



JAY R. SMITH MFG. CO.
MEMBER OF MORRIS GROUP INTERNATIONAL



Enviro-Flo[®] II Trench Drain Series

A Polypropylene Surface Drainage System



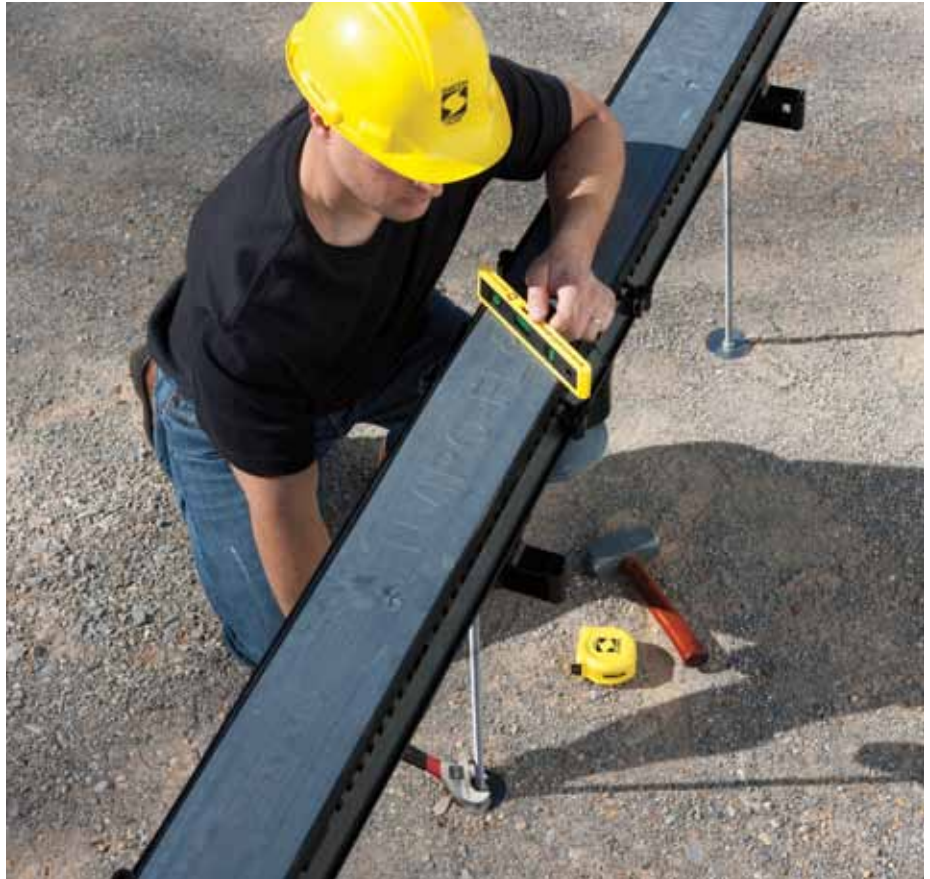
Enviro-Flo® II Trench Drain Systems

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Enviro-Flo® II Trench Drain Systems



Introducing Enviro-Flo® II Trench Drain Systems

The Enviro-Flo® II Trench Drain Series from Jay R. Smith Mfg. Co. is designed to improve drainage flow in a broad spectrum of manufacturing, processing, commercial and industrial applications.

The Enviro-Flo II trench drain series pioneered a new trend in trench drain technology, and has all the compelling qualities you look for when deciding on a manufactured sloping trench drain system. The lightweight, 100% recycled polypropylene construction, along with the Enviro-Loc® mechanical interlocking joint, molded outlet connection, rebar anchors and accessory rail make installations quicker and easier; a complete selection of grate materials make it contractor-friendly.

Design Approach

Follow these nine steps to properly select your drainage system.

To select the proper drainage system:

1. Identify the appropriate loading and fall conditions based on the anticipated traffic, site topography or other physical constraints.
2. Calculate the length and depth of the catchment area.
3. Identify rainfall intensity over the given area. Identify the output position, source and flow rate of the liquid to be drained.
4. Determine runoff surface flow characteristics.
5. Calculate required flow rate per section of drainage channel and its distribution (i.e., evenly or unevenly distributed).
6. Select the system with the appropriate capacity for the conditions identified.
7. Determine the number, size and positions of outlets to the drainage system.
8. Determine the concentration of the chemicals to which the system may be exposed. See the Chemical Resistance Chart on pages 19 and 20.
9. Select appropriate load class grate from illustrations on page 15 or 16 to go with 9930 or 9931 channel systems listed on page 8, Load Rating and Application Guidelines.



Enviro-Flo® II – The Contractor Friendly System that Replaces Cast-in-Place Trench Drains

System Features

- Each section has a 4" molded no-hub bottom outlet connection;
- Each channel is identified with flow arrow and sequence numbers;
- Each channel has angular full length anchoring ribs;
- Each channel is shipped with a removable factory insert board constructed from post-industrial recycled material that functions as a stabilizer and debris guard;
- Horizontal outlet cap available;
- Mechanical interlocking end caps.



Integral Rebar Mount

Lightweight–Easy to Handle

1. 100% recycled polypropylene;
2. Reduces installation costs in every aspect;
3. Easiest field modification: cut, drill, machine, weld;
4. Superior chemical resistance;
5. Durable—non-breakable, won't chip.

Enviro-Loc®

1. Mechanical interlocking joint;
2. Alignment integrity maintained;
3. With proper sealant, provides a watertight connection.



Vertical Outlet

The vertical outlet attaches to the Enviro-Flo II accessory rail to create an outlet anywhere on the channel.





Features and Benefits

Locking Grates

1. Complete selection to meet all requirements;
2. Positive lockdown function means grates won't wobble;
3. No frames needed on most installations.



New Features for Enviro-Flo II

- **Longer, Shallower Runs:** Specify up to 20 sloping and 20 neutral channels.
- **New Mounting System:** Integral rebar clips or the new Rante Arrow offer flexible installation options.
- **Secure Tongue & Groove Connections:** New tongue and groove connectors retain more sealant for a more uniform joint.
- **Flexible Installation:** Choose outlet location, create miter and tee connections with adapters, and shorten channels in the field.



Presloped Channels

1. 1 meter (3.28 feet) channel sections speed installation;
2. Presloped (.6%) radius channels;
3. Smooth, uniform interior delivers best hydraulic performance.

Rante Arrow Mount

Provides vertical and horizontal adjustments for quick and easy leveling.





Rante Arrow Mounting System



1. Align male and female ends of the channels.



2. Slide channels together.



3. Ensure that channels are securely connected and properly seated in the Rante Arrow.



4. Check for level to ensure that channels are installed properly.

The Jay R. Smith Mfg. Co.® Enviro-Flo® II Systems with Enviro-Loc® joints are easy to install using the Rante Arrow or Integral Rebar Clips.

For Rante Arrow installation, simply align male and female ends of channels and slide together as illustrated in photos 1 and 2.

After making the Enviro-Loc® connection, span the channel joint with the factory furnished recycled board insert (photo 3) to protect channel grate recess, prevent debris from entering channel section and to maintain proper channel and grate alignment.



Integral Rebar Mounting System



1. Align male and female ends of the channels.



2. Slide channels together.



3. Ensure that channels are securely connected and correctly aligned



4. Secure channel into the ground with rebar using integral rebar clips.

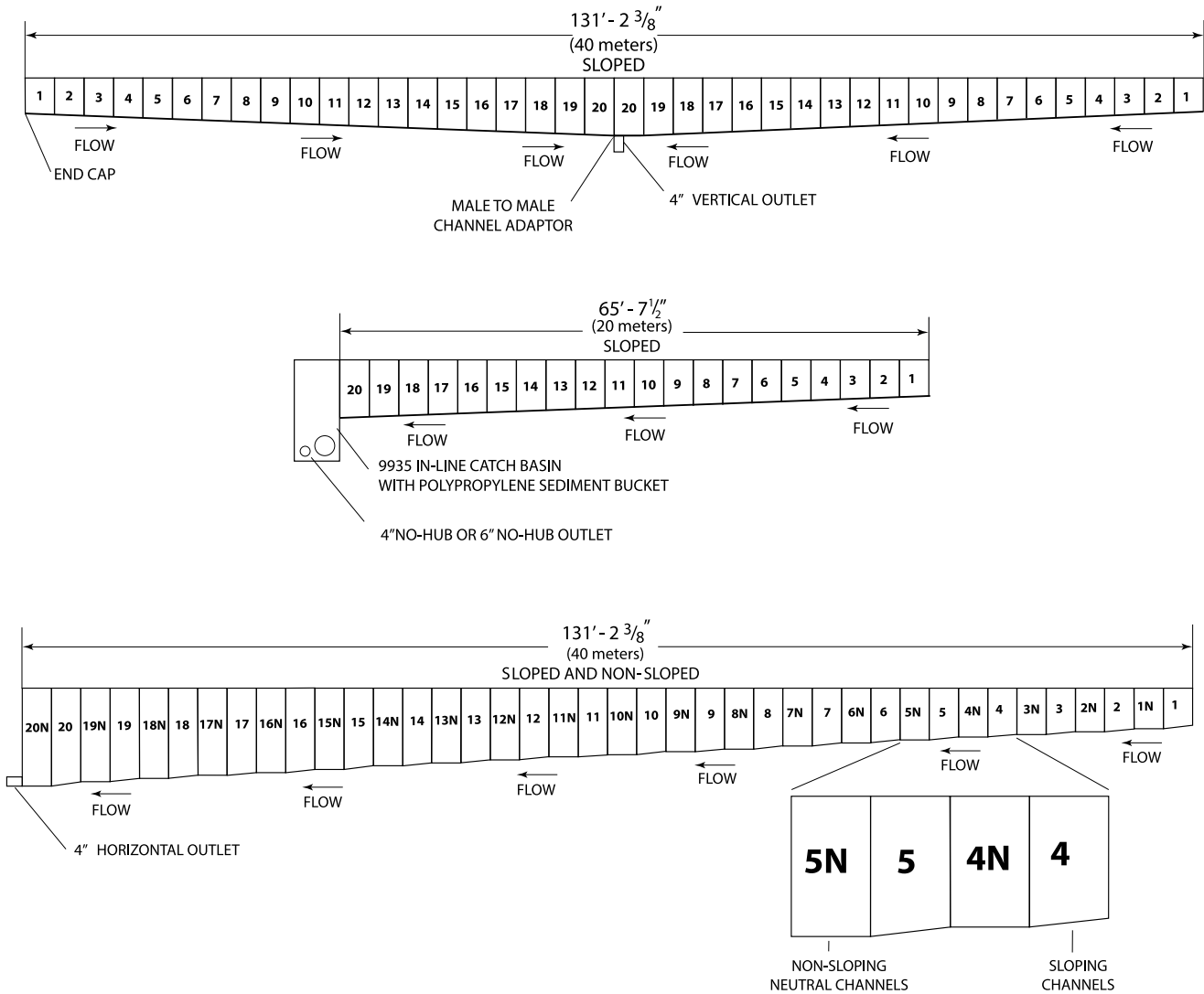
For rebar installation, simply align male and female ends of channels and slide together as illustrated in photos 1 and 2.

After making the Enviro-Loc® connection, ensure that the channels are securely connected and aligned correctly, then insert rebar into the integral rebar clips and secure into the ground.

After securing the channel with rebar, span the channel joint with the factory furnished recycled board insert (photo 3) to protect channel grate recess, prevent debris from entering channel section and maintain proper channel and grate alignment.



Enviro-Flo II System Notes



Notes

- Channels are both pre-sloped and neutral polypropylene.
- Always begin installation with the discharge channel or catch basin and work back to the shallow end.
- Arrows on channels indicate flow direction and numbers indicate sequence of installation.
- Channels and catch basins require a minimum of 4" of concrete or slab thickness, whichever is greater, around and under channel system.
- If field trimming is necessary, always trim channels at shallow end of system.
- Insert board must be maintained in the channel during the final pour.



Load Rating and Application Guidelines



Load Rating and Application Guidelines

Pedestrian, Bicycle, Private Vehicle Use

9930, 9931 (with appropriate grating)



Passenger Cars, Vans

9930, 9931 (with appropriate grating)



Commercial Vehicles, Buses

9930, 9931 (with appropriate grating)



Pneumatic Tire Forklift Traffic

9930, 9931 (with appropriate grating)



Solid Tire Forklift Traffic

9931 (with appropriate grating)

• See pages 15 and 16 for appropriate grating for load class requirements.



9930 Enviro-Flo II Trench Drain System

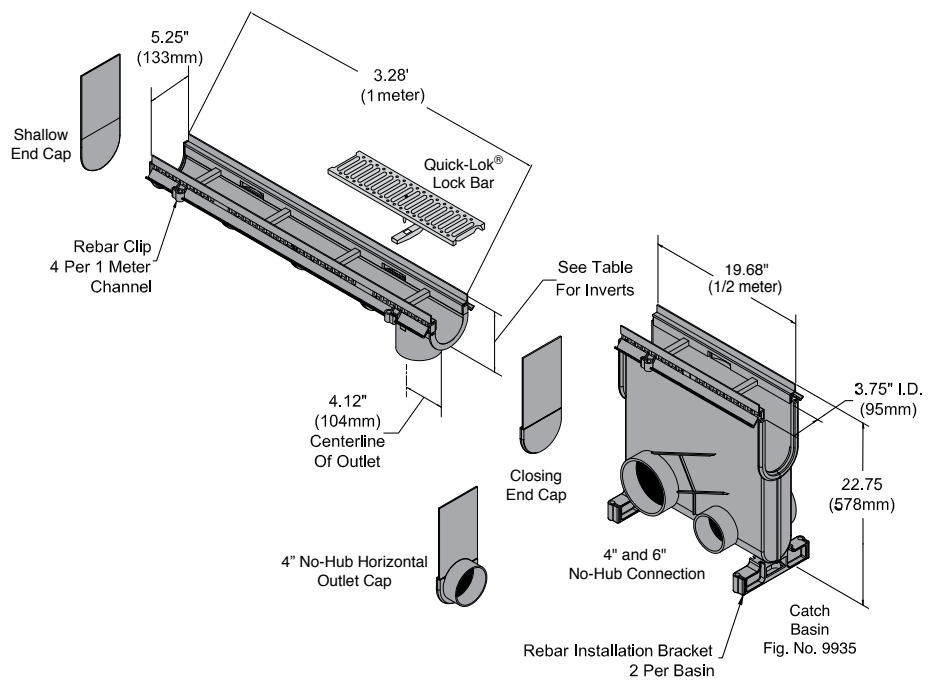


9930 Enviro-Flo II Trench Drain System

The 9930 is a sloped drainage system with 100% polypropylene channels of interlocking design with a built-in slope of 0.6% and radiused bottom. This model is recommended for light and heavy duty applications. The 9930 channel utilizes the Quick-Lok® grate feature that allows the grating to be secured to the channel easily. A variety of channel grates are available. Refer to pages 15 and 16 for complete grating information.



9930 Trench Drains with Catch Basin



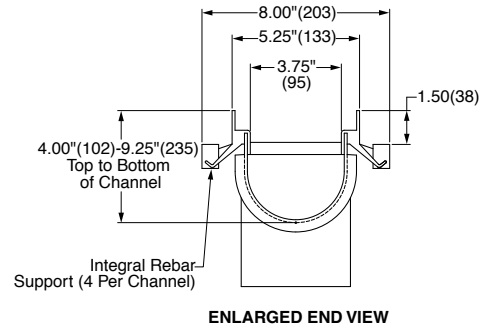


9930 Enviro-Flo II System Overview

HYDRAULIC CAPACITY AND DEEP END DEPTHS 9930 SYSTEM

CHANNEL NUMBER	DEEP END DEPTH		SLOPE	SINGLE CHANNEL		WEIGHT Lbs.
	IN.	MM.		EST CFS	EST GPM	
9930-1	4.38	111	0.6%	.29	130	6.50
9930-1N	4.38	111	0.0%	.29	130	6.50
9930-2	4.62	117	0.6%	.31	139	6.60
9930-2N	4.62	117	0.0%	.31	139	6.60
9930-3	4.88	124	0.6%	.34	153	6.80
9930-3N	4.88	124	0.0%	.34	153	6.80
9930-4	5.12	130	0.6%	.36	162	6.90
9930-4N	5.12	130	0.0%	.36	162	6.90
9930-5	5.38	137	0.6%	.39	175	7.00
9930-5N	5.38	137	0.0%	.39	175	7.00
9930-6	5.62	143	0.6%	.42	189	7.20
9930-6N	5.62	143	0.0%	.42	189	7.20
9930-7	5.88	149	0.6%	.45	202	7.40
9930-7N	5.88	149	0.0%	.45	202	7.40
9930-8	6.12	155	0.6%	.47	211	7.60
9930-8N	6.12	155	0.0%	.47	211	7.60
9930-9	6.38	162	0.6%	.49	220	7.60
9930-9N	6.38	162	0.0%	.49	220	7.60
9930-10	6.62	168	0.6%	.53	238	7.80
9930-10N	6.62	168	0.0%	.53	238	7.80
9930-11	6.68	170	0.6%	.56	251	8.00
9930-11N	6.68	170	0.0%	.56	251	8.00
9930-12	7.12	181	0.6%	.58	261	8.00
9930-12N	7.12	181	0.0%	.58	261	8.00
9930-13	7.38	187	0.6%	.61	274	8.40
9930-13N	7.38	187	0.0%	.61	274	8.40
9930-14	7.62	194	0.6%	.64	287	8.40
9930-14N	7.62	194	0.0%	.64	287	8.40
9930-15	7.88	200	0.6%	.67	301	8.60
9930-15N	7.88	200	0.0%	.67	301	8.60
9930-16	8.12	206	0.6%	.70	314	8.80
9930-16N	8.12	206	0.0%	.70	314	8.80
9930-17	8.38	213	0.6%	.73	328	8.80
9930-17N	8.38	213	0.0%	.73	328	8.80
9930-18	8.62	219	0.6%	.76	341	9.00
9930-18N	8.62	219	0.0%	.76	341	9.00
9930-19	8.88	226	0.6%	.79	355	9.20
9930-19N	8.88	226	0.0%	.79	355	9.20
9930-20	9.12	232	0.6%	.82	368	9.40
9930-20N	9.12	232	0.0%	.82	368	9.40

Note: Channel flow rates based on channels less grates and open ended.

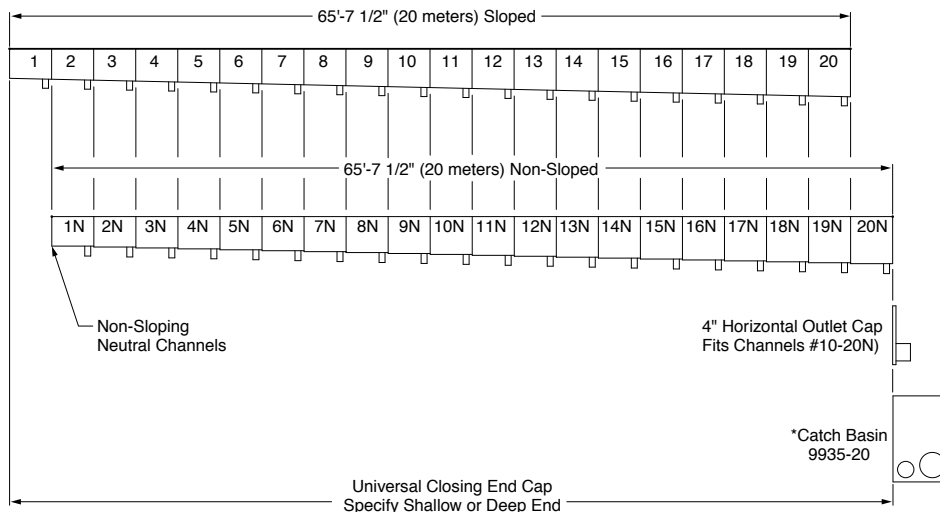


Note: Dimensions in Parentheses are in mm.

***Note:** If Catch Basin is Specified For Any Other Channel Except For the #20 Channel, a Shim Must be Ordered, P/N: 9930-ES

Note: This Trench Drain System is Designed for "On Grade Applications Only" as There are No Provisions for a Flashing Flange or Flashing Clamp

****Note:** All 1 Meter Long Sloped and Neutral Channels Have a Molded 4"(111) No-Hub Bottom Connection.





9931 Enviro-Flo II Trench Drain System



9931 Enviro-Flo II Trench Drain System

The 9931 incorporates a ductile iron frame with concrete frame anchors and grate. Recommended for situations requiring a heavy duty frame, grate and fully sloped channel, 9931 provides the perfect drainage solution. The frame and grate is capable of handling solid tire traffic and provides high resistance against the impact of steel containers, struts and metal wheels. The sturdy ductile iron framework will also accept any of the ductile iron gratings and

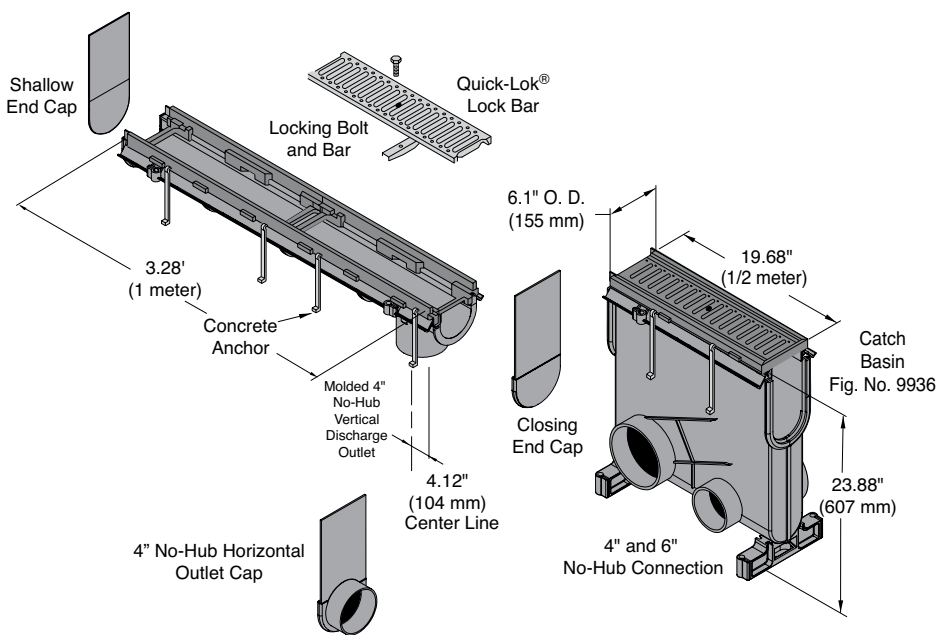


covers to meet specific site requirements (see pages 15 and 16 for grating options). The frame adds an additional height of 1.1" (28 mm) to channel units. See chart on the next page for details of channel depth and system design.

The 9931 with frame locked down and grate is especially designed to prevent longitudinal or lateral movement. The complete line of 9930 accessories is available for use with the 9931. See pages 17 and 18 for details.



9931 Trench Drains with Catch Basin



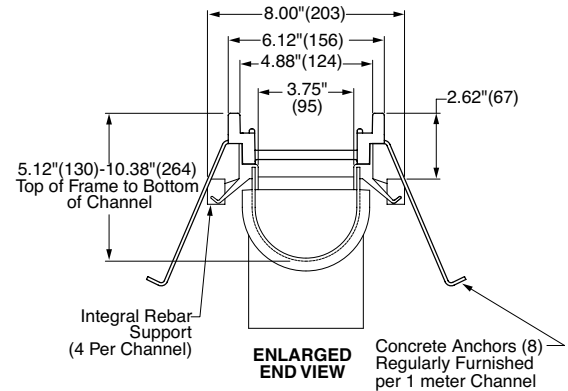


9931 Enviro-Flo II System Overview

HYDRAULIC CAPACITY AND DEEP END DEPTHS 9931 SYSTEM

CHANNEL NUMBER	DEEP END DEPTH		SLOPE	SINGLE CHANNEL		WEIGHT Lbs.
	IN.	MM.		EST CFS	EST GPM	
9931-1	5.50	140	0.6%	.29	130	23.02
9931-1N	5.50	140	0.0%	.29	130	23.02
9931-2	5.75	146	0.6%	.31	139	23.12
9931-2N	5.75	146	0.0%	.31	139	23.12
9931-3	6.00	152	0.6%	.34	153	23.32
9931-3N	6.00	152	0.0%	.34	153	23.32
9931-4	6.25	159	0.6%	.36	162	23.42
9931-4N	6.25	159	0.0%	.36	162	23.42
9931-5	6.50	165	0.6%	.39	175	23.52
9931-5N	6.50	165	0.0%	.39	175	23.52
9931-6	6.75	171	0.6%	.42	189	23.72
9931-6N	6.75	171	0.0%	.42	189	23.72
9931-7	7.00	178	0.6%	.45	202	23.92
9931-7N	7.00	178	0.0%	.45	202	23.92
9931-8	7.25	184	0.6%	.47	211	24.32
9931-8N	7.25	184	0.0%	.47	211	24.32
9931-9	7.50	191	0.6%	.49	220	24.32
9931-9N	7.50	191	0.0%	.49	220	24.32
9931-10	7.75	197	0.6%	.53	238	24.32
9931-10N	7.75	197	0.0%	.53	238	24.32
9931-11	8.00	203	0.6%	.56	251	24.52
9931-11N	8.00	203	0.0%	.56	251	24.52
9931-12	8.25	210	0.6%	.58	261	24.52
9931-12N	8.25	210	0.0%	.58	261	24.52
9931-13	8.50	216	0.6%	.61	274	24.92
9931-13N	8.50	216	0.0%	.61	274	24.92
9931-14	8.75	222	0.6%	.64	287	24.92
9931-14N	8.75	222	0.0%	.64	287	24.92
9931-15	9.00	229	0.6%	.67	301	25.12
9931-15N	9.00	229	0.0%	.67	301	25.12
9931-16	9.25	235	0.6%	.70	314	25.32
9931-16N	9.25	235	0.0%	.70	314	25.32
9931-17	9.50	241	0.6%	.73	328	25.32
9931-17N	9.50	241	0.0%	.73	328	25.32
9931-18	9.75	248	0.6%	.76	341	25.52
9931-18N	9.75	248	0.0%	.76	341	25.52
9931-19	10.00	254	0.6%	.79	355	25.72
9931-19N	10.00	254	0.0%	.79	355	25.72
9931-20	10.25	260	0.6%	.82	368	25.92
9931-20N	10.25	260	0.0%	.82	368	25.92

Note: Channel flow rates based on channels less grates and open ended.

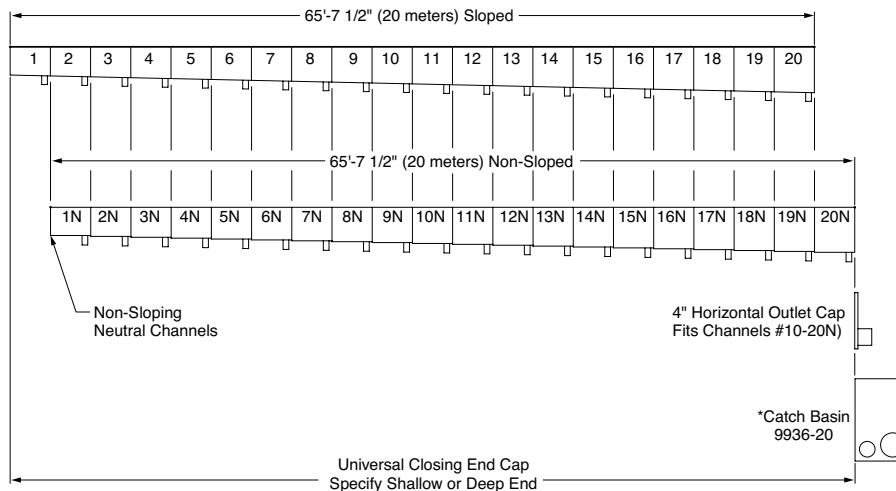


Note: Dimensions in Parentheses are in mm.

*Note: If Catch Basin is Specified For Any Other Channel Except For the #20 Channel, a Shim Must be Ordered, P/N: 9930-ES

Note: This Trench Drain System is Designed for "On Grade Applications Only" as There are No Provisions for a Flashing Flange or Flashing Clamp

**Note: All 1 Meter Long Sloped and Neutral Channels Have a Molded 4"(111) No-Hub Bottom Connection.





9930 Trench Drain System with QuickLok®



The 9930 Series QuickLok® makes assembly and removal of the cover grate easier than ever.

QuickLok® is a revolutionary grate locking system designed to improve accessibility to the channels for cleaning and maintenance. QuickLok® replaces the standard bolt and bar locking device used in many other trench drain systems. The factory assembled components that make up the QuickLok® locking system include a smooth stainless steel grate lug and a spring clip type locking bar. See below illustration.

ASSEMBLY AND REMOVAL



Step 1. The spring clip in the locking bar is designed to allow centering of the grates for final positioning.

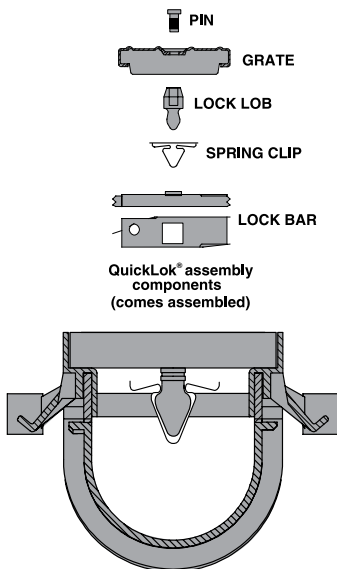


Step 2. There is no need for tools to fasten the grate into the channel. The grate snaps into place with a quick impact.



Step 3. The locking force is sufficient to hold grates in place up to and including load Class C.

QuickLok® components are preassembled to the grating and only the locking bar must be fit into place by the installer. The locking bar holds itself into the channel's locking pockets with tension side grips which can be released with a flat blade screwdriver. Removing the grates for channel cleaning is simple. A grate lifting tool, Fig. No. 9859 (shown below), is offered for removal.



QuickLok® is a registered trademark of ACO Polymer Products, Inc.

Grating Available with Quick Lok®

Grate	Load Class	
	A	C
9870-410-GP	•	
9870-420-G	•	
9870-447-SSADA	•	
9870-450-SS	•	
9870-451-SSPA	•	
9870-494-PADAB	•	
9870-494-PADAG	•	
9870-405-GM	•	
9870-411GPHD		•
9870-425-GHD		•
9870-430-SSM		•
9870-455-SSHD		•
9870-465-SSP		•
9870-479-MD		•
9870-480-IW		•
9870-480-ID		•
9870-492-RC		•




9859 QuickLok® Hook

Designed to ease the removal of grates from trench drainage system using the QuickLok® securing method.



Enviro-Flo II Trench Drain Worksheet

 <p>MEMBER OF MORRIS GROUP INTERNATIONAL™ P. O. BOX 3237 MONTGOMERY, AL 36109-0237 TEL: (334) 277-8520 FAX: (334) 272-7396 www.jrsmith.com</p>		<h2 style="margin: 0;">TRENCH DRAIN QUOTATION WORKSHEET</h2>			
JOB NAME & DESCRIPTION:		INPUT BY:	DATE:		
LOCATION:		BID DATE:	QUOTE DATE:		
CONTACT:	CONTRACTOR:	ARCHITECT/ENGINEER:			
PHONE:	PHONE:	PHONE:			
DIMENSIONS/SHAPE OF TRENCH: (Attach additional sheets if more than one trench application or more than one run is specified.)					
NO OF RUNS:	LENGTH OF RUN:	MAX FLOW ANTICIPATED:	MAX TEMP:	CATCH BASIN SPECIFIED: <input type="checkbox"/> N <input type="checkbox"/> Y Qty:	AIR TRAP SPECIFIED: <input type="checkbox"/> TE <input type="checkbox"/> TS
LOAD CLASS/TRAFFIC TYPE (Indicate maximum wheel load anticipated): <input type="checkbox"/> (A) Light Duty, DIN 19580 Class A-3500 lbs-70 psi for pedestrian wheelchair and bicycle traffic <input type="checkbox"/> (C) Heavy Duty, DIN 19580 Class C-56,000 lbs commercial pneumatic tire traffic patterns, forklifts and tractor trailers <input type="checkbox"/> (E) Extra Heavy Duty, DIN 19580 Class E-135,000 lbs commercial solid tire traffic patterns, forklifts and impacts from steel struts or metal wheels GRATE FINISH & OPENING TYPE REQUIRED AS SPECIFIED		CHEM EXPOSURE: <input type="checkbox"/> None <input type="checkbox"/> Limited <input type="checkbox"/> Constant	CHEM & % CONC: (Attach MSDS)	TRENCH MATERIAL REQUIRED: <input type="checkbox"/> Polyester <input type="checkbox"/> Vinylester	
		OUTLET SIZE & TYPE: <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> 8" <input type="checkbox"/> Other		<input type="checkbox"/> H <input type="checkbox"/> V	INLET REQUIRED: <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> None
		FRAME (RAIL) FINISH REQUIRED: <input type="checkbox"/> Coated Iron <input type="checkbox"/> Stainless Steel <input type="checkbox"/> Ductile Iron <input type="checkbox"/> Galvanized Steel			
BILL OF MATERIALS:					
	Fig. No.	Qty.	Price Each	Ext.	
Full Channels, Sloped					
Full Channels, Neutral					
1/2 Channels, Neutral					
Catch Basin(s)					
Grates w/Lock Dev					
Inlet or End Caps					
Outlet Caps					
Rante Arrow					
Strainers					
Fabrications					
Miters					
Tees					

PM 0340-E



9930 and 9931 Trench Drain System Grates

Load Class A: Light Duty

Light Duty, DIN 19580 Class A - 3,500 lbs - 70 psi for pedestrian, wheelchair and bicycle traffic.

9870-410-GP Perforated Galvanized Steel

1/4" holes for effective surface drainage. Minimizes high heel hazard and large debris collection. 1 meter. 5 lbs. Open Area 17.60 Sq. In. Quicklok® securing device is regularly furnished.

9870-420-G Slotted Galvanized Steel

For auto, light truck or van traffic. Resistant to bicycle and wheelchair tires; efficient drainage. 1 meter. 6 lbs. Open Area 44.60 Sq. In. Quicklok® securing device is regularly furnished.

9870-440-VF Vinylester Fiberglass

For high chemical resistance or non-conductivity. 1/4" bars spaced on 1" centers. 1 meter. 4 lbs. Open Area 110.0 Sq. In.

9870-440-VF2 Vinylester Fiberglass

For high chemical resistance or non-conductivity. 1/4" bars spaced on 5/8" centers. 1 meter. 4 lbs. Open Area 110.0 Sq. In.

9870-447-SSADA ADA Stainless Steel

Stainless steel 11 ga. ADA compliant design rated for light duty loads, 1 meter 8lbs., open area 95.00 Sq. In. Quicklok® securing device is regularly furnished.

9870-450-SS Slotted Stainless Steel

For food and beverage processing areas. High corrosion resistance. 1 meter. 6 lbs. Open Area 44.60 Sq. In. Quicklok® securing device is regularly furnished.

Load Class A: Light Duty, cont'd.

9870-451-SSPA Perforated Stainless Steel

1/4" holes for effective surface drainage. Minimizes high heel hazard and large debris collection. High corrosion resistance. 1 meter. 5 lbs. Open Area 17.60 Sq. In. Quicklok® securing device is regularly furnished.

9870-491-HPP Slotted Black Polypropylene

1/4" slots minimizes high heel hazard and large debris collection. Designed for light duty loads, 1/2 meter. 2 lbs. Open Area 17.55 Sq. In. Also available in beige (B), light grey (LG), dark grey (DG), and white (W).

9870-494-PADAB ADA Black Polypropylene

ADA compliant design that is rated for light-duty loads. 1/2 meter 2lbs., open area 28.00 sq. in. Also available in gray (PADAG), brick red (PADABR) and green (PADAGR). Quicklok® securing device is regularly furnished.

Custom Image Trench Drain Grate

Custom designed grates and covers manufactured to your design specifications. For more information, ask for the Custom Images brochures.

Load Class C: Heavy Duty

Heavy Duty, DIN 19580 Class C - 56,000 lbs. 1,162 psi for commercial pneumatic tire traffic patterns, forklifts, and tractor trailers

9870-405-GM Mesh Galvanized Steel

Galvanized steel 14 ga. mesh designed for heavy loads and high intake capacity. 1 meter 8lbs., open area 125.30 Sq. In. Quicklok® securing device is regularly furnished.

9870-411-GPHD Perforated Galvanized Steel (Reinforced)

1/4" holes for effective surface drainage. Minimizes high heel hazard and large debris collection. Heavy loads and frequent traffic. 1 meter. 10 lbs. Open Area 26.80 Sq. In. Quicklok® securing device is regularly furnished.



9930 and 9931 Trench Drain System Grates

Load Class C: Heavy Duty, cont'd.

9870-416-GS

Solid Galvanized Steel

(Reinforced). For pipe or conduit housing. Protects channel from debris while allowing access. For heavy duty loads and frequent traffic. 1 meter. 11 lbs.



9870-425-GHD

Slotted Galvanized Steel

(Reinforced) For heavy loads and frequent traffic. Less than half the weight of cast iron. 1 meter. 10 lbs. Open Area 44.60 Sq. In. Quicklok® securing device is regularly furnished.



9870-430-SSM

Mesh Stainless Steel

Stainless steel 14 ga. mesh designed for heavy loads and high intake capacity. 1 meter 8 lbs., open area 125.30 Sq. In. Quicklok® securing device is regularly furnished.



9870-455-SSHD

Slotted Stainless Steel

(Reinforced). For heavy loads and frequent traffic. High corrosion resistance. 1 meter. 10 lbs. Open Area 44.60 Sq. In. Quicklok® securing device is regularly furnished.



9870-465-SSP

Perforated Stainless Steel

(Reinforced). 1/4" holes for effective surface drainage. Minimizes high heel hazard and large debris collection. Heavy loads and frequent traffic. High corrosion resistance. 1 meter. 12.5 lbs. Open Area 26.80 Sq. In. Quicklok® securing device is regularly furnished.



9870-479-MD

MOSAIC Ductile Iron

Black duco coated ductile iron grate with mosaic pattern, designed for heavy duty loads. 1/2 meter. 10 lbs. Open Area 19.50 Sq. In. Quicklok® securing device is regularly furnished.

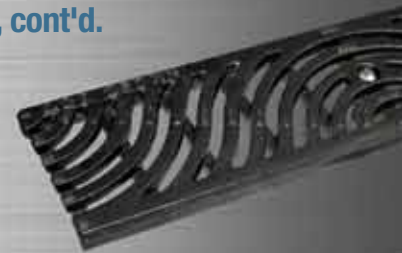


Load Class C: Heavy Duty, cont'd.

9870-480-IW

Iron Wave

A decorative grate for heavy-duty applications. Quicklok® securing device is regularly furnished. 1/2 meter. 10 lbs. Open Area 35.98 Sq. In.



9870-480-ID

Iron Decorative

A decorative grate for heavy-duty applications. Quicklok® securing device is regularly furnished. 1/2 meter. 11 lbs. Open Area 19 Sq. In.



9870-492-RC

Resin Composite

Durable resin composite with 5/16" slots for effective surface drainage. For harsh chemical application, non-conductive and anti-spark. 1/2 meter. 4 lbs. Open Area 35.60 Sq. In. Quicklok® securing device is regularly furnished.



*Load Class E: Extra Heavy Duty

Extra Heavy Duty, DIN 19580 Class E - 135,000 lbs. - 2,788 psi for commercial solid tire traffic patterns, forklifts and impacts from steel struts or metal wheels.

9870-456D-MS

Solid Ductile Iron

For pipe or conduit housing. Protects channel from debris while allowing access. 1/2 meter. 14 lbs.



9870-461-M

Slotted Ductile Iron

For dynamic loads and hard wheel forklifts. 1/2 meter. 11 lbs. Open Area 26.40 Sq. In.



9870-477-MADA

ADA compliant design that is rated for heavy loads and frequent traffic. 1/2 meter. 11 lbs. Open Area 28.50 Sq. In.



*Only meets Class E Rating when used with 9931 Series Ductile Iron Frame.

QuickLok® is a registered trademark of ACO Polymer Products, Inc.



Shallow End-Cap

Shallow end caps accommodate the shallow end of the channel and feature a cutting guide for a perfect fit.



Deep End-Cap

Deep end caps accommodate the deep end of the channel and feature a cutting guide for a perfect fit.



Horizontal Outlet Cap

This end cap fits channels #10-20N and creates a horizontal outlet.



No-Hub Outlet

The vertical outlet attaches to the Enviro-Flo II accessory rail to create an outlet anywhere on the channel.



Chem-Calk 900 Sealant

Used to seal end caps and between channel sections also can be used as a sealant for custom miter or tee fabrications on the job site.



9854 Strainer

Designed to fit a 4" diameter channel outlet hole, the strainer prevents debris from entering underground piping systems.



9931-EF Series Closing End Frame

The 1/2 meter long end frame, 9931-EF, is required on all 9931 series trench drain runs; that is, one (1) closing end frame on the first and last channel section of the run. The closing end frame provides a ductile iron finished edge for the first and last channel sections. It adds an additional 1.1" to the overall channel height.



9853 Shovel Head

Shaped to match the inside diameter of all 4" I.D. channels, the 9853 Shovel Head is a convenient tool for channel cleaning.



9930-SSR Stainless Steel Rail

For aesthetic purpose only. 1 meter, 1/2 meter lengths. (Load Class "A" Grates Only)



Additional Accessories and Enviro-Flo II System Customizations

Accessories



9849 Rante-Arrow

The 9849 Rante-Arrow is designed for use with the 9930 and 9931 systems. The 9849 Rante-Arrow firmly anchors the channel system in most sub-base conditions, eliminating flotation and allowing for a monolithic pour. Provides vertical and horizontal adjustments for quick and easy leveling.



9935/9936 Catch Basins with Trash Bucket

The 9935 and 9936 Series Catch Basins are the same width as the 9930 or 9931 Channels. They can be used with any style 9930 or 9931 frame and grate options. Trash bucket in plastic material is available for easy removal of debris. Reference pages 15 and 16 for complete grate information.



9931-CA Concrete Frame Anchors

Concrete anchors are required for use with 9931 Enviro-Flo II channels. Each 1/2 meter frame requires four anchors. The concrete anchors tie the frame into the surrounding concrete and help prevent the ductile iron frames from shifting or pulling out after the installation.

Enviro-Flo II Systems Customizations



Male Coupling

The male coupling allows two male channel ends to be joined together, offering contractors greater flexibility to make adjustments in the field.



Tee Connection

The tee connection allows contractors to make quick and easy tee connections in the field.



Custom Factory Fabrications

Factory fabrications are available upon request and are designed and manufactured to meet your specific requirements.



Enviro-Flo II Systems Chemical Resistance Guideline

The following chart will assist in selecting what base material to specify for trench drain systems. The combination of temperature, chemicals and chemical concentration determines resistance of channel material to the applications.

Y - Indicates the material is resistant to the particular chemical.

N - Indicates the material is insufficiently resistant to the particular chemical and its use is not recommended.

“-” - Indicates this particular chemical has not been tested and no recommendation is being made for it.

F - Temperature is rated for maximum exposure in Fahrenheit.

CHEMICAL MEDIUM	% CONCENTRATION	RESISTANCE POLYPROPYLENE (Reg. Furn.)	CHEMICAL MEDIUM	% CONCENTRATION	RESISTANCE POLYPROPYLENE (Reg. Furn.)
Acetic Acid Glacial	97	Y 68F	Creosote	-	-
Acetic Acid50	Y 140F		Cyclohexane	-	N
Acetic Anhydride	-	-	Cyclohexanol	100	Y 68F
Acetone	100	Y 140F	Detergent	100	Y 140F
Alcohol, Ethyl	100	Y 180F	Diethylene Glycol	100	Y 160F
Alcohol, Isopropyl	100	Y 150F	Diglycolic Acid	100	Y 100F
Alum	100	Y 100F	Dimethylformamide	10	Y 120F
Aluminum Chloride	100	Y 140F	Dioxane	100	Y 73F
Aluminum Fluoride	100	Y 140F	Disodium Phosphate	100	Y 180F
Aluminum Sulphate	100	Y 140F	Epsom Salts	100	Y 180F
Ammonium100	N		Ethyl Glycol	100	Y 140F
Ammonium Chloride	100	Y 140F	Ethylene Diamene	100	Y 140F
Ammonium Fluoride	20	Y 140F	Ethylene Glycol	100	Y 140F
Ammonium Nitrate	100	Y 140F	Ferric Chloride	100	Y 140F
Ammonium Phosphate	100	Y 140F	Formaldehyde	40	Y 140F
Ammonium Sulphate	100	Y 140F	Formic Acid	100	Y 140F
Ammonium Sulfide	100	Y 140F	Fructose	100	Y 140F
Aniline	100	Y 140F	Fruit Juices	100	Y 140F
Anti-Freeze	100	Y 140F	Furfury Alcohol	-	-
Antimony Trichloride	100	Y 180F	Galtic Acid	-	-
Barium Chloride	100	Y 140F	Gasoline, leaded	100	Y 68F
Barium Hydroxide	100	Y 140F	Gasoline, unleaded	100	Y 68F
Battery Acid	60	Y 68F	Gelatin	100	Y 140F
Beer	100	Y 140F	Gin	100	Y 120F
Benzene	-	-	Glucose	20	Y 140F
Benzoic Acid	100	Y 140F	Glycol	100	Y 120F
Benzyl Alcohol	-	-	Haplane	-	-
Bismuth Carbonate	100	Y 180F	Hexane	100	Y 68F
Black Liquor	100	Y 140F	Hydrazine	-	-
Boric Acid	100	Y 180	Hydrobromic Acid	48	Y 140F
Brine	100	Y 180	Hydrochloric Acid	20	Y 140F
Bromic Acid-	-	-	Hydrofluoric Acid	40	Y 68F
Bulyl Acetate	100	N	Hydrofluoric Acid	-	-
Butanol	-	-	Hydrogen	-	-
Butyric Acid	100	Y 75F	Hydrogen Peroxide	30	Y 68F
Calcium Acetate	-	-	Hydrogen Sulphide (dry)	100	Y 140F
Calcium Chloride	50	Y 140F	Hydroxyacetic Acid	-	-
Calcium Hypochlorite	20	Y 140F	Iodine Solution	-	-
Calcium Nitrate	100	Y 140F	Isopropanol	100	Y 140F
Carbonic Acid	100	Y 140F	Isopropyl Ether	-	N
Carbon Dioxide (dry)	100	Y 140F	Jet Fuel JP-3	-	-
Castor Oil	100	Y 150F	Jet Fuel JP-4	-	-
Chloroethanol	-	-	Jet Fuel JP-5	-	-
Citric Acid	10	Y 150F	Kerosene	-	-
** Coconut Oil	100	Y 100F	Ketones	100	Y 68F
Cod Liver Oil	-	-	Lactic Acid	20	Y 140F
Copper Acetate	-	-	Lactic Acid	-	-
Copper Chloride	100	Y 140F	Lard Oil	-	-
Copper Fluoride	100	Y 140F	Lead Acetate	100	Y 140F
Copper Salts	100	Y 180F	Lead Nitrate	-	-
Cotton Seed Oil	100	Y 140F	Lemon Oil	100	N

Please refer to page 21 for channel joint sealing requirements.

** Chem-Caulk 900 approved for channel joint sealant, see page 17.



Enviro-Flo II Systems Chemical Resistance Guideline

The following chart will assist in selecting what base material to specify for trench drain systems. The combination of temperature, chemicals and chemical concentration determines resistance of channel material to the applications.

Y - Indicates the material is resistant to the particular chemical.

N - Indicates the material is insufficiently resistant to the particular chemical and its use is not recommended.

"-" - Indicates this particular chemical has not been tested and no recommendation is being made for it.

F - Temperature is rated for maximum exposure in Fahrenheit.

CHEMICAL MEDIUM	% CONCENTRATION	RESISTANCE POLYPROPYLENE (Regularly Furnished)
Linseed Oil	100	Y 140F
Lubricating Oil	100	Y 140F
Machine Oil	100	Y 120F
Magnesium Chloride	100	Y 140F
** Maleic Acid	100	Y 140F
Mercuric Chloride	100	Y 140F
Mercuric Cyanide	100	Y 140F
Mercury	100	Y 140F
Methyl Glycol -	-	-
Methyl Ethyl Ketone	100	Y 68F
Methylene Chloride	100	N
Mineral Oil	100	Y 68F
Morpholine	-	-
Neon	-	-
Nickel Acetate	-	-
Nickel Cyanide	-	-
Nickel Sulphate	100	Y 140F
Nitric Acid	30	Y 68F
Oil, Diesel Fuel	100	Y 68F
Oil, Fuel	100	Y 68F
Oil, Olive	100	Y 140F
Oxalic Acid	50	Y 68F
Phenol	100	Y 140F
Phosphoric Acid	95	Y 140F
Phosphates	-	-
Phosphorus Pentoxide	-	-
Photographic Developer	100	Y 140F
Pickle Brine	100	Y 140F
Picric Acid	-	-
Plating Solution, Arsenic	100	-
Plating Solution, Bronze	100	-
Plating Solution, Chrome	-	-
Plating Solution, Copper	100	Y 140F
Plating Solution, Nickel	100	Y 140F
Plating Solution, Silver	100	Y 140F
Polypropylene Glycol	-	-
Polyvinyl Alcohol	-	-
Potassium Bromate	10	Y 140F
Potassium Chloride	100	Y 140F
Potassium Hydroxide	50	Y 140F
Potassium Nitrate	100	Y 140F
Propanol	-	-
Prussic Acid	-	-
Rum	100	Y 100F
Salt Brine	100	Y 140F
** Sea Water	100	Y 140F
Silicic Acid	100	Y 140F
Silicone Oil	100	Y 140F
Sodium Benzoate	-	-
Sodium Bisulphite	-	-
Sodium Hydroxide	50	Y 140F
Sodium Peroxide	-	-

CHEMICAL MEDIUM	% CONCENTRATION	RESISTANCE POLYPROPYLENE (Regularly Furnished)
Sodium Silicate	100	Y 140F
Sodium Sulfide	25	Y 140F
Soybean Oil	100	Y 140F
Spermaceti	-	-
Sugar Solutions	100	Y 140F
Sulphuric Acid	60	Y 68F
Tallow	-	-
Tannic Acid	100	Y 140F
Toluene	-	N
Tomato Juice	100	Y 140F
Trichloroethylene	100	Y 140F
Urea	100	Y 140F
Urine	100	Y 140F
Vaseline	100	Y 140F
Vegetable Oil	100	Y 140F
Vinegar	100	Y 140F
** Water, Distilled	100	Y 150F
** Water, Potable	100	Y 180F
Water Sewage	100	Y 180F
Whiskey	100	Y 140F
White Liquor	100	Y 140F
Wine	100	Y 140F
Xylene	-	N
Yeast	100	Y 140F
Zinc Salts	100	Y 140F

Please refer to page 21 for channel joint sealing requirements.

** Chem-Caulk 900 approved for channel joint sealant, see page 17.



Part 1

General

All materials, labor, and equipment necessary to install a molded sloped or neutral chemical resistant polypropylene trench drainage system as specified and as shown on the working drawings shall be included. Install Jay R. Smith Mfg. Co.® drainage system in strict accordance with manufacturer's recommendations and shop drawings.

System Description

Modular trench drain system molded from corrosion resistant polypropylene including interlocking modular components for on-site installation.

Submittals

Manufacturer will submit, when required, shop drawings showing a schematic plan of the total drainage system listing all parts being provided with exact centerline dimensions suitable for installation. Copies of the manufacturer's recommended method of installation and assembly shall be submitted for review.

Product

Channels shall not have any projecting surfaces within 1" of the top surfaces.

- Internal Width 4.0"
- Unit Length 39.38"
- System Slope .6%
- Channel Compressive Strength 14,500 psi
- Channel Flexural Strength 2,900 psi
- Channel Water Absorption not to exceed 1%

Fig. No. 9930

- Unit Width 5.25"
- Unit Depth 4.00" to 9.25"

Fig. No. 9931

- Unit Width 6.12"
- Unit Depth 5.12" to 10.38"

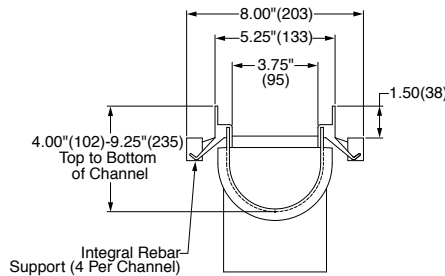


Illustration of Fig. No. 9930

Part 2

SPECIFICATION

Standard System

Trench drain system shall be Jay R. Smith Mfg. Co.® Enviro-Flo® II, model number 9930 (9931), presloped, polypropylene channels with UV inhibitors and Enviro-Loc®, positive seal, tongue and groove interlocking joints. Molded channels, with the exception of neutral channel, shall be presloped with a minimum of .6% slope and must include manufacturer's interlocking grate recess, concrete ribbing anchors, directional flow arrows, 4" no-hub molded outlet connection and molded manufacturer's channel identification for material.

Grates to be _____ light duty, _____ heavy duty, _____ extra heavy duty and shall be secured to channels with grate lock down devices positioned in recesses provided in channel.

Part 3

Recommendations

Install Jay R. Smith Mfg. Co.® Enviro-Flo II® Drainage Systems in strict accordance with manufacturer's recommendations and shop drawings. Excavate the area for channel placement wide and deep enough to accommodate the standard channel size and a minimum of 4" concrete encasement on both sides as well as underneath the

channels. Channels require a minimum of 4" of support and the top of the grate must be evenly aligned with the surface of the surrounding slab. (Note: The thickness of the concrete encasement must be at least as thick as the slab and never less than 4").

Installation

Channel sections are installed from the outlet end of the system working from either catch basins or large numbers to small numbers. Insert channels from above to allow ends to interlock. Channel sections shall be installed using manufacturer's recommended installation device to maintain a minimum of 4" thickness of concrete below the channel system, or suspended to obtain correct finished elevation. Cutting will be made if required by installer. During concrete pour, leave insert board in channels to avoid compression and to keep debris out.

Concrete Placement

Protect grates and channel interior during pouring of concrete. Place concrete in a manner that will not dislodge the channels. Concrete shall be at finished level or 1/8" above the top of the channel to ensure efficient drainage and adequate channel edge protection.

Finishing and Clean-up

Following final set of concrete, remove grate protection, place grates in final position and engage locking bolts in correct location.

Channel Joint Sealing Requirements

Heat welding is required to seal channel joint connections for all chemicals listed on pages 19 and 20 unless a ** is shown next to the chemical. Chemicals listed with a ** can also be sealed by using Chem-Caulk 900 sealant manufactured by Bostic.



Enviro-Flo II Trench Drain System Installation Instructions

Installation of Jay R. Smith Mfg. Co.® Enviro-Flo® II Drainage Systems is achieved by following these basic steps. (An Enviro-Flo® II Installation Guide is available upon request).

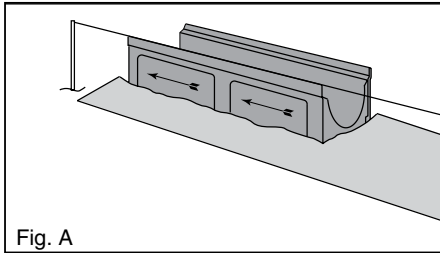


Fig. A

Excavate a wide and deep trench to accommodate the channel and bedding concrete. Erect a temporary string line at each end of the drain run as a guide for laying the channels to the required level. Using appropriate installation device, begin channel installation at the evacuation or discharge end of the run where the catch basin or outlet is located. (Fig. A)

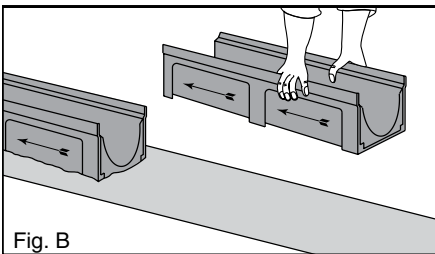


Fig. B

Successive channels should be installed in order to ensure the top edge of the channel follows the string line. It is important that the arrow molded on the channels always point to the outlet or catch basin. (Fig. B)

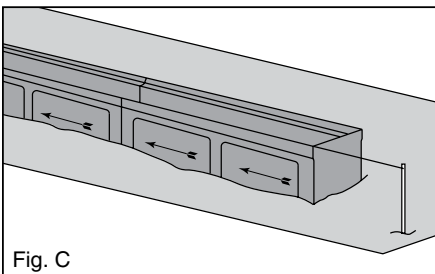


Fig. C

The final channel in the run may require cutting to length. End plates are then placed in position and backfilled with concrete. (Fig. C)

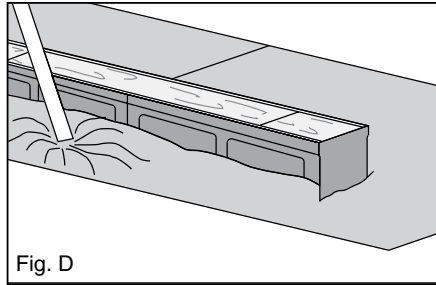


Fig. D

The depth of the bedding concrete should be a minimum of 4" or slab thickness, whichever is greater.

Jay R. Smith Mfg. Co.® Enviro-Flo II® Drainage System channels are shipped from the factory with 3/4" insert board in the grate seat. The insert board should be left in place when pouring concrete to prevent splashes and debris from entering the drain interior, and to maintain the correct grate seat width. (Fig. D)

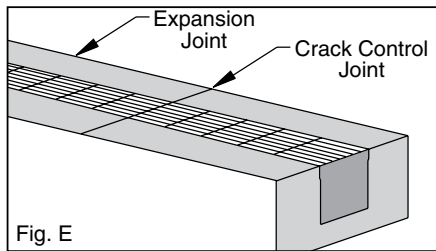
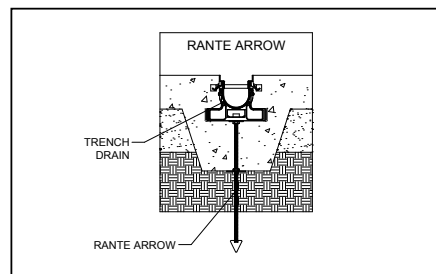


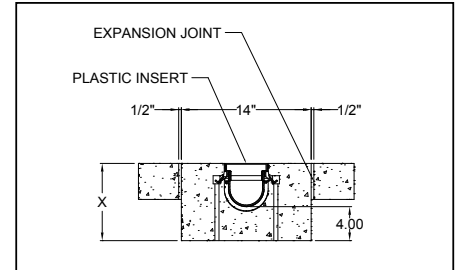
Fig. E

For drain channels laid in concrete floors, expansion joints must be provided parallel to each side of the drain run. Jay R. Smith Mfg. Co.® also recommends placing crack control joints at right angles to the channels. Line up these joints with the joint lines of the channels. (Fig. E)

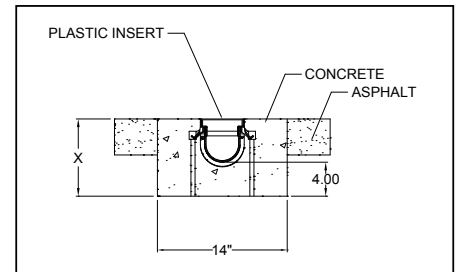


For a monolithic pour use the Rante-Arrow installation device shown in (Fig. F). Please refer to the Enviro-Flo Installation Guide for detailed instructions.

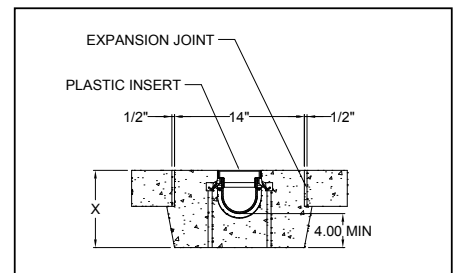
Installation Into Different Materials



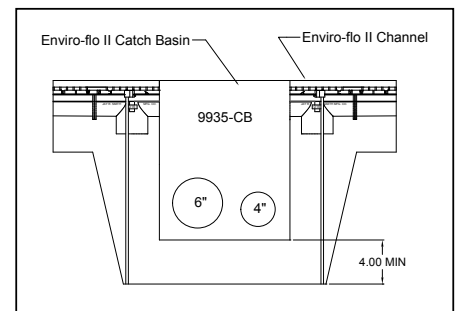
Installation in Concrete



Installation in Asphalt



Retrofit Installation



Catch Basin Bedding



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- Don Morris, President and CEO



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