethylene Pipe & Fittings
ASTM F 2487	Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene Pipelines
ASTM F 2648	Standard Specification for 2"-60" Annular Corrugated Profile Wall Polyethylene Pipe & Fittings for Land Drainage Applications
AASTHO M 252	Standard Specification for Corrugated Polyethylene Drainage Pipe, 3" thru 10" diameter
AASHTO M 294	Standard Specification for Corrugated Polyethylene Pipe, 12" thru 60" diameter
AASHTO M 330	Standard Specifications for Polypropylene Pipe 12" thru 42" diameter

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



This image shows a blank sheet of white paper with horizontal grey ruling lines. In the bottom right corner, there is a solid blue circular shape, which appears to be a decorative element or a partial view of a larger graphic. The rest of the page is empty and contains no text or other markings.

Multiplier for % of Truckloads		
Size	%	Pieces
3 x 100	0.20	270
3 x 250	0.70	143
4 x 10	0.50	200
4 x 100	0.50	200
4 x 250	1.10	88 IN/93 OH
4 x 150	0.70	143
5 x 150	1.10	88 IN/96 OH
6 x 100	1.10	90 IN/96 OH
8 x 20	0.34	275
10 x 20	0.60	167
12 x 20	0.86	116
15 x 20	1.25	80
18 x 20	1.95	48
24 x 20	3.70	30
30 x 20	5.55	18
36 x 20	8.33	12
42 x 20	10	10
48 x 20	12.5	8
60 x 20	22	4
8" and up can be telescoped 36" will not go into 42"		



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