

# Drainage Products Catalog

March 2011



Snap On to High Outlet Position

NDS

WWW.NDS-PRO.COM



**NDS**

WE PUT WATER IN ITS PLACE



Over 30 years ago, NDS began producing plastic drainage and landscape products. From the beginning, our commitment to quality and innovation has been unwavering, leading to remarkable state-of-the-art products that fit every environment, every schedule, every need.


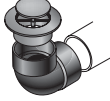


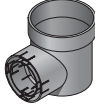



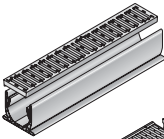
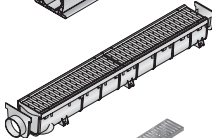
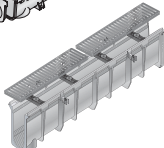
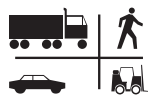
Today, our commitment to providing one-source solutions has led to the development of superior quality drainage products, landscape products, fittings, valve and meter boxes, and drip and micro irrigation products. No product is added to our line without meeting exhaustive testing and extensive research requirements. Plus, NDS is uniquely able to offer our complete inventory of products from regional warehouses in the US. Our goal: one-business-day delivery. Our track record: outstanding.

Take a moment to look through our catalog. If you have any questions contact Customer Service at 1-800-726-1994 from 5 a.m. to 5 p.m. PST. and let us offer the best solution for you.

To place an order, call 1-800-726-1994 from 5 a.m. to 5 p.m. PST.  
To order online at any time, 24/7 visit: [ndspro.net](http://ndspro.net).



# TABLE OF CONTENTS

	<b>SUB-SURFACE DRAINAGE</b>	<b>2-6</b>
	<b>POP-UP EMITTERS</b>	<b>8-9</b>
	<b>BRASS &amp; CHROME GRATES</b>	<b>10-12</b>
	<b>ROUND, ATRIUM &amp; SQUARE GRATES</b>	<b>13-16</b>
	<b>SPEE-D<sup>®</sup> BASINS</b>	<b>16</b>
	<b>CATCH BASINS &amp; GRATES</b>	<b>17-24</b>
	<b>CATCH BASIN UNIVERSAL OUTLETS</b>	<b>25-26</b>
	<b>DURACAST IN-LINE GRATES</b>	<b>26</b>
	<b>PROFILE CHANNEL DRAINS</b>	<b>27-32</b>
	<b>MODULAR PRO SERIES CHANNEL DRAINS</b>	<b>33-40</b>
	<b>DURA SLOPE PRE-SLOPED TRENCH DRAINS</b>	<b>41-47</b>
	<b>LOAD RECOMMENDATION GUIDE</b>	<b>48</b>
	<b>WARRANTY AND TERMS</b>	<b>Back Cover</b>

# EZFLOW<sup>®</sup> GRAVEL FREE FRENCH DRAIN SYSTEM



**EZflow**<sup>®</sup>  
Gravel Free French Drain System

**GRAVEL  
FREE  
INSTALLATION**

← **Poly-Rock™  
Lightweight  
Aggregate**

Perforated →  
Corrugated Pipe

Filter Fabric →



**50% or more  
Labor Savings**  
vs. Traditional Gravel Installations

- **Durable/Crushproof**  
See installation instructions
- **100-Year Lifespan**  
EZflow Poly-Rock™ aggregate stays intact
- **Green Build**  
Projects qualify for LEED® credits

# EZFLOW<sup>®</sup> GRAVEL FREE FRENCH DRAIN SYSTEM

EZflow<sup>®</sup> Gravel Free Drain by NDS are geosynthetic aggregate pipe systems for use in drainage applications. With aggregate manufactured from recycled polystyrene, EZflow<sup>®</sup> provides maximum system life and performance, lower system costs, and an environmentally-friendly alternative.

EZflow<sup>®</sup> drain sections are 10 feet in length, with a slotted pipe surrounded by polystyrene, aggregate and enclosed in geotextile mesh. 10ft sections with aggregate only (no pipe) are also available.

## EZFLOW<sup>®</sup> GRAVEL FREE FRENCH DRAIN

Part No.	Description	Color	Bundle Size/ Linear Feet	Wt. per Bundle (lbs.)	Product Class	Specifications
EZ-0701F	7" Mesh with 3" slotted pipe (center)	Black	90	32.4	11RP	NDS #EZ-0701F
EZ-0701A	7" Mesh without pipe - aggregate only	Black	90	18.0	11RP	and #EZ-1001F: 10ft
EZ-1001F	10" Mesh with 4" slotted pipe (center)	Black	50	29.5	11RP	polyethylene slotted
EZ-1001A	10" Mesh without pipe - aggregate only	Black	50	13.5	11RP	drainpipe surrounded by
EZ-1501F	15" Mesh with 6" slotted pipe (center)	Black	20	26.0	11RP	100% recycled polystyrene
EZ-1501FB	15" Mesh with 6" slotted pipe (bottom)	Black	20	26.0	11RP	aggregate and enclosed
EZ-1501A	15" Mesh without pipe - aggregate only	Black	20	12.4	11RP	in polyethylene geotextile
						mesh. NDS #EZ-0701A
						and #EZ-1001A: 10ft
						segment of 100% recycled
						polystyrene aggregate only,
						enclosed in polyethylene
						geotextile mesh.



## CORRUGATED FITTINGS

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
3C05	3" Corrugated Internal Coupling	Black	60/box	0.30	11RP
4C07	4" Corrugated Internal Coupling	Black	36/box	0.30	11RP
6C07	6" Corrugated Internal Coupling	Black	12/box	0.80	11RP
3C06	3" Corrugated End Cap	Black	33/box	0.30	11RP
4C06	4" Corrugated End Cap	Black	21/box	0.50	11RP
6C06	6" Corrugated End Cap	Black	15/box	0.50	11RP



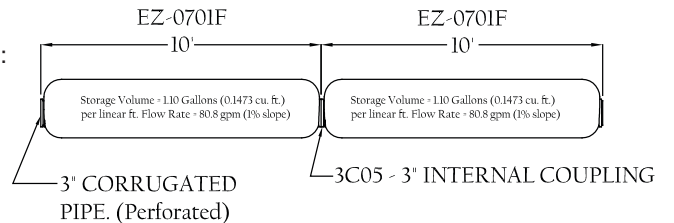
## EZFLOW<sup>®</sup> DISPLAY

Part No.	Description	Color	Pallet	Wt. Ea. (lbs.)	Product Class
EZFDISPLAY	EZflow Display with sign for distributors	N/A	60	0.30	99SD

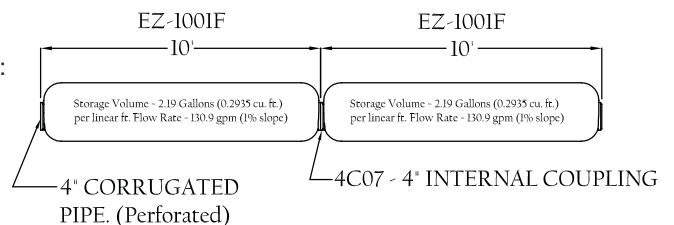


## EZFLOW<sup>®</sup> STORAGE VOLUME AND FLOW RATE

Volume and flow rate of EZ-0701F (3" slotted pipe):  
3C05-3" Internal Coupling  
Is used to connect 10 ft sections



Volume and flow rate of EZ-1001F (4" slotted pipe):  
4C07-4" Internal Coupling  
Is used to connect 10 ft sections

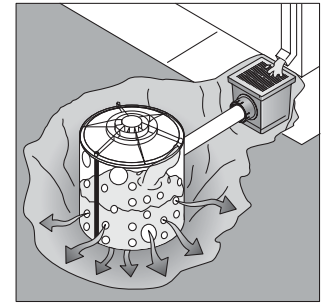


# FLO-WELL® STORM WATER LEACHING SYSTEM

## Flo-Well® Storm Water Leaching System

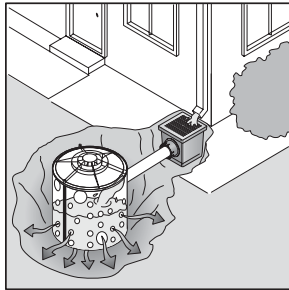
With the Flo-Well, water can now be discharged into the subsoil rapidly and easily. Unlike competitive systems, there is no need for piping systems to transport stormwater to a far-off discharge point, large heavy equipment, considerable excavation of current landscaped areas, nor large labor costs that those systems incur. With Flo-Well, water dispersion is now easier than ever.

Go to [www.NDSPRO.com](http://www.NDSPRO.com) for an easy to use online calculator that determines how many Flo-Well's are required to meet your drainage needs.

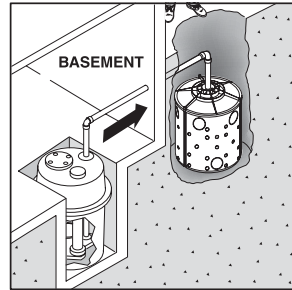


Discharge Stormwater into Subsoil

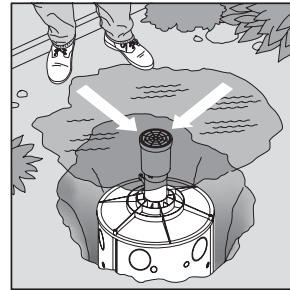
## Current Applications



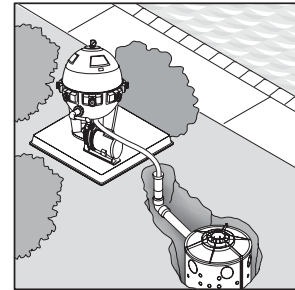
For gutters and downspouts



Install with sump pumps



Eliminates puddles



Backwash tank

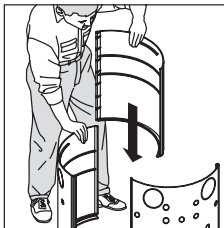
**Flo-Well should be placed at least 10 feet from a structure or foundation.**

Flo-Well should be piped to rain gutters using a 9" or 12" catch basin below each downspout outlet (see diagram above). Proper drainage can be visually monitored, assuring that leaves and debris have not clogged the downspout.

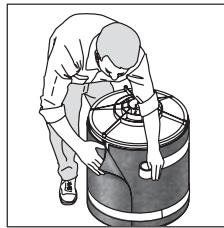
## Installation



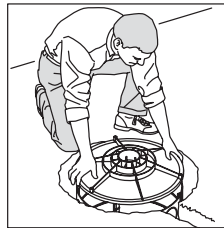
1 Knock out ports as needed from inside of panel



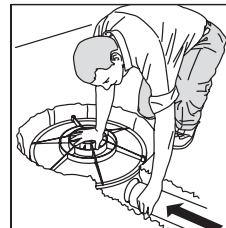
2 Slide panels together



3 Optional Filter Fabric to prevent sand and debris from entering Flo-Well



4 Place in ground and set top cover in place\*



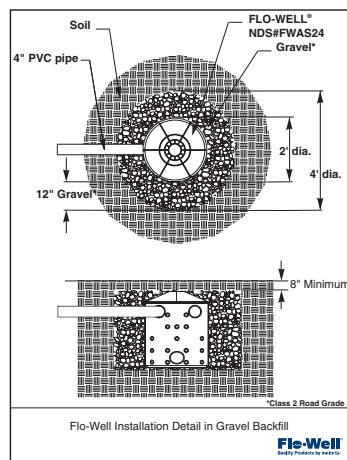
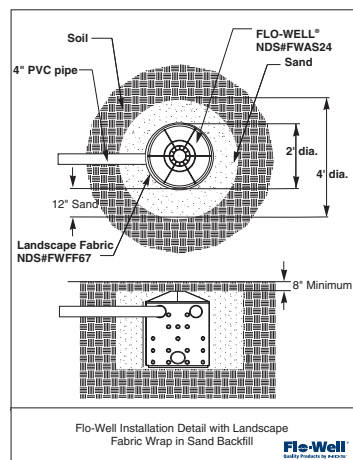
5 Install pipe or surface drain



6 Bury to minimum of 8 inches deep

*Installation Note: Location and number of ports removed will determine the rate and direction of leaching.*

*\* Add gravel around outside of Flo-Well unit to increase leaching capacity.*



# FLO-WELL® STORM WATER LEACHING SYSTEM

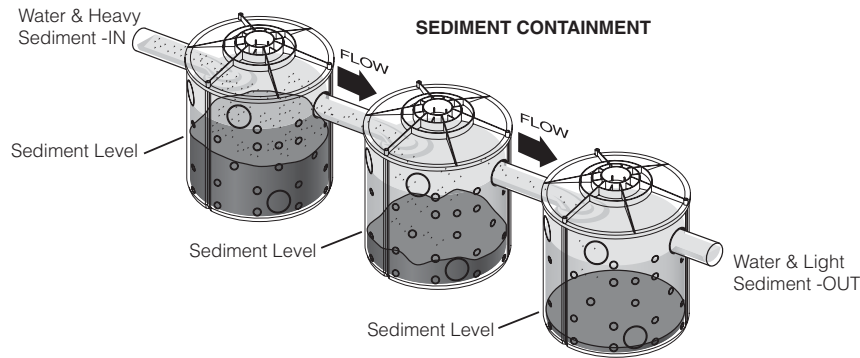
## Flo-Well® Solutions for stormwater retention and discharge elimination

New stormwater regulations extend to projects disturbing more than 1 acre and mandate stormwater retention and discharge elimination requirements for these projects. Regulations and permits now cover "any method of conveying surface water, including streets, gutters, ditches, swales, or any other manmade structure that alters and/or directs wet-weather flows." These regulations impact:

- Construction Site Runoff Control
- Post-construction Site Runoff Controls

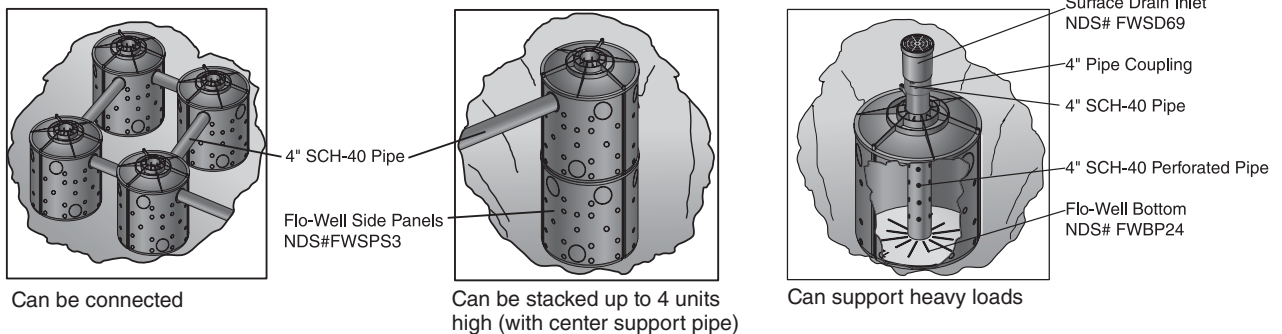
And NDS offers solutions for Best Management Practices (BMPs).

## Construction Site Runoff



## Post-Construction Site Runoff

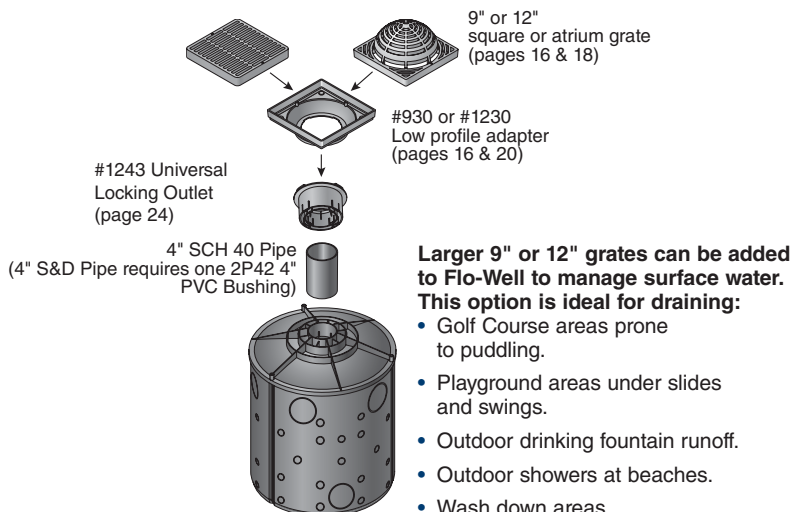
\*Consult local permitting authority for details



Flo-Well offers on-site solutions to retain stormwater and discharge it into the subsoil:

- Complies with new stormwater regulations.
- Installs without the need for heavy equipment.
- Cost effective solutions.
- Helps to replenish ground water table levels.

## Options



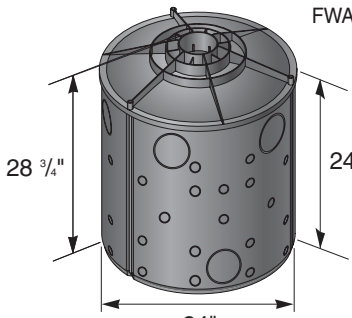
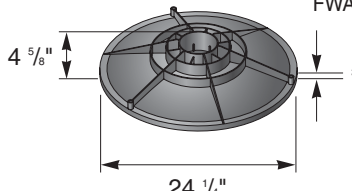
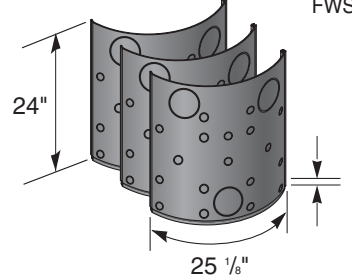
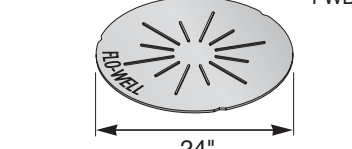
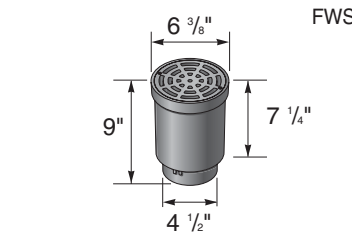
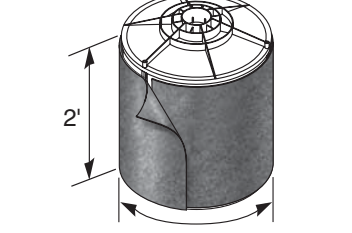
### Ideal as a stand-alone drain:

- Disturbs only 4 square feet of turf to install.
- Requires less than 10 cubic feet of soil removed to bury.
- Measures only 24" in diameter by 28.75" high.
- Weighs only 22 pounds.
- Holds over 48 gallons. Or, connect to existing system for increased drainage capabilities.

### Ideal as a stand-alone reservoir:

- Collect and hold rainwater for lawn and garden irrigation. (used with a pump connected to a garden hose).
- Connect Flo-Well to rain gutters using a catch basin & grate below each downspout (see drawing above).
- Ideal solution for arid areas impacted by drought.
- Reservoir for pond and waterfall recirculation pumps.

# FLO-WELL® STORM WATER LEACHING SYSTEM


	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	FWAS24	24" diam. x 28.75"H Flo-Well® Storm water leaching system  Includes 3 side panels, 1 Top Component  Fits 4" SCH-40 Pipe and 4" DWV Pipe	Black	1	25.15	10FW	NDS #FWAS24 structural foam polyolefin round drywell system with UV inhibitors. 24" dia., 28.75" high, 49 gal. with 18- 1.5" Knockout leaching ports and 3- 4.5" knockout inlet/outlet ports per panel.
	FWAS24C	24" diam. Flo-Well® Cover  Use with #FWAS24	Black	2	8.00	10FW	NDS#FWAS24C structural foam polyolefin round drywell system cover with UV inhibitors. 24 1/4" dia., 4 5/8" height, 3/4" outer lip, 4.5" center knockout fits NDS #FWAS24, NDS #FWSPS3.
	FWSPS3	Flo-Well® Side Panels/ Extension Only  Includes 3 side panels; makes 1 round drywell. Fits #FWAS24  (May also be used as a durable compost bin.)	Black	1	5.00	10FW	NDS #FWSPS3 structural foam polyolefin side panels with UV inhibitors with 18- 1 1/2" knockout leaching ports and 3- 4.5" knockout inlet/outlet ports per panel. 24" high with recessed .75" lip for firm stacking.
	FWBP24	24" diam. Flo-Well® Bottom  Fits #FWAS24	Black	5	3.50	34.58 10FW	NDS #FWBP24 structural foam polyolefin round Flo-Well® bottom with UV inhibitors. 24" diameter with six 1 1/2" leaching ports. 4.5" center knockout for strut coupling.
	FWSD69	4" SCH40 Surface Drain Inlet with Grate  Fits #FWAS24 and #FWAS24C  ADA Compliant	Black	8	1.85	10FW	NDS #FWSD69 structural foam polyolefin 6" grate with 4" inlet with UV inhibitors. 6" Diameter at inlet. 9" high. 4.5" OD fits Sch. 40 PVC fittings.
	FWFF67	Porous Filter Fabric Wrap for Flo-Well®  Use with #FWAS24	Black	20	0.35	10FW	7' long x 2' wide to surround Flo-Well® Drywell System. Non-woven fabric. Weight 1 oz. Mullen burst 175 psi. 200 GPM flow through.

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

To place an order, visit: [ndspro.net](http://ndspro.net), fax: 1-800-726-1998 or call 1-800-726-1994.



# NDS DRAINAGE SOLUTIONS



**Problem**  
Excess water damages foundations and basement walls

**Solution**  
**Catch Basin and Grates** removes waters from downspouts and away from foundations




**Problem**  
Water from driveway enters garage

**Solution**  
**Channel Drain and Grates** collects sheets of water moving across driveways and sidewalks



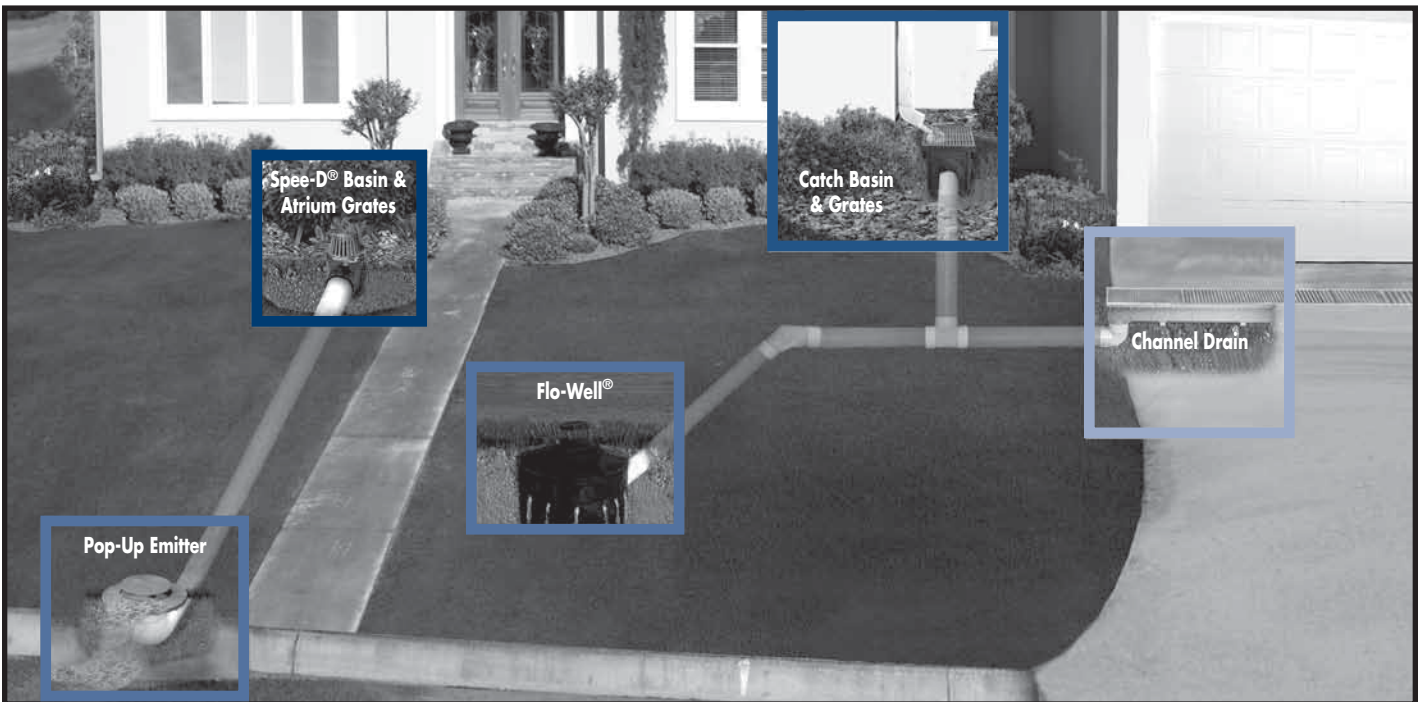
**Problem**  
Excess water harms plants

**Solution**  
**Spee-D® Basin and Atrium Grates** protects plants by removing excess waters from plants

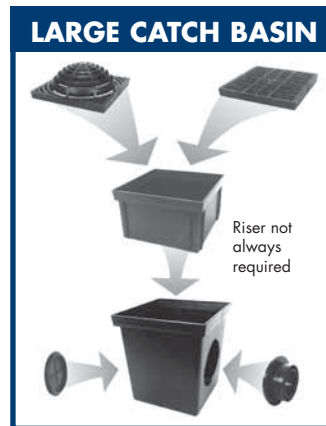


**Problem**  
Standing water ruins lawn

**Solution**  
**Flo-Well®** Standing water will be infiltrated back into the ground  
**Pop-up Emitters** Discharges water to a safe area without coring the curb



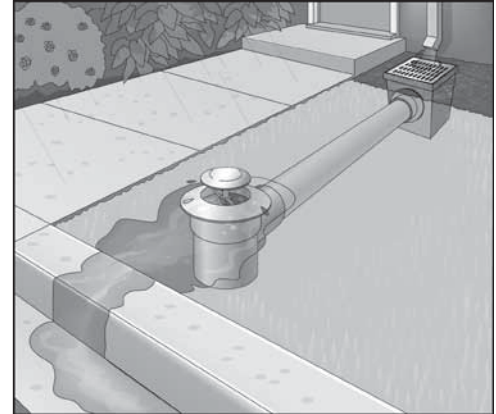
## NDS CATCH BASIN AND GRATES



# POP-UP DRAINAGE EMITTER

## The Pop-Up Drainage Emitter is easy, safe and an efficient solution.

- It allows water to be diverted and released to water-safe areas away from structures, erosion-prone landscapes and poor drainage areas.
- It allows water captured by grates, catch basins, channel drains, Flo-Well, downspouts and roof gutter systems to flow through the drainage pipe and away from structural foundations to safe or useful areas. For example, water can be routed from a low area next to a foundation to a water safe area such as a curbside drainage system.
- It is opened by the hydrostatic pressure of water flowing through the drain pipe. As flow diminishes the Emitter closes again. The special patented design allows the Emitter to open with a negligible amount of pressure. Since the Emitter is closed during dry weather, debris and rodents cannot enter the drain pipes.
- It does not rise high enough to interfere with mowers.
- Spring automatically retracts – closes and prevents damage from lawn mowers.
- It blends into the surrounding landscapes.



Allows water to flow to street without core drilling the curb.

## 3" & 4" POP-UP DRAINAGE EMITTER

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	420	3" & 4" Pop-Up Drainage Emitter	Green	20	0.28	10ND	NDS #420, 3" and 4" Polyolefin Pop-Up Drainage Emitter, Center Drive Pop-Up with UV inhibitor. 40 G.P.M.

Fits 3" and 4" hub Sewer and Drain Fittings  
Can now be installed in vertical applications - ideal for discharging water from retaining walls and street curbs. Spring automatically retracts.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	321	3" Emitter with Elbow	Green	25	0.60	10ND	NDS #321, 3" Polyolefin Pop-Up Drainage Emitter, Center Drive Pop-Up with UV inhibitor, PVC 90 degree elbow with 1/4" Drain hole. 40 G.P.M.

May be used with Flo-Well to relieve overflow.  
Can now be installed in vertical applications - ideal for discharging water from retaining walls and street curbs  
Spring automatically retracts - prevents damage from lawn mowers.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	421	4" Emitter with Elbow	Green	20	0.85	10ND	NDS #421, 4" Polyolefin Pop-Up Drainage Emitter, Center Drive Pop-Up with UV inhibitor, PVC 90 degree elbow with 1/4" Drain hole. 40 G.P.M.

May be used with Flo-Well to relieve overflow.  
Can now be installed in vertical applications - ideal for discharging water from retaining walls and street curbs  
Spring automatically retracts - prevents damage from lawn mowers.

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

# POP-UP DRAINAGE EMITTER

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
430	3" and 4" Pop-Up Drainage Emitter with Elbow and Universal Adapter	Green	20	1.00	10ND	NDS #430 4" Polyolefin Pop-Up Drainage Emitter, Center Drive Spring Loaded Pop-Up with UV inhibitor, PVC 90 degree elbow with 1/4" drain hole 40 G.P.M.
	Universal Adapter fits 3" and 4" corrugated pipe, 3" and 4" sewer and drain pipe, 4" SCH. 40 pipe, and 3" and 4" triple wall pipe.					
	Universal Adapter, part #1241, also sold separately. See page 24.					

## 6" POP-UP DRAINAGE EMITTER

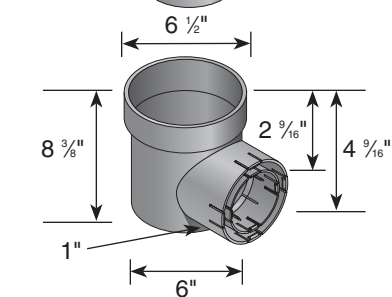
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
620	6" Pop-Up Drainage Emitter	Green	15	0.61	10ND	NDS #620 6" Polyolefin Pop-Up Drainage Emitter, Center Spring Loaded Drive Pop-Up with UV inhibitor. 100 G.P.M

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
624	6" Pop-Up Emitter with Elbow and Corrugated Pipe Adapter	Green	10	3.45	10ND	NDS #624 6" Polyolefin Pop-Up Drainage Emitter, Center Spring Loaded Drive Pop-Up with UV Inhibitor, PVC 90 degree elbow with 1/4" drain hole 100 G.P.M

Adapter fits 6" corrugated pipe.

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
625	6" Pop-Up Emitter with Spee-D® Basin	Green	8	2.21	10ND	NDS #625 6" Polyolefin Pop-Up Drainage Emitter, Center Spring Loaded Drive Pop-Up with UV Inhibitor, with 6" Spee-D® Basin. 100 G.P.M

Use with 3" or 4" Sewer & Drain Pipe, 3" or 4" Corrugated Pipe, 4" SCH 40 Pipe, and 3" & 4" Triple Wall Pipe.



Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

# BRASS AND CHROME GRATES

NDS is committed to providing the highest quality solutions for your drainage problems. We use the highest quality brass. Our brushed satin or polished finish is protected by a clear film that prevents damage to the finish during shipping and installation. Try this exciting concept in drain grates for your next installation where quality and aesthetics are a must!

## Strong-Practical-Functional

Our solid cast brass grates are secured to PVC collar with solid brass screws. The PVC collar can be solvent welded into sewer and drain fittings or pipe where permanent, anti-theft installation is desired. The grate can still be removed for easy clean-out.

- A unique mix of beauty and function.
- Recommended for highly-visible entry areas in hotels, malls, office buildings, country clubs and estates.
- Grates are removable from collars for easy clean-out.

## Details

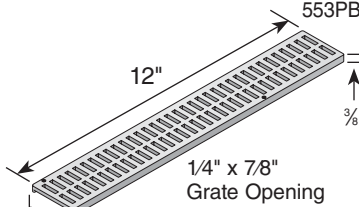
- Solid cast brass grates are secured to a PVC collar with solid brass screws for aesthetics and reliability.
- Collar can be solvent-welded onto sewer and drain fittings or pipes.
- Exceptional construction and fine finish also make these grates ideal for deck areas, walkways, swimming pools and spas.

## Materials and Standards

- Made with the highest-quality solid brass.
- Brushed Satin and Polished Chrome finishes are protected by a clear coat that prevents damage to the finish during shipping and installation.

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
552B	1 ft. Brass Channel Grate	Satin Brass	12	1.25	25PF	NDS #552B or #553PB, 1 foot Mini Channel Solid Brass Grate with brass screws. Open surface area 10.00 square inches per foot. 13.10 GPM per foot.
553PB	1 ft. Brass Channel Grate	Polished Brass	12	1.25	25PF	

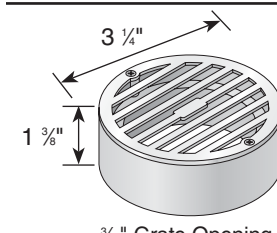
Fits #500 and #550 Mini Channels. (See page 30.)



(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
909B	3" Round Brass Grate w/PVC Collar	Satin Brass	20	0.40	15BR	NDS #909B or 905PB, 3" Round Solid Brass Grate and Brass screws with PVC collar. Open surface area 2.44 square inches. 3.20 GPM.
905PB	3" Round Brass Grate w/PVC Collar	Polished Brass	20	0.40	15BR	

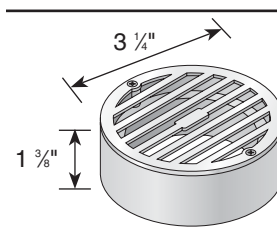
Fits 2" SCH-40 Pipe and 3" Sewer and Drain Fittings.



(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
915SC	3" Round Chrome Grate w/PVC Collar	Satin Chrome	20	0.40	15BR	NDS #915SC or #907PC, 3" Round Chrome Grate and screws with PVC collar. Open surface area 2.44 square inches. 3.20 GPM.
907PC	3" Round Chrome Grate w/PVC Collar	Polished Chrome	20	0.40	15BR	

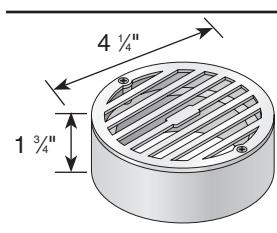
Fits 3" Sewer and Drain Fittings and 2" SCH-40 Pipe



(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
910B	4" Round Brass Grate w/PVC Collar	Satin Brass	20	0.70	15BR	NDS #910B or #906PB, 4" Round Solid Brass Grate and Brass screws with PVC collar. Open surface area 5.25 square inches. 6.88 GPM.
906PB	4" Round Brass Grate w/PVC Collar	Polished Brass	20	0.70	15BR	

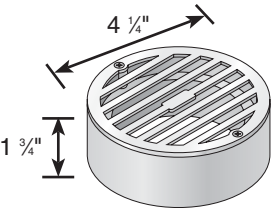
Fits 3" Sewer & Drain Pipe, 4" Sewer & Drain Fittings.

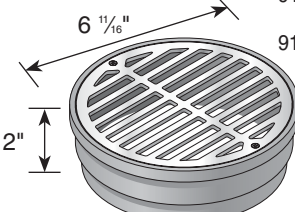


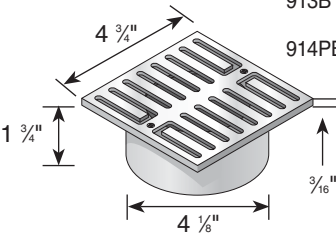
(See pg. 48) ADA Compliant/Heel-proof

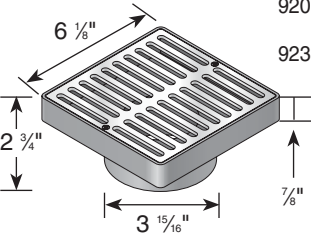
Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

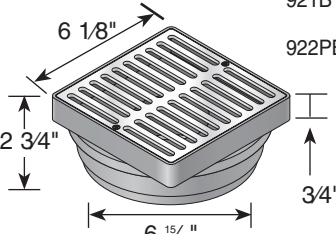
# BRASS AND CHROME GRATES

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
917SC	4" Round Chrome Grate w/PVC Collar	Satin Chrome	20	0.70	15BR	NDS #917SC or #908PC, 4" Round Chrome Grate and screws with PVC collar. Open surface area 5.25 square inches. 6.88 GPM.
908PC	4" Round Chrome Grate w/PVC Collar	Polished Chrome	20	0.70	15BR	
 <p>1 3/4" Height 4 1/4" Diameter 1/4" Grate Opening</p> <p>Fits 3" Sewer &amp; Drain Pipe, 4" Sewer &amp; Drain Fittings.</p> <p>(See pg. 48) ADA Compliant/Heel-proof</p>						

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
918B	6" Round Brass Grate w/Styrene Collar	Satin Brass	8	1.38	15BR	NDS #918B or #919PB, 6" Round Solid Brass Grate and Brass screws with styrene collar. Open surface area 13.15 square inches. 17.23 GPM.
919PB	6" Round Brass Grate w/Styrene Collar	Polished Brass	8	1.38	15BR	
 <p>2" Height 6 11/16" Diameter 3/8" Grate Opening</p> <p>Fits Spee-D® Basin, 6" Sewer &amp; Drain Fittings.</p> <p>(See pg. 48) ADA Compliant/Heel-proof</p>						

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
913B	5" Square Brass Grate w/Styrene Collar	Satin Brass	10	1.40	15BR	NDS #913B or #914PB, 5" Square Solid Brass Grate with brass screws and styrene collar. Open surface area 3.00 square inches. 3.93 GPM.
914PB	5" Square Brass Grate w/Styrene Collar	Polished Brass	10	1.40	15BR	
 <p>1 3/4" Height 4 3/4" Side Length 4 1/8" Base Width 3/16" Collar Height 3/8" Grate Opening</p> <p>Fits 4" Sewer and Drain Fittings, 3" Sewer and Drain Pipe and 3" Triple Wall Pipe.</p> <p>(See pg. 48) ADA Compliant/Heel-proof</p>						

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
920B	6" Square Brass Grate w/Styrene Adaptor	Satin Brass	8	1.88	15BR	NDS #920B or #923PB, 6" Square Solid Brass Grate with brass colored styrene low profile adaptor and brass screws. Open surface area 22.96 square inches. 30.08 GPM.
923PB	6" Square Brass Grate w/Styrene Adaptor	Polished Brass	8	1.88	15BR	
 <p>2 3/4" Height 6 1/8" Side Length 3 15/16" Base Width 7/8" Adaptor Height 3/8" Grate Opening</p> <p>Fits 3" or 4" Sewer and Drain Pipe or Fittings, 3" or 4" Corrugated Pipe and 3" or 4" Triple Wall Pipe.</p> <p>(See pg. 48) ADA Compliant/Heel-proof</p>						

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
921B	6" Square Brass Grate w/Styrene Adaptor	Satin Brass	8	1.88	15BR	NDS #921B or #922PB, 6" Square Solid Brass Grate with brass colored styrene low profile adaptor and brass screws. Open surface area 22.96 square inches. 30.08 GPM.
922PB	6" Square Brass Grate w/Styrene Adaptor	Polished Brass	8	1.88	15BR	
 <p>2 3/4" Height 6 1/8" Side Length 6 15/16" Base Width 3/4" Adaptor Height 3/8" Grate Opening</p> <p>Fits Spee-D® Basin, 6" Sewer and Drain Pipe &amp; Fittings.</p> <p>(See pg. 48) ADA Compliant/Heel-proof</p>						

# BRASS AND CHROME GRATES/ROUND GRATES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>012 1/4" x 12" x 1/2" height. 3/8" Grate Opening. (See pg. 48) ADA Compliant</p>	1214	12"x 12" Square Grate	Manganese Bronze	1	6.87	10ND	NDS #1214, 12" Square Manganese Bronze Grate and Frame. Open surface area 55.35 square inches. 72.50 GPM.
	Use with 12"x12" Catch Basin Series. Screws in tab on the frame, will secure the frame to the outside edge of 12" x 12" catch Basin Adapter. Note: <b>(Frame must be attached to catch basin before backfilling or encasing in concrete.)</b>						

	Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
<p>4 7/16" diameter, 2 3/4" width, 1 7/8" height. 1/4" Grate Openings.</p>	78B	4" Atrium Brass Grate	Brass	1	15BR	Open surface area 170 square inches. 22.27 GPM.

	Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
<p>5 3/4" diameter, 3 7/8" width, 2 13/16" height. 1/4" Grate Openings.</p>	90B	6" Atrium Brass Grate	Brass	1	15BR	Open surface area 28.40 square inches. 37.20 GPM.

	Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
<p>8 7/8" side, 1 1/8" height. 7/16" Grate Opening. (See pg. 48) ADA Compliant</p>	930B	9" Square Brass Grate	Brass	1	15BR	Open surface area 39.50 square inches. 51.75 GPM.

	Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
<p>11 3/4" side, 1 1/8" height. 3/8" Grate Opening. (See pg. 48) ADA Compliant</p>	1230B	12" Square Brass Grate	Brass	1	15BR	Open surface area 50.76 square inches. 77.95 GPM.

## ROUND GRATES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>3" diameter, 1 5/8" height. 3/16" Grate Opening. (See pg. 48) ADA Compliant/Heel-proof</p>	14	3" Round Grate	Black	40	0.15	10ND	Fits 3" Sewer and Drain Pipe & Fittings, 3" Corrugated Pipe and 3" Triple Wall Pipe.
	15	3" Round Grate	Gray	40	0.15	10ND	
	16	3" Round Grate	Green	40	0.15	10ND	
	16S	3" Round Grate	Sand	40	0.15	10ND	
	NDS #14, #15, #16, or #16S, 3" Round Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 2.60 square inches. 3.41 GPM.						

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>4 5/8" diameter, 1 1/2" height, 3 15/16" width. 1/4" Grate Opening. (See pg. 48) ADA Compliant/Heel-proof</p>	11	4" Round Grate	Black	25	0.20	10ND	Fits 4" Sewer and Drain Pipe & Fittings, 4" Corrugated Pipe, and 4" Triple Wall Pipe.
	12	4" Round Grate	Gray	25	0.20	10ND	
	13	4" Round Grate	Green	25	0.20	10ND	
	13S	4" Round Grate	Sand	25	0.20	10ND	
	NDS #11, #12, #13, or #13S, 4" Round Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 3.85 square inches. 5.04 GPM.						

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

# ROUND GRATES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>6 3/4" 2 3/8" 5 3/4" 1/4" Grate Opening</p>	40	6" Round Grate	Black	10	0.80	10ND	Fits Spee-D® Basin, 6" Sewer and Drain Pipe and Fittings and 6" Corrugated Pipe. (See pg. 48) ADA Compliant/Heel-proof
	50	6" Round Grate	Green	10	0.80	10ND	
	60	6" Round Grate	Gray	10	0.80	10ND	
	60S	6" Round Grate	Sand	10	0.80	10ND	

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>7 3/4" 2 1/2" 5 3/4" 5/16" Grate Opening</p>	10	8" Round Grate	Black	10	0.80	10ND	Fits Spee-D® Basin, 6" Sewer and Drain Pipe and Fittings and 6" Corrugated Pipe. (See pg. 48) ADA Compliant
	20	8" Round Grate	Green	10	0.80	10ND	
	30	8" Round Grate	Gray	10	0.80	10ND	
	30S	8" Round Grate	Sand	10	0.80	10ND	

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>9 3/4" 2 3/4" 7 3/4" 5/16" Grate Opening</p>	1040	10" Round Grate	Black	10	1.50	10ND	Fits 8" Sewer and Drain Pipe and Fittings, 8" Corrugated Pipe. (See pg. 48) ADA Compliant
	1050	10" Round Grate	Green	10	1.50	10ND	
	1060	10" Round Grate	Gray	10	1.50	10ND	
	1060S	10" Round Grate	Sand	10	1.50	10ND	

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>14 3/16" 3 5/8" 11 5/8" 11 3/4" 9/16" Grate Opening</p>	1240	12" Round Grate	Black	6	3.35	10ND	Fits 12" Sewer and Drain Pipe, 12" Corrugated Pipe. (See pg. 48)
	1250	12" Round Grate	Green	6	3.35	10ND	
	1260	12" Round Grate	Gray	6	3.35	10ND	

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>17" 4 1/2" 14 7/8" 1 1/4" Grate Opening</p>	1511	15" Round Grate	Black	1	6.15	10ND	Fits 15" Sewer and Drain Pipe and Fittings, 15" Corrugated Pipe. (See pg. 48)
	1512	15" Round Grate	Green	1	6.15	10ND	

# ATRIUM GRATES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>2 7/8" 1 3/8" 2 3/8" 1 1/4" 1/4" Grate Openings</p>	270	2" Atrium Grate Fits 2" Schedule 40 Fittings.	Gray	20	0.10	10ND	NDS #270, Flat Top Structural Form Polyolefin Atrium Grate with UV inhibitor. Open surface area 4.00 square inches. 5.24 GPM.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>3 11/16" 2 1/4" 2 7/8" 1 23/32" 1/4" Grate Openings</p>	70	3" Atrium Grate	Green	20	0.25	10ND	NDS #70, #72, #74, #74S, Flat Top Structural Foam Polyolefin Atrium Grate with UV inhibitor. Open surface area 9.40 square inches. 12.31 GPM.
	72	3" Atrium Grate	Gray	20	0.25	10ND	
	74	3" Atrium Grate	Black	20	0.25	10ND	
	74S	3" Atrium Grate	Sand	20	0.25	10ND	
			Fits 3" Sewer and Drain Pipe and Fittings, 3" Corrugated Pipe and 3" Triple Wall Pipe.				

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>4 7/16" 2 3/4" 4 3/16" 1 7/8" 1/4" Grate Openings</p>	75	4" Atrium Grate	Green	20	0.30	10ND	NDS #75, #76, #78, or #78S, Flat Top Structural Foam Polyolefin Atrium Grate with UV inhibitor. Open surface area 17.00 square inches. 22.27 GPM.
	76	4" Atrium Grate	Gray	20	0.30	10ND	
	78	4" Atrium Grate	Black	20	0.30	10ND	
	78S	4" Atrium Grate	Sand	20	0.3	10ND	
			Fits 4" Sewer and Drain Pipe and Fittings, 4" Corrugated Pipe and 4" Triple Wall Pipe.				

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
<p>5 3/4" 3 7/8" 5 3/4" 2 13/16" 1/4" Grate Openings</p>	80	6" Atrium Grate	Green	10	0.70	10ND	NDS #80, #81, #90, or #90S, Flat Top Structural Foam Polyolefin Atrium Grate with UV inhibitor. Open surface area 28.40 square inches. 37.20 GPM.
	81	6" Atrium Grate	Gray	10	0.70	10ND	
	90	6" Atrium Grate	Black	10	0.70	10ND	
	90S	6" Atrium Grate	Sand	10	0.70	10ND	
			Fits Spee-D <sup>®</sup> Basin, 6" Sewer and Drain Pipe and Fittings, 6" Corrugated Pipe.				

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.



# SQUARE GRATES

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1	4" Square Grate	Green	40	0.11	10ND	NDS #1, #2, #3, 4" Square Structural Foam Polyolefin Grate with diagonally converging pattern with UV inhibitor. Open surface area 3.45 square inches. 4.52 GPM.
2	4" Square Grate	Black	40	0.11	10ND	
3	4" Square Grate	Gray	40	0.11	10ND	

Fits 3" Sewer and Drain Pipe and Fittings, 3" Corrugated Pipe and 3" Triple Wall Pipe.

3 5/16" Side Length  
1 5/16" Height  
3" Opening  
3/16" Grate Opening

(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
7	5" Square Grate	Green	25	0.20	10ND	NDS #7, #8, #9, or #09S, 5" Square Structural Foam Polyolefin Grate with diagonally converging pattern with UV inhibitor. Open surface area 4.25 square inches. 5.57 GPM.
8	5" Square Grate	Black	25	0.20	10ND	
9	5" Square Grate	Gray	25	0.20	10ND	

Fits 4" Sewer and Drain Pipe and Fittings, 4" Corrugated Pipe and 4" Triple Wall Pipe.

4 9/16" Side Length  
1 13/16" Height  
3 15/16" Opening  
3/16" Grate Opening

(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
4	6" Square Grate	Black	10	0.40	10ND	NDS #04, #05, #06, or #06S, 6" Square Structural Foam Polyolefin Grate with diagonally converging pattern with UV inhibitor. Open surface area 10.40 square inches. 13.62 GPM.
5	6" Square Grate	Green	10	0.40	10ND	
6	6" Square Grate	Gray	10	0.40	10ND	
06S	6" Square Grate	Sand	10	0.40	10ND	

Fits 3" or 4" Sewer and Drain Pipe, 3" or 4" Corrugated Pipe and 3" or 4" Triple Wall Pipe.

5 7/8" Side Length  
2" Height  
3 7/8" Opening  
1/4" Grate Opening

(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
640	6" x 6" x 4" Sq Grate & Adapter	Black	8	0.88	10ND	NDS #640, #641, #642, 6"x6" Low Profile Adapter and Structural Foam Polyolefin Removable Grate with UV inhibitor and stainless steel screws. Open surface area 13.61 square inches. 17.83 GPM.
641	6" x 6" x 4" Sq Grate & Adapter	Green	8	0.88	10ND	
642	6" x 6" x 4" Sq Grate & Adapter	Gray	8	0.88	10ND	

Fits 3" or 4" Sewer and Drain Pipe and Fittings, 3" or 4" Corrugated Pipe and 3" or 4" Triple Wall Pipe.

5 7/8" Grate Side Length  
6 3/16" Grate Side Length  
3 15/16" Adapter Side Length  
1 1/2" Adapter Height  
1/4" Grate Opening

(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
637	6" x 6" x 6" Sq Grate & Adapter	Black	8	0.88	10ND	NDS #637, #638, #639 6"x6" Low Profile Adapter and Structural Foam Polyolefin Removable Grate with UV inhibitor and stainless steel screws. Open surface area 13.61 square inches. 17.83 GPM.
638	6" x 6" x 6" Sq Grate & Adapter	Green	8	0.88	10ND	
639	6" x 6" x 6" Sq Grate & Adapter	Grey	8	0.88	10ND	

Fits Spee-D® Basin, 6" Sewer & Drain Pipe and Fittings.

5 7/8" Grate Side Length  
6 3/16" Grate Side Length  
6 9/16" Adapter Side Length  
2" Adapter Height  
1/4" Grate Opening

(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
637	6" x 6" x 6" Sq Grate & Adapter	Black	8	0.88	10ND	NDS #637, #638, #639 6"x6" Low Profile Adapter and Structural Foam Polyolefin Removable Grate with UV inhibitor and stainless steel screws. Open surface area 13.61 square inches. 17.83 GPM.
638	6" x 6" x 6" Sq Grate & Adapter	Green	8	0.88	10ND	
639	6" x 6" x 6" Sq Grate & Adapter	Grey	8	0.88	10ND	

Fits Spee-D® Basin, 6" Sewer & Drain Pipe and Fittings.

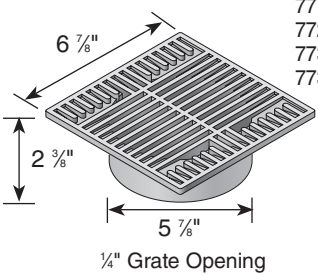
5 7/8" Grate Side Length  
6 3/16" Grate Side Length  
6 9/16" Adapter Side Length  
2" Adapter Height  
1/4" Grate Opening

(See pg. 48) ADA Compliant/Heel-proof


# SQUARE GRATES/SPEE-D<sup>®</sup> BASINS

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
771	7" Square Grate	Black	10	0.70	10ND	NDS #771, #772, #773, or #773S, 7" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 13.60 square inches. 17.83 GPM.
772	7" Square Grate	Green	10	0.70	10ND	
773	7" Square Grate	Gray	10	0.7	10ND	
773S	7" Square Grate	Sand	10	0.7	10ND	

Fits Spee-D<sup>®</sup> Basin, 6" Sewer and Drain Pipe and Fittings, 6" Corrugated Pipe.



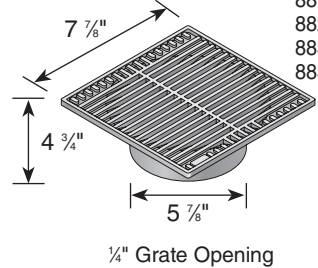
1/4" Grate Opening




(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
881	8" Square Grate	Black	10	0.80	10ND	NDS #881, #882, #883, or #883S, 8" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 17.16 square inches. 22.48 GPM.
882	8" Square Grate	Green	10	0.8	10ND	
883	8" Square Grate	Gray	10	0.80	10ND	
883S	8" Square Grate	Sand	10	0.80	10ND	

Fits Spee-D<sup>®</sup> Basin, 6" Sewer and Drain Pipe and Fittings, 6" Corrugated Pipe and DWV Pipe.



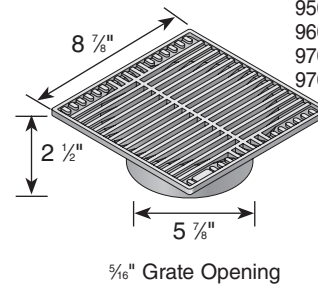
1/4" Grate Opening




(See pg. 48) ADA Compliant/Heel-proof

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
950	9" Square Grate	Green	10	1.90	10ND	NDS #950, #960, #970, #970S, 9" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 28.40 square inches. 37.20 GPM.
960	9" Square Grate	Gray	10	1.90	10ND	
970	9" Square Grate	Black	10	1.90	10ND	
970S	9" Square Grate	Sand	10	1.90	10ND	

Fits Spee-D<sup>®</sup> Basin, 6" Sewer and Drain Pipe and Fittings, 6" Corrugated Pipe.



5/16" Grate Opening

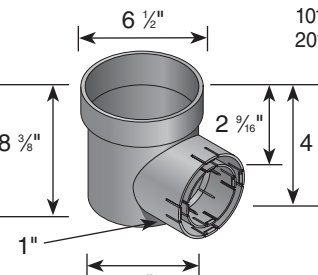
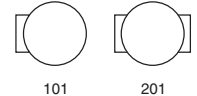


(See pg. 48) ADA Compliant

## SPEE-D<sup>®</sup> BASINS

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
101	1 - 3" and 4" Locking Outlet *	Black	10	1.60	10ND	NDS #101 and #201 with locking outlet #250, #300, or #350, 6" Spee-D <sup>®</sup> Catch Basin. Patent #D402,013.
201	2 - 3" and 4" Locking Outlets *	Black	10	1.90	10ND	

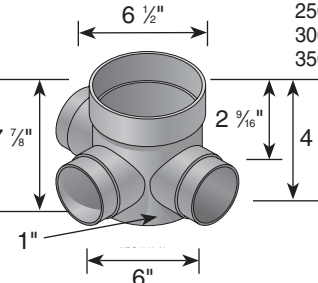
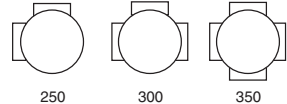
#101, #201 Outlets fit 3" or 4" Sewer & Drain Pipe, 3" or 4" Corrugated Pipe. #101 Outlet also fits 4" SCH 40 and 3" & 4" Triple Wall Pipe. Use NDS #66 as Riser for all 6" round catch basins (see S&D fitting price catalog). \*New Locking Outlet snaps on to most 3" and 4" corrugated pipe.

101 201

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
250	2 - 3" and 4" 90° Outlets	Black	12	1.92	10ND	NDS #101 and #201 with locking outlet #250, #300, or #350, 6" Spee-D <sup>®</sup> Catch Basin.
300	3 - 3" and 4" Outlets	Black	12	1.92	10ND	
350	4 - 3" and 4" Outlets	Black	12	2.25	10ND	

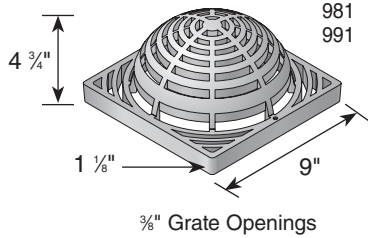
#250, #300, #350 Outlets fit 4" Sewer & Drain Pipe, 3" and 4" Corrugated Pipe and DWV Pipe, 4" SCH 40 Pipe, 4" Sewer and Drain Fittings. Use NDS #66 as Riser for all 6" round catch basins (see S&D fitting price catalog).

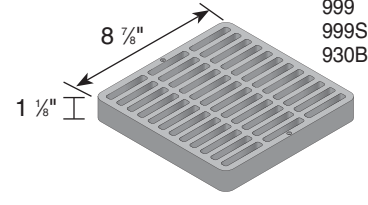



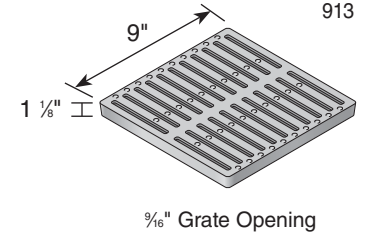

250 300 350

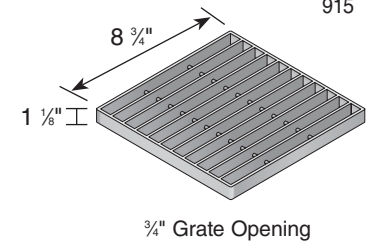

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

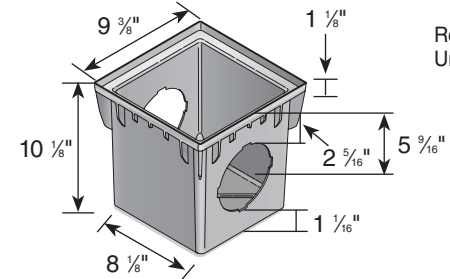
# 9" CATCH BASIN SERIES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	981	9" x 9" Atrium Grate	Black	6	0.87	10ND	NDS #981, #991, 9" Structural Foam Polyolefin Dome Atrium Grate with UV inhibitor. Open surface area 31.50 square inches. 41.27 GPM.
	991	9" x 9" Atrium Grate	Green	6	0.87	10ND	
Use with 9"x9" Catch Basin Series.							

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	980	9" Square Grate	Black	8	1.50	10ND	NDS #980, #990, #999, or #999S, #930B, 9" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 39.50 square inches. 51.75 GPM.
	990	9" Square Grate	Green	8	1.50	10ND	
	999	9" Square Grate	Gray	8	1.50	10ND	
	999S	9" Square Grate	Sand	8	1.50	10ND	
	930B	9" Square Grate	Brass	1	5.51	15BR	
Use with 9"x9" Catch Basin Series.							
NDS #980, 990, 999 999S: Class A Load Rated. ADA Compliant NDS #930B: Class B Load Rated. ADA Compliant							

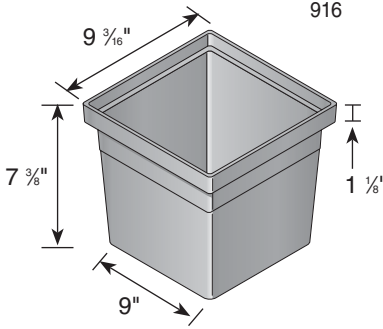
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	913	9" Square Cast Iron Grate	Black	4	8.40	10ND	NDS #913, 9" Square Heavy Duty Cast Iron Grate. Open surface area 35.70 square inches. 46.77 GPM.
	Use with 9"x9" Catch Basin Series.						
 (See pg. 48)							

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	915	9" Square Galvanized Steel Grate	Galvanized Steel	4	4.23	10ND	NDS #915, 9" Square Heavy Duty Galvanized Steel Bar Grate. Open surface area 65.00 square inches. 85.15 GPM.
	Use with 9"x9" Catch Basin Series.						
 (See pg. 48)							

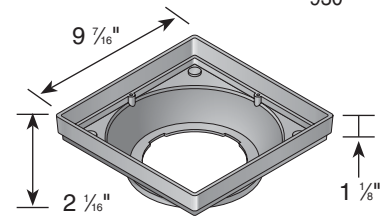
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	900	9" x 9" Catch Basin 2-opening	Black	4	3.00	10ND	NDS #900, or #900-4, 9" x 9" Tapered Catch Basin.
	900-4	9" x 9" Catch Basin 4-opening	Black	4	2.00	10ND	
Requires either #1206, #1242, #1243, #1245 or #1266 Universal Outlet for each Opening. (See page 24.)							

# 9" CATCH BASIN SERIES

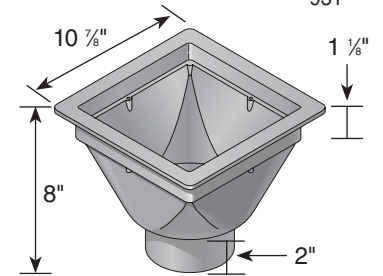
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
916	9" x 9" Catch Basin Riser (No Bottom)  Use with 9" x 9" Catch Basin Series.	Black	4	1.75	10ND	NDS #916, 6" Riser for 9" x 9" Catch Basin.



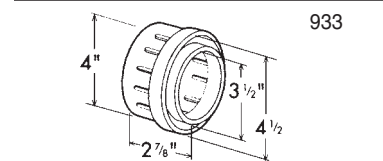
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
930	9" x 9" Low Profile Adapter  Fits Corrugated, Sewer and Drain Pipe. Requires NDS #1243, #1245, #1266 or #1889 Universal Outlets. (See page 25.)	Black	8	0.75	10ND	NDS #930, 9"x9" Low Profile Adapter with Bayonet Bottom Outlet.



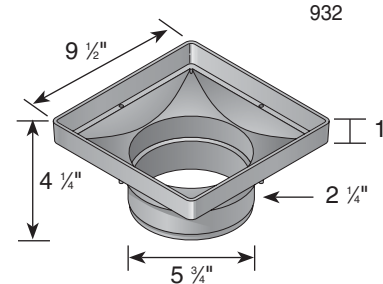
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
931	9" x 9" Deep Housing Spigot Adapter  Fits 4" Corrugated Pipe. Use #933 to adapt to 4" Sewer and Drain Pipe.	Black	10	2.4	10ND	NDS #931, 9"x9" Square Deep Housing Spigot Adapter.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
933	Adapter Bushing  Fits 4" Sewer and Drain Pipe. Use Housing Adapter Bushing with #931.	Black	20	0.3	10ND	



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
932	9" x 9" Low Profile Housing Adapter  Fits 6" Spee-D® Basin and 6" Sewer and Drain Pipe and Fittings.	Black	8	1.13	10ND	NDS #932, 9"x9" Square Low Profile Housing Adapter with 6" Outlet.



Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

# 12" CATCH BASIN SERIES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1280	12" x 12" Atrium Grate	Green	8	2.00	10ND	NDS #1280, #1290, 12" Structural Foam Polyolefin Dome Atrium Grate with UV inhibitor. Open surface area 50.60 square inches. 66.29 GPM.
	1290	12" x 12" Atrium Grate	Black	8	2.0	10ND	
		Use with 12" x 12" Catch Basin Series.					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1210	12" x 12" Square Grate	Gray	8	2.00	10ND	NDS #1210, #1211, #1212, or #1212S, 12" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 50.76 square inches. 66.50 GPM.
	1211	12" x 12" Square Grate	Black	8	2.00	10ND	
	1212	12" x 12" Square Grate	Green	8	2.00	10ND	
	1212S	12" x 12" Square Grate	Sand	8	2.00	10ND	
		Use with 12" x 12" Catch Basin Series.					
		(See pg. 48) ADA Compliant					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1213	12" x 12" Square Cast Iron Grate	Black	1	15.00	10ND	NDS #1213, 12" Square Heavy Duty Cast Iron Grate. Open surface area 59.50 square inches. 77.95 GPM.
		Use with 12" x 12" Catch Basin Series.					
		(See pg. 48) ADA Compliant					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1215	12" x 12" Square Galvanized Steel Grate	Galvanized Steel	1	8.90	10ND	NDS #1215, 12" Square Heavy Duty Galvanized Steel Bar Grate. Open surface area 122.30 square inches. 160.21 GPM.
		Use with 12" x 12" Catch Basin Series.					
		(See pg. 48)					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1214	12" x 12" Square Grate	Manganese Bronze	1	9.00	10ND	NDS #1214, 12" Square Manganese Bronze Grate and Frame. Open surface area 36.75 square inches. 48.14 GPM.
		Use with 12" x 12" Catch Basin Series. Screws in tabs on the frame, will secure the frame to the outside edge of 12" x 12" catch Basin Adapter. Note: <b>(Frame must be attached to catch basin before backfilling or encasing in concrete.)</b>					
		(See pg. 48) ADA Compliant					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1220	12" x 12" Sump Box Cover	Black	8	2.00	10ND	NDS #1220, 12" Square Structural Foam Polyolefin Solid Cover.
		Use with NDS 12" x 12" Catch Basin Series and NDS #1219 Backwater Valve Box.					

# 12" CATCH BASIN SERIES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1200NGBDISPLAY	Distributor display with 8 1200NGBKITs	Black	8	47.20	10ND	NDS #1200NGB is made out of polyolefin, NDS #1207 and #1208 are made out of styrene
	1200NGBKIT	12" x 12" Catch Basin, 2 Open Slides	Black	4	4.65	10ND	
	1200NGB	12" x 12" Catch Basin	Black	4	3.45	10ND	
	1207	Open Slide for 1200NGB	Black	8	.60	10ND	
	1208	Plug Slide for 1200NGB	Black	8	.76	10ND	

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1200BLKIT	12" x 12" Catch Basin, 2 Open Sides	Black	4	7.59	10ND	NDS #1200, #1203, or #1204, 12" x 12" Tapered Catch Basin.
	1200	12" x 12" Catch Basin, 2 Openings	Black	4	4.25	10ND	
	1203	12" x 12" Catch Basin, 3 Openings	Black	4	3.75	10ND	
	1204	12" x 12" Catch Basin, 4 Openings	Black	4	3.75	10ND	
	Requires either #1206, #1242, #1243, #1245, #1266 or #1889 Universal Outlet for each opening. (Use bottom cutout for additional outlet. See page 24.)						

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1216	12" x 12" Catch Basin Riser (No Bottom)	Black	8	2.75	10ND	NDS #1216, 6" Riser for 12" Catch Basin.
	Use with 12"x12" Catch Basin Series.						

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1217	12" x 12" Riser with 2 openings	Black	4	4.0	10ND	NDS #1217, 12" Riser with Two Openings.
	Nests on top of 12" catch basin series for shallow outlets and 12" sump box for more sump area. Requires either #1206, #1242, #1243, #1245, #1266 or #1889 Universal Outlet for each opening. (See page 24.)						

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1225	12" x 12" Sump Box	Black	4	6.75	10ND	NDS #1225, one piece 12" Sump Box.
	Use with 12" x 12" Grate or #1220 Valve Box Cover.						

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.


# 12" CATCH BASIN SERIES/18" CATCH BASIN SERIES


Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1230	12" x 12" Low Profile Adapter	Black	8	1.25	10ND	NDS #1230, 12" x 12" Low Profile Adapter with Bayonet Bottom Outlet.
	Requires either #1243, #1245, #1266 or #1889 Universal Outlet for connection to 3", 4", or 6" Sewer and Drain or Corrugated Pipe. (See page 24.)					

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1221	12" x 12" Square, Low Profile Adapter	Black	12	1.92	10ND	NDS #1221, or #1222, 12" x 12" Low Profile Adapter.
	Fits 8" Sewer and Drain Pipe.					
1222	12" x 12" Square, Low Profile Spigot Adapter	Black	12	1.92	10ND	Fits 8" Corrugated Pipe.

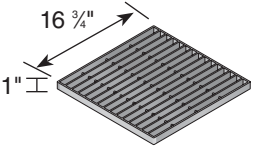
## 18" CATCH BASIN SERIES

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1881	18" x 18" Atrium Grate	Black	2	3.50	10ND	NDS #1881, #1891, 18" Structural Foam Polyolefin Dome Atrium Grate with UV inhibitor. Open surface area 89.40 square inches. 117.11 GPM.
1891	18" x 18" Atrium Grate	Green	2	3.50	10ND	
	Use with 18" x 18" Catch Basin Series.					

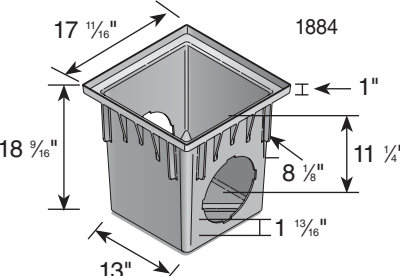
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1810	18" x 18" Square Grate	Gray	4	5.50	10ND	NDS #1810, #1811, #1812, 18" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 104.00 square inches. 136.24 GPM.
1811	18" x 18" Square Grate	Black	4	5.50	10ND	
1812	18" x 18" Square Grate	Green	4	5.50	10ND	
	Use with 18" x 18" Catch Basin Series.					
	 (See pg. 48) ADA Compliant					

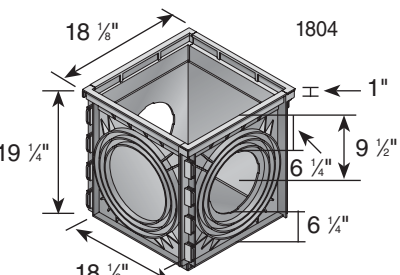
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1813	18" x 18" Cast Iron Square Grate	Black	1	35.00	10ND	NDS #1813, 18" Square Heavy Duty Cast Iron Grate. Open surface area 100.63 square inches. 131.83 GPM. H-20 Load Rating.
	Use with 18" x 18" Catch Basin Series.					
	 (See pg. 48)					

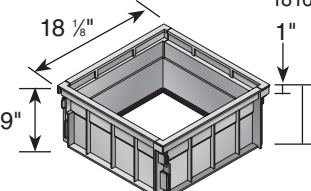
# 18" CATCH BASIN SERIES

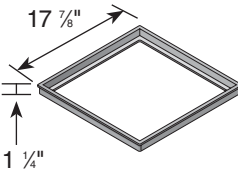
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>1" Grate Openings</p>	1815	18" Square Galvanized Steel Grate	Galvanized Steel	1	17.00	10ND	NDS #1815, 18" Square Heavy Duty Galvanized Steel Bar Grate. Open surface area 291.00 square inches. 381.21 GPM.
		Use with 18"x18" Catch Basin Series.					



	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1882	18" One Piece Catch Basin 2 Opening	Black	1	10.00	10ND	NDS #1882, #1884, 18" x 18" One-Piece Tapered Catch Basin.
	1884	18" One Piece Catch Basin 4 Opening	Black	1	9.50	10ND	

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1800	18" x 18" Expandable Catch Basin 2 opening*	Black	1	16.00	10ND	NDS #1800, #1804, 18" x 18" Modular Catch Basin with Locking Tabs.
	1804	18" x 18" Expandable Catch Basin 4 opening*	Black	1	16.00	10ND	

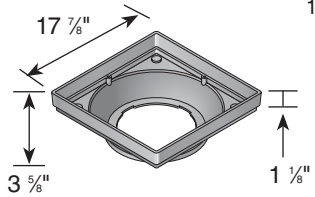
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>7 7/8" Nesting height</p>	1816	8" Riser for 18" Catch Basin	Black	1	6.00	10ND	NDS #1816, 6" Riser for 18" x 18" Catch Basin. Riser package includes 4 sides. Use with #1800, #1804, #1882, or #1884.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1840	Frame to adapt 18" x 18" grate to concrete catch basin	Black	4	2.00	10ND	NDS #1840, 18" x 18" Frame. Use with 18" x 18" Grates on pages 20 and 21.

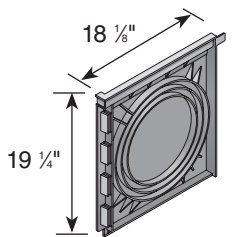
Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

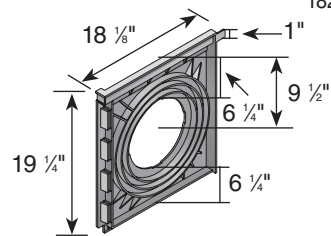


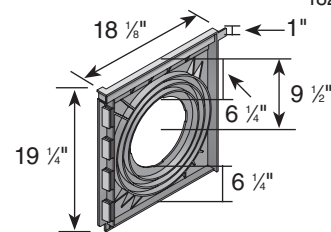
# 18" CATCH BASIN SERIES

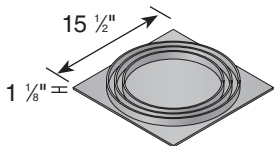
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1830	18" x 18" Low Profile Adapter	Black	4	4.75	10ND	NDS #1830, 18" x 18" Low Profile Adapter with Bayonet Bottom Outlet.
		Includes NDS #1890 Reducer Ring. Requires either a NDS #1243, #1245, #1266, or #1888 Universal Outlet. (See page 24.) Fits Corrugated Pipe and Sewer and Drain Pipe.					

## 18" COMPONENT PARTS

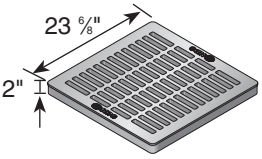

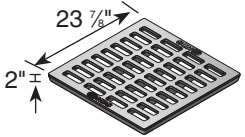
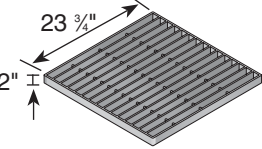
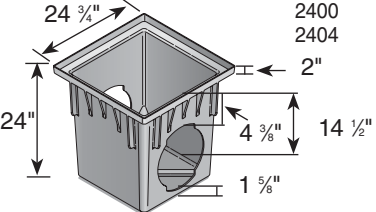
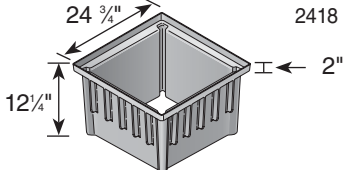
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1820	Basin Side - No Opening	Black	4	4.00	10ND	NDS #1820, 18" x 18" Catch Basin Side, No Opening.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1821	Basin Side - 8" Opening	Black	4	4.00	10ND	NDS #1821, 18" x 18" Catch Basin Side, 8" Opening. Reducer Ring not Included. Requires #1888 Universal Outlet to fit 8" Corrugated Pipe or Sewer and Drain Pipe or #1266 Universal Outlets. (See page 24.) #1889 Universal Outlet does <u>not</u> fit this #1821 Basin Side.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1822	Basin Side - 6" or 8" Opening	Black	4	3.75	10ND	NDS #1822, 18" x 18" Catch Basin Side, 6" or 8" Opening. Opening using Universal Outlet. Includes #1890 Reducer Ring. Use with #1206, #1242, #1243, #1245, #1266 or #1888 Universal Outlets. (See page 24.)

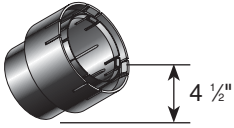
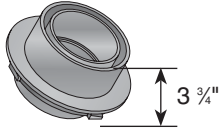
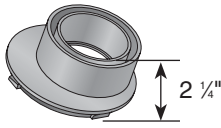
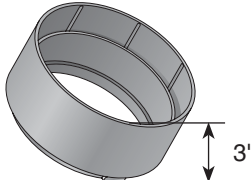
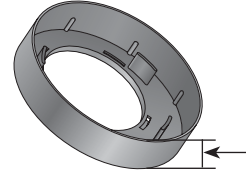
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1828	Basin Bottom	Black	4	2.50	10ND	NDS #1828, 18" x 18" Catch Basin Bottom.

# 24" CATCH BASIN SERIES

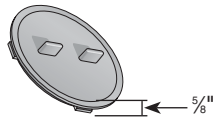
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>23 <sup>7</sup>/<sub>8</sub>"</p> <p>2"</p> <p><sup>7</sup>/<sub>8</sub>" Grate Opening</p>	2411	24" x 24" Square Grate	Black	1	19.75	10ND	NDS #2411, #2412, 24" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 231.69 square inches. 303.51 GPM.
	2412	24" x 24" Square Grate	Green	1	19.75	10ND	
		Use with 24" x 24" Catch Basin Series.					 (See pg. 48)
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>23 <sup>7</sup>/<sub>8</sub>"</p> <p>2"</p> <p>1" Grate Opening</p>	2413	24" x 24" Square Cast Iron Grate	Black	1	150.00	10ND	NDS #2413, 24" Square Heavy Duty Cast Iron Grate. Open surface area 187.00 square inches. 244.97 GPM.
			Use with 24" x 24" Catch Basin Series.				
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>23 <sup>3</sup>/<sub>4</sub>"</p> <p>2"</p> <p>1 <sup>1</sup>/<sub>4</sub>" Grate Opening</p>	2415	24" x 24" Square Galvanized Steel Grate	Galvanized Steel	1	67.00	10ND	NDS #2415, 24" Square Heavy Duty Galvanized Steel Bar Grate. Open surface area 332.06 square inches. 435.00 GPM.
			Use with 24" x 24" Catch Basin Series.				
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>24 <sup>3</sup>/<sub>4</sub>"</p> <p>24"</p> <p>14 <sup>1</sup>/<sub>2</sub>"</p> <p>2"</p> <p>4 <sup>3</sup>/<sub>8</sub>"</p> <p>1 <sup>5</sup>/<sub>8</sub>"</p>	2400	24" x 24" Catch Basin, 2 Openings	Black	1	18.00	10ND	NDS #2400, #2404, 24" x 24" One-Piece Tapered Catch Basin.
	2404	24" x 24" Catch Basin, 4 Openings	Black	1	15.00	10ND	
		Requires 2 or 4 #2410 Universal Outlet. (See page 25.)					
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>24 <sup>3</sup>/<sub>4</sub>"</p> <p>12 <sup>1</sup>/<sub>4</sub>"</p> <p>2"</p>	2418	24" x 24" Catch Basin Extension (No Bottom)	Black	1	14.60	10ND	NDS #2418, 12 <sup>1</sup> / <sub>4</sub> " Extension for 24" x 24" Catch Basin
			Use with 24" x 24" Catch Basin Series.				

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

# CATCH BASIN UNIVERSAL OUTLETS

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1241	3" & 4" Universal Adapter W/ 4" Spigot Fits 3" & 4" Corrugated pipe, 3" & 4" Sewer and Drain Pipe, 4" SCH. 40 Pipe, 3" & 4" Triple Wall Pipe. Use with 3" or 4" sewer and drain fittings.	Black	20	0.70	10ND	NDS #1241, 3" & 4" Patented Universal adapter. #D402,013
	1242	3" & 4" Universal Outlet W/ 4" Spigot Fits 3" & 4" Corrugated pipe, 3" & 4" Sewer and Drain Pipe, 4" SCH. 40 Pipe, 4" Triple Wall Pipe. Allows for adjusting inlet height. Use with 9", 12", 18" and 24" Catch Basin Series. Use with 24" Catch Basin also requires #2410 adapter.	Black	20	0.74	10ND	NDS #1242, 3" & 4" Universal Outlet.
	1243	3" & 4" Universal Locking Outlet* Fits 3" & 4" Corrugated pipe, 3" & 4" Sewer and Drain Pipe, 4" SCH. 40 Pipe and 3" & 4" Triple Wall Pipe. Use with 9", 12", 18" and 24" Catch Basin Series and #930, #1230, #1830 and #2410 Adapters. Use with 24" Catch Basin also requires #2410 adapter. *New Locking Outlet snaps on to most 3" and 4" corrugated pipe.	Black	20	0.70	10ND	NDS #1243, or #1244, 3" & 4" Patented Universal Locking Outlet. Patent #D402,013.
	1245	3" & 4" Offset Universal Outlet Fits 3" & 4" Corrugated pipe, 3" & 4" Sewer and Drain Pipe, 4" SCH. 40 Pipe, 4" Triple Wall Pipe. Allows for adjusting inlet height. Use with 9", 12", 18" and 24" Catch Basin Series. Use with 24" Catch Basin also requires #2410 adapter.	Black	20	0.5	10ND	NDS #1245, 3" & 4" Offset Universal Outlet.
	1266	6" Universal Locking Outlet* Fits 6" Sewer and Drain Pipe, 6" Corrugated Pipe. Use with 9", 12", 18" and 24" Catch Basin Series and #930, #1230, and #1830 Low Profile Adapters. Use with 24" Catch Basin also requires #2410 adapter. *New, improved Locking Outlet snaps on to most 6" corrugated pipe.	Black	20	0.75	10ND	NDS #1266, 6" Universal Locking Outlet.
	1888	8" Universal Outlet Fits 8" Sewer and Drain Pipe, 8" Corrugated Pipe. Use with 18" and 24" Catch Basin Series. Use with 24" Catch Basin also requires #2410 adapter.	Black	8	1.25	10ND	NDS #1888, 8" Universal Outlet.
	1889	8" Offset Universal Adapter Fits 8" Sewer and Drain Pipe, 8" Corrugated Pipe. Use with 12" and most 18" Catch Basin Series (except 1800 and 1804).	Black	10	0.80	10ND	NDS #1889, 8" Offset Universal Adapter
	1890	Universal Outlet Reducer Ring Required on #1821 basin side when using 3", 4", or 6" pipe. Required on #1821 basin side when connecting to #1206, #1243, #1245, #1266 or #1889 Universal Outlets.	Black	8	0.50	10ND	
	2410	10" & 12" Universal Adapter <ul style="list-style-type: none"> <li>Includes #1890 (comes pre-inserted).</li> <li>Fits 10" and 12" Sewer and Drain Pipe; 10" and 12" dual wall Corrugated Pipe; 12" single wall Corrugated Pipe (does not fit 10" single wall Corrugated Pipe).</li> <li>Reduces opening to fit most 3" to 8" adapters above (all except #1889) for use with 3", 4", 6" and 8" Sewer and Drain Pipe; 3", 4", 6" and 8" Corrugated Pipe; and 4" SCH. 40 Pipe (select corresponding adapter above).</li> <li>Use with 24" Catch Basin Series.</li> </ul>	Black	1	5.5	10ND	NDS #2410, 10" Universal Adapter.
	2410	10" & 12" Universal Adapter <ul style="list-style-type: none"> <li>Includes #1890 (comes pre-inserted).</li> <li>Fits 10" and 12" Sewer and Drain Pipe; 10" and 12" dual wall Corrugated Pipe; 12" single wall Corrugated Pipe (does not fit 10" single wall Corrugated Pipe).</li> <li>Reduces opening to fit most 3" to 8" adapters above (all except #1889) for use with 3", 4", 6" and 8" Sewer and Drain Pipe; 3", 4", 6" and 8" Corrugated Pipe; and 4" SCH. 40 Pipe (select corresponding adapter above).</li> <li>Use with 24" Catch Basin Series.</li> </ul>	Black	1	5.5	10ND	NDS #2410, 10" Universal Adapter.

# CATCH BASIN UNIVERSAL OUTLETS

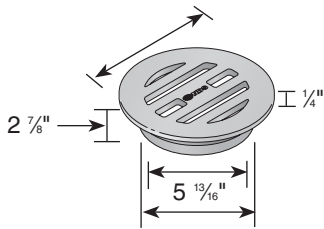


Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1206	6" Universal Adapter Plug	Black	20	0.35	10ND	NDS #1206, Universal Plug.

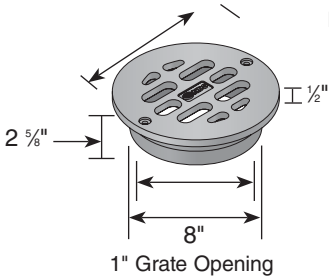
Use with 9", 12", 18" and 24" Catch Basin Series.  
Use with 24" Catch Basin also requires #2410 adapter.

## DURACAST™ IN-LINE GRATES

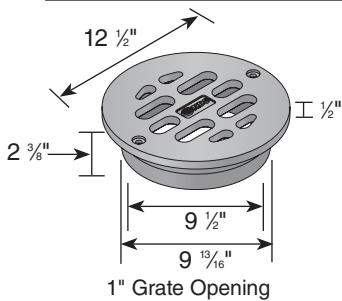
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
D6	6" Round Grate	Black	1	7.00	10ND	NDS #D6, 6" Round Heavy Duty Cast Iron Grate with Black Paint. Open surface area 9.0 square inches. 11.79 GPM. H-20 load rating.



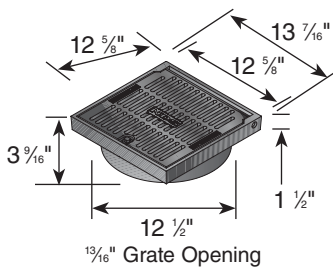
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
D8	8" Round Grate	Black	1	14.00	10ND	NDS #D8, 8" Round Heavy Duty Ductile Iron Grate with Black Paint. Open surface area 17.56 square inches. 23.00 GPM. Bolt holes for added security, H-20 load rating.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
D10	10" Round Grate	Black	1	17.00	10ND	NDS #D10, 10" Round Heavy Duty Ductile Iron Grate with Black Paint. Open surface area 29.66 square inches. 38.80 GPM. Bolt holes for added security, H-20 load rating.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
D12H-WO	12" Square Hinged Cast Iron Grate without adapter.	Black	1	43.00	10ND	H-20 Load Rating. Open surface area 50.28 square inches. 65.89 GPM.



Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

## Durable

Designed for maximum durability and drainage, NDS Channel Drains are a proven alternative to traditional concrete drains. UV inhibitors in the grates, channel and component parts prevent fading and cracking from the sun. All plastic grate and channel components are **chemically resistant, rust-proof, and maintenance-free.**

## Simple

NDS Channel is light-weight and easy to install. Grates are removable for easy clean-out and replacement. Channel Grates may be held in place with NDS screws or hold down clips. A complete line of accessories is available for each channel.

NDS Channel Systems operate on the same principle as a roof gutter. Our "Profile Series" of channel drains connect like PVC pipe. Our "Modular Pro Series" Injection Molded Channel has mechanical interlocking joints. All NDS channel easily connects to sewer and drain pipe and fittings or SCH 40 pipe and fittings.

## Versatile

To blend with surrounding surfaces, our Channel Grates are available in six colors, as well as solid brass for the Mini Channel. Cast iron and rolled steel grates are available for the Dura Slope and Pro Series Channel. A steel frame is also available for the Dura Slope.

The Channel System also offers a choice of outlets. Water can be evacuated from the bottom of the channel or from the end or sides of the channel.

## Efficient

Channel Drain eliminates the need for grading a deck surface to a low area. Instead, the deck is gradually sloped in one direction or plane, and the channel drain acts as a perimeter drain at the edge of the slope.

Most hardscapes experience more runoff than landscapes due to the lack of water absorption. Channel Drain systems provide more overall open surface area than conventional area grates.

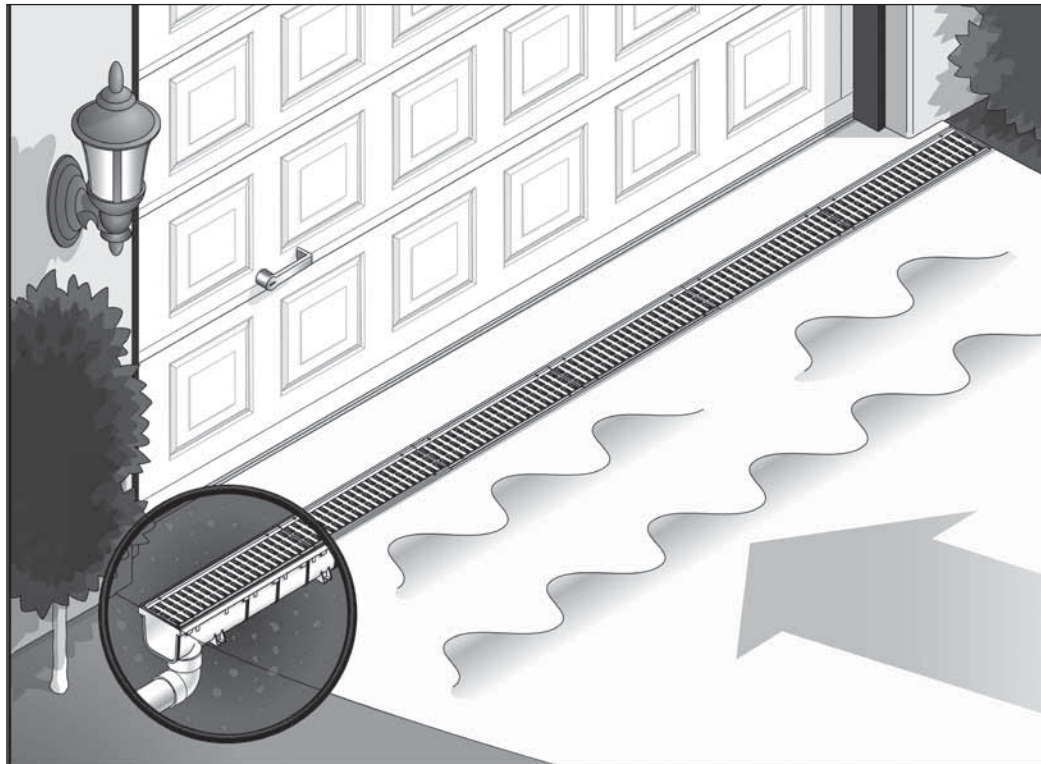
## Non-Sloped Channel System Advantages

NDS offers non-sloped channel system advantages; less expensive, simplifies inventory, eliminates need to stock various sloping channel sections. Multiple outlets provide safety through redundancy, should any individual outlet become clogged. Proper flow is assured by use of sloped drain pipe.

## Recommended Applications

- Driveways\*
- Parking Lots\*
- Warehouses
- Swimming Pools & Spas
- Washdown Areas
- Tennis Courts
- Sidewalks
- Patios
- Sports Facilities
- Nurseries & Greenhouses

\*Refer to page 28 for specific asphalt installation instruction.



# PROFILE CHANNEL DRAINS

## Installation

### 1. Standard Installation

Excavate a trench to accommodate the channel and bedding concrete. Erect a string line at each end of the drain run as a guide for laying the channels to the required level. Begin channel installation at the evacuation or discharge end of the run where the outlet or outlets are located.

Install channel end-to-end PVC cementing sections together. Design bottom or end outlets into the channel run in the appropriate location and glue to the drain pipe or fittings. PVC cement end caps where appropriate.

Using either NDS stakes, 1/2" or 5/8" rebar or wood stakes, anchor channel to the trench bed every 24" on each side of channel. Backfill with either concrete, sand, or soil depending on the application. Pour slab to grade and finish concrete.

Figure 1A illustrates a light vehicular installation in which a concrete base may not be required. Compacted soil and a 1" sand base may be used in place of concrete.

Figure 1B illustrates a concrete base underneath the channel recommended for heavy load applications or freeze/thaw zones where heaving may be a problem.

### 2. Suspended Installation

Suspended installation is ideal for retrofit installations with an existing concrete slab or new construction where forms can be used to suspend the channels. Prepare the trench excavation. Using 2" x 4" boards span the width of the trench and bolt the channel grates to the boards. Pour and compact concrete under and around the channels. Finish to the proper grade. Figure 2

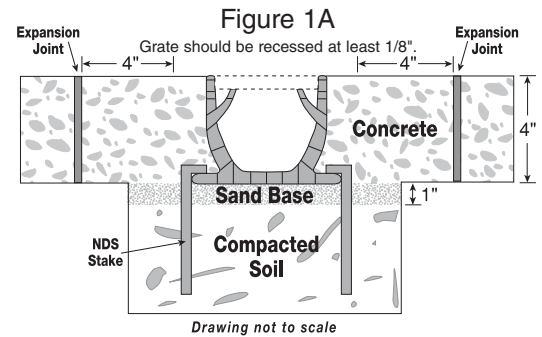
### 3. Slurry Installation

This installation may be used in lieu of the standard installation. Prepare the trench excavation and pull a stringline to the proper elevation. Pour a slurry of concrete in the trench to a depth that will insure at least 4" of concrete underneath the channels. Lay the channels in the bedding slurry. Check the channel alignment and grade again. After the slurry sets, concrete can be poured around the channel and finished to the proper grade. Figure 3

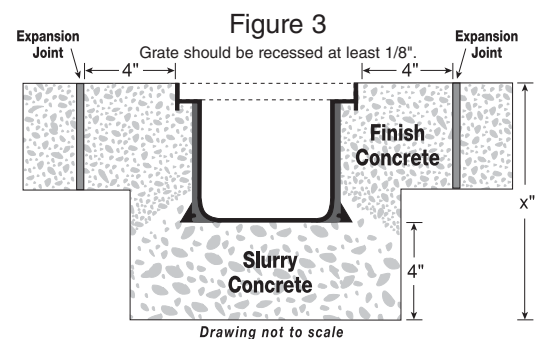
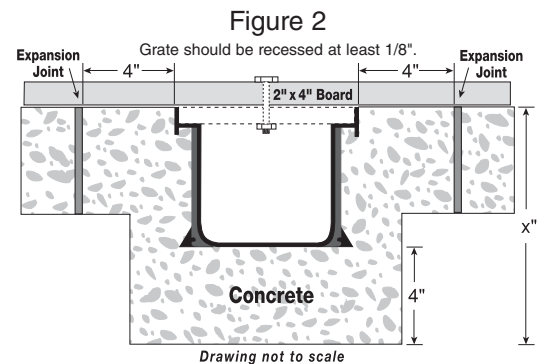
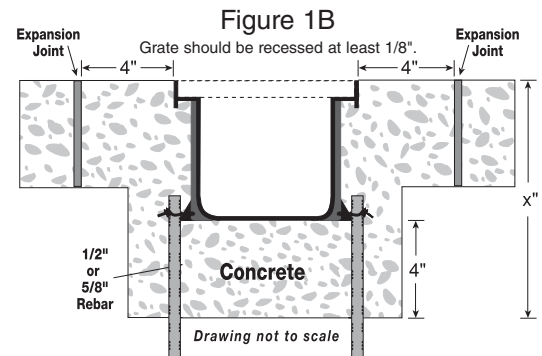
### Important Installation Notes:

1. Refer to load classification chart for proper application.
2. PVC primer and medium body fast set PVC solvent cement must be used to cement all components.
3. Grate must be installed prior to pouring concrete or backfill.
4. Grates should be taped prior to pouring concrete to prevent debris from entering channel during installation.
5. Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.
6. In asphalt or hot mastic applications, the channels must be encased in concrete for strength and to prevent distortion of the channel.
7. Expansion joints must be provided parallel, but not immediately adjacent to each side of the drain run and crack control joints utilized at right angles to the channel for installation in concrete.
8. Grate must be installed and screwed down on channel at all times except for cleaning.

### Mini and Spee-D<sup>®</sup> Channel Only



### Mini, Spee-D<sup>®</sup> and Pro Series Channel



# PROFILE CHANNEL DRAINS

## Details

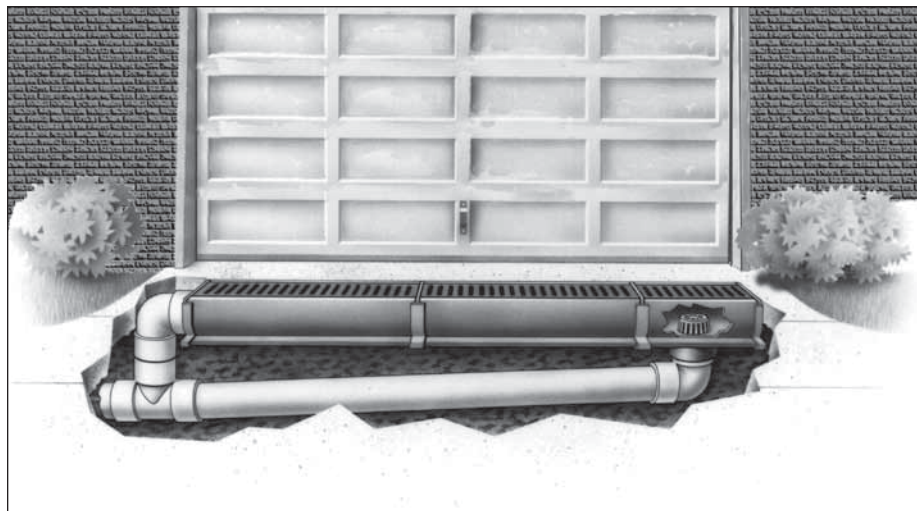
- Unique patented flying buttress design provides load bearing support from both sides as well as underneath.
- Available in four sizes: Pro Series Channel for traffic applications and large flow capacities, Spee-D® for driveways, large decks and commercial areas, Mini for landscapes, pools or decks and Micro for residential pools and spas.

## Installation

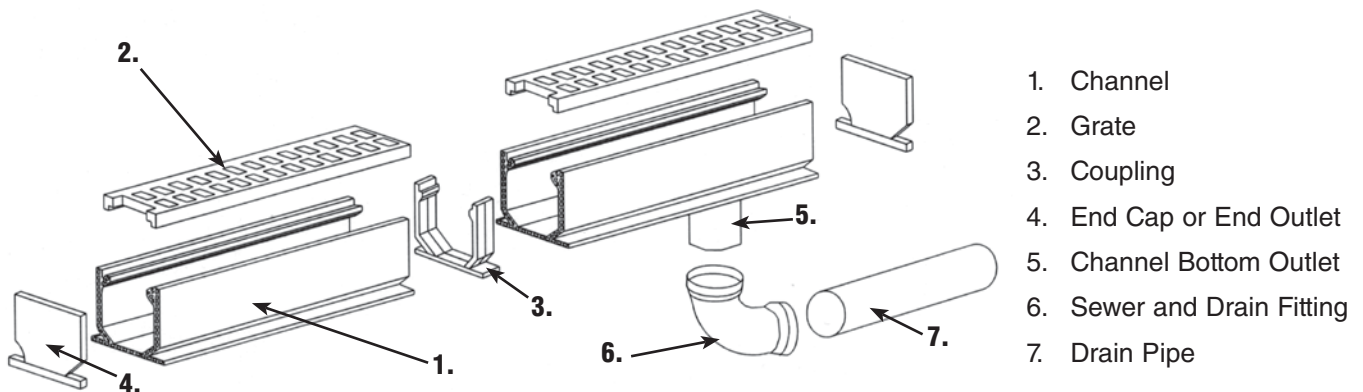
- Unique flanges on the bottom of the channel provide an anchoring lip for straight installation and prevents floating.

## Materials and Standards

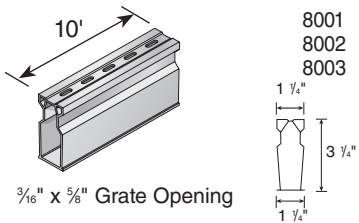
- Profile channel can be cut to any length and solvent-welded like PVC pipe. Sold by the foot.
- Grates available in six colors - see individual products for details.
- Mini Channel Grate also available in solid brass.
- Channel system offers choice of bottom, end or side water evacuation.
- Concrete is not required under some channels for light vehicular applications. Standards vary per product - see individual section for details.



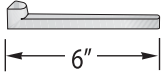

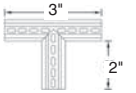




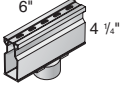



## Mini and Spee-D® Channel System Components



- Excellent performance at lowest possible cost. • Designed for residential applications including swimming pools, spas and patios.
- Unique design features grate openings parallel to channel length and recessed grate for strength and effective water runoff.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 <p>10'</p> <p>3/16" x 5/8" Grate Opening</p> <p>1 1/4"</p> <p>3 1/2"</p> <p>1 1/4"</p> <p>(See pg. 48) ADA Compliant/Heel-proof</p>	8001	10 ft. Long Micro Channel	White	100Ft	5.00	25PF	NDS #8001, #8002, and #8003, 10 ft. Micro Channel with Recessed Reinforced Grate Area, Parallel Drain Slots with UV inhibitor. Open surface area 2.50 square inches per linear foot. 3.28 GPM per foot.
	8002	Includes 1 coupling	Sand	100Ft	5.00	25PF	
	8003		Gray	100Ft	5.00	25PF	

## MICRO ACCESSORIES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
 <p>6"</p>	230	6" Channel Installation Stake	Gray	24	0.04	25PF
 <p>3"</p>	8301 8302 8303	Micro Channel 45° Elbow	White Sand Gray	5 5 5	0.30 0.30 0.30	25PF 25PF 25PF
 <p>3"</p> <p>2"</p>	8371 8372 8373	Micro Channel Tee	White Sand Gray	5 5 5	0.40 0.40 0.40	25PF 25PF 25PF
 <p>3"</p>	8381 8382 8383	Micro Channel 90° Elbow	White Sand Gray	5 5 5	0.40 0.40 0.40	25PF 25PF 25PF
	8461 8462 8463	Micro 1-1/2" Sch. 40 Spigot End Outlet	White Sand Gray	10 10 10	0.10 0.10 0.10	25PF 25PF 25PF
	8471 8472 8473	Micro End Plug	White Sand Gray	20 20 20	0.05 0.05 0.05	25PF 25PF 25PF
	8481	Micro Channel Couplings only Fits Inside Channel	White	20	0.10	25PF
 <p>6"</p> <p>4 1/2"</p>	8501 8502 8503	Micro 1-1/2" Sch. 40 Spigot Bottom Outlet	White Sand Gray	10 10 10	0.35 0.35 0.35	25PF 25PF 25PF
 <p>6"</p>	8511 8512 8513	Micro 1-1/2" Sch. 40 Spigot Side Outlet	White Sand Gray	10 10 10	0.35 0.35 0.35	25PF 25PF 25PF
	8601	Micro Hold Down Clips Use with Channel Stakes to Hold Channel in Place	White	20	0.10	25PF
 <p>4"</p>	8651 8652 8653	Micro Channel Clean Out	White Sand Gray	10 10 10	0.30 0.30 0.30	25PF 25PF 25PF

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.



**PROFILE CHANNEL DRAINS**

**MINI CHANNEL™ DRAINS**

- Low-cost alternative to Spee-D® Channel.
- Excellent for light duty applications including residential pools, patios, spas and tennis courts.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	540	3 ft. Channel Grate	White	48ft	.688	25PF	NDS #540, #541, #542, #543, #544, #551, 3 ft. Structural Foam Polyolefin Channel Grate with UV inhibitor. Open surface area 11.30 square inches per foot. 14.80 GPM per foot.
	541		Gray	48ft	.688	25PF	
	542		Green	48ft	.688	25PF	
	543		Black	48ft	.688	25PF	
	544		Sand	48ft	.688	25PF	
	551		Brick Red	48ft	.688	25PF	
		(See pg. 48) ADA Compliant/Heel-proof	Requires 4 screws per Grate				
	552B	1 ft. Brass Channel Grate	Satin Brass	12	1.25	25PF	NDS #552B or #553PB, 1 foot Mini Channel Solid Brass Grate with brass screws. Open surface area 10.00 square inches per foot. 13.10 GPM per foot.
	553PB		Polished Brass	12		25PF	
		Fits #500 Mini Channel.					
		(See pg. 48) ADA Compliant/Heel-proof					
	500	6 ft. Mini Channel Drain	Gray	48ft	4.00	25PF	NDS #500, 6 ft. PVC Mini Channel Drain with inverse flying buttress design, bottom flange, patented honeycomb reinforced walls and UV inhibitor.
		Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.					

**MINI CHANNEL ACCESSORIES**

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
	529	Stainless Steel Screws, FH #4 x 5/8"	Steel	64	0.10	25PF
	230	6" Channel Installation Stake	Gray	24	0.04	25PF
	532	2" Sch. 40 Hub to 3" S&D Spigot Adapter	White	20	0.20	30PV
	533	2" Sch. 40 Hub to 4" S&D Spigot Adapter	White	20	0.35	30PV
	546	Spigot End Outlet for 2" Sch. 40 Pipe Fitting	Gray	10	0.30	25PF
	547	3" Channel End Cap	Gray	20	0.15	25PF
	548	3" Channel Coupling	Gray	20	0.20	25PF
	550	3' Long Channel with 2" Sch. 40 Spigot Bottom Outlet	Gray	6	2.17	25PF
	5300	Fabricated 45° Elbow with Grate	Gray	1	0.40	25PF
	5303		Sand	1	0.40	25PF
	5370	Fabricated Tee with Grate	Gray	1	0.50	25PF
	5372		Black	1	0.50	25PF
	5374		Brick Red	1	0.50	25PF
	5380	Fabricated 90° Elbow with Grate	Gray	1	0.40	25PF
	5383		Sand	1	0.40	25PF

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

- Ideal for commercial as well as residential applications.
- Effective in everything from patios to light vehicular traffic areas.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	240	2 ft. Channel Grate	White	24ft	1.42	25PF	NDS #240, #241, #242, #243, #244, #251, 2 ft. Structural Foam Polyolefin Secured Channel Grate with UV inhibitor. Open surface area 19.30 square inches per foot. 25.28 GPM per foot.
	241		Gray	24ft	1.42	25PF	
	242		Green	24ft	1.42	25PF	
	243		Black	24ft	1.42	25PF	
	244		Sand	24ft	1.42	25PF	
	251		Brick Red	24ft	1.42	25PF	
		(See pg. 48) ADA Compliant/Heel-proof Requires 4 screws per grate					
	400	4 ft. Channel Drain	Gray	24ft	4.83	25PF	NDS #400, 4 ft. PVC Spee-D <sup>®</sup> Channel Drain with Inverse Flying buttress design, bottom flange, patented honeycomb reinforced walls and UV inhibitor.
	400-10	10 ft. Channel Drain	Gray	60ft	11.00	25PF	
		Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.					

**SPEE-D<sup>®</sup> ACCESSORIES**

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
	229	Stainless Steel Screws, FH #8 x 1"	Steel	48	0.06	25PF
	230	6" Channel Installation Stake	Gray	24	0.04	25PF
	234	2' long fabricated 3" & 4" Spigot Bottom Outlet with Strainer. Fits 3" or 4" Sewer and Drain Fittings. Grates not included.	Gray	12	2.67	25PF
	245	Channel Strainer Coupling	Gray	20	0.35	25PF
	246	2" Schedule 40 SPT End Outlet	Gray	10	0.40	25PF
	247	Channel End Cap	Gray	10	0.40	25PF
	248	Channel Coupling	Gray	20	0.40	25PF
	249	3" & 4" Offset End Outlet (connects to 3" S&D Pipe, 4" S&D Fittings)	Gray	10	0.50	25PF
	2301	Fabricated 45° Elbow with grate	Gray	1	2.00	25PF
	2351	7" Fabricated Cross and Grate 4" Bottom outlet with grate	Gray	1	1.70	25PF
	2361	Fabricated Cross and Grate	Gray	1	3.00	25PF
	2370	Fabricated Tee with Grate	White	1	3.00	25PF
	2371		Gray	1	3.00	25PF
	2372		Green	1	3.00	25PF
	2381	Fabricated 90° Elbow with grate	Gray	1	3.00	25PF

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

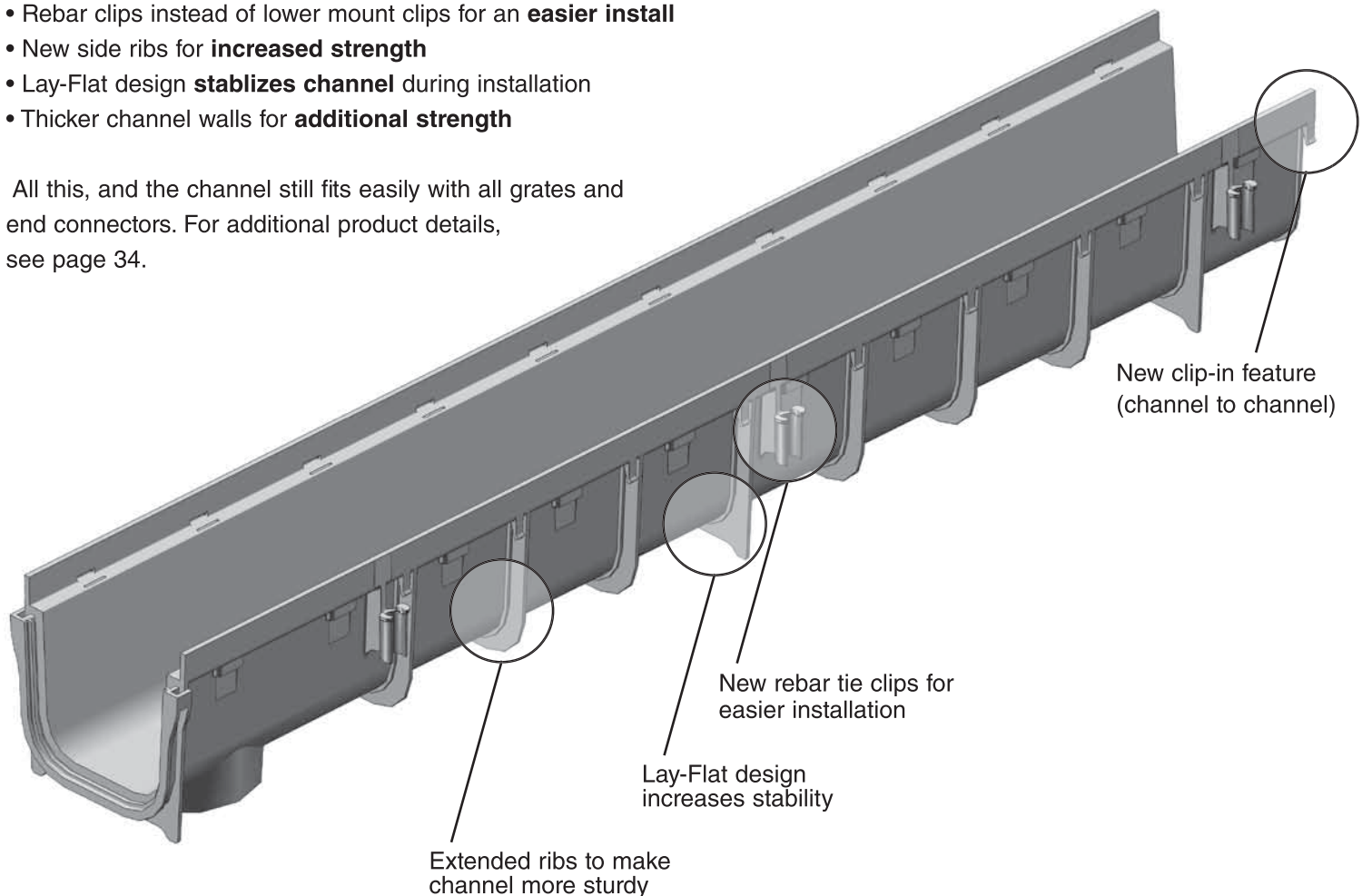
# HAVE YOU SEEN THE NEW AND IMPROVED PRO SERIES CHANNEL DRAIN?

Never ones to rest on our laurels, at NDS we've taken our popular, easy-to-install Pro Series Channel Drain... and made it even better.

We originally designed the Pro Series System to be flexible, easy, and fast to install, with a patented modular design, the ability to insert outlets along any location in the channel run, and end cap and outlet fittings that slide easily into place. In 2011, we're keeping all those features – and adding the following new ones:

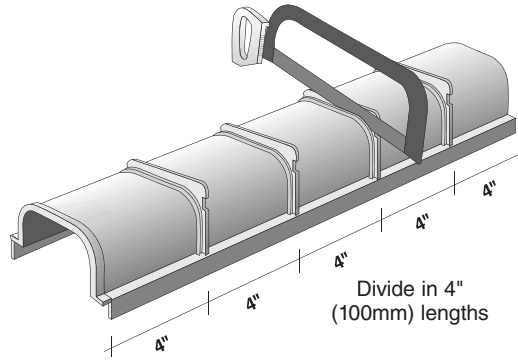
- Channel-to-channel clips for **reduced motion during installation**
- Rebar clips instead of lower mount clips for an **easier install**
- New side ribs for **increased strength**
- Lay-Flat design **stabilizes channel** during installation
- Thicker channel walls for **additional strength**

All this, and the channel still fits easily with all grates and end connectors. For additional product details, see page 34.



## Details

- Create a channel as long as you need, or reduce to lengths as short as 4" for smaller, interlocking sections.
- End cap/knock-out end and outlet fitting simplifies assembly and installation.
- Flexible and easy: side and bottom outlets can be inserted at any location along the channel run.
- Available in four widths: 3", 5", 8" and 12"
- Available in two depths: deep for heavy flows, shallow for slabs or where little fall depth is available.
- Modular design comes in ½ meter (19 11⁄16") and 1 meter (39 3⁄8") pieces with interlocking end joints.
- Joints eliminate couplings and are specially designed to withstand concrete expansion and contraction.



## Materials and Standards

- Polypropylene creates a structurally-compact, water tight channel.
- All parts contain UV inhibitors to prevent fading and cracking.

## Load Recommendations

- Pedestrian Grates offer heel-proof pattern.
- Polyolefin Light Vehicular Grate for use in areas with passenger vehicles and light trucks with speeds less than 20 MPH.
- Load Star or Cast Iron Channel Grates for heavy-duty traffic.
- See individual products for details.

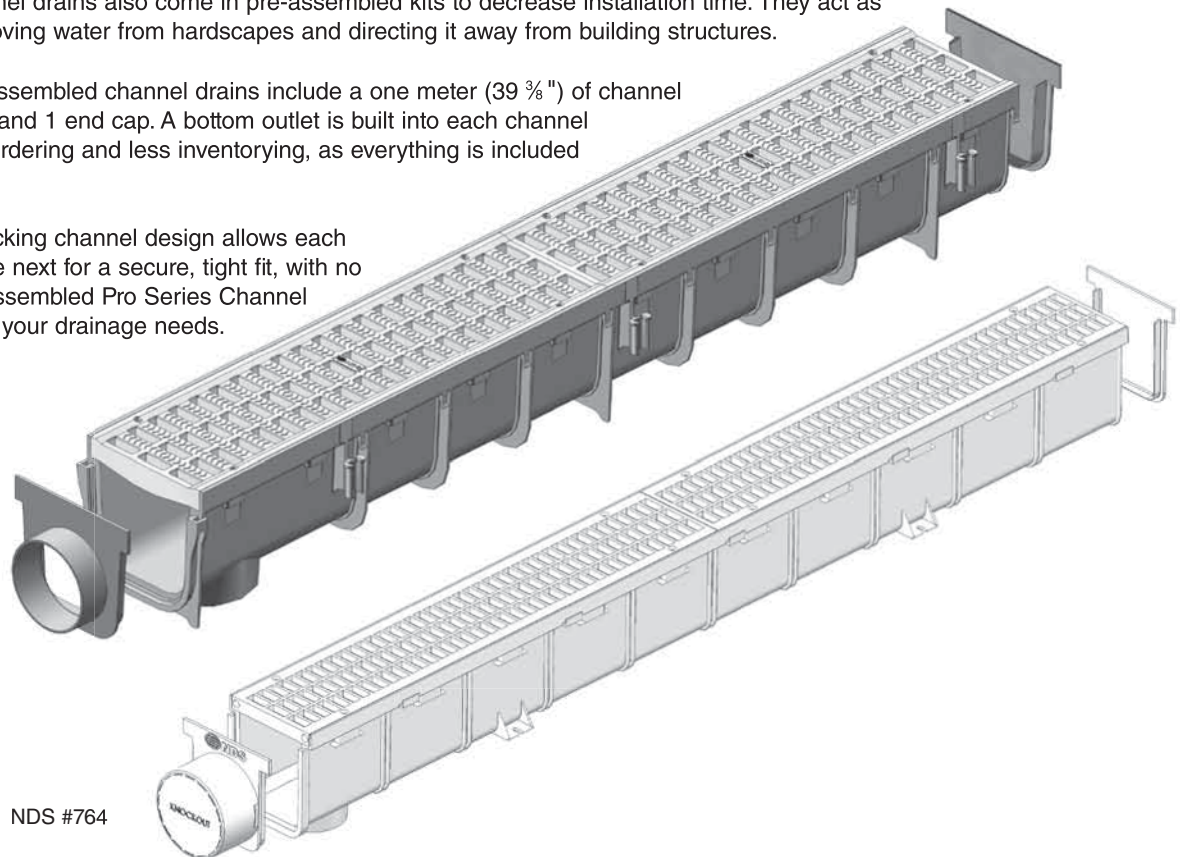
## Pre-assembled Channel Drain Systems

Our Modular Pro Series channel drains also come in pre-assembled kits to decrease installation time. They act as perimeter drains, quickly removing water from hardscapes and directing it away from building structures.

The new 3" and 5" wide pre-assembled channel drains include a one meter (39 3⁄8") of channel drain and grate, 1 end outlet, and 1 end cap. A bottom outlet is built into each channel section. This allows for easy ordering and less inventorying, as everything is included under one part number.

Our unique Pro Series interlocking channel design allows each channel to securely lock to the next for a secure, tight fit, with no couplings required. The pre-assembled Pro Series Channel drains are a great solution for your drainage needs.

NDS #864



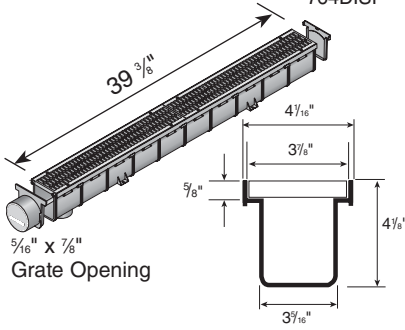
NDS #764

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

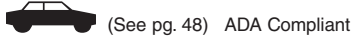
MODULAR CHANNEL DRAINS

3" PRO SERIES CHANNEL™ DRAINS

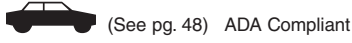
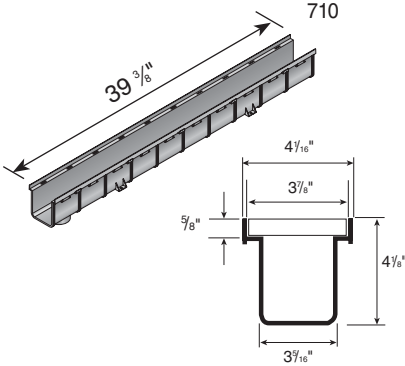
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
764	3" x 1 Meter Light Traffic Channel Grate & Channel Drain Kit	Light Gray	10	3.75	25IN	NDS #764, 3" wide high impact PVC light traffic channel grate and high impact PVC Channel Drain with mechanical interlocking joints and UV inhibitors. Open surface area 20.44 square inches per foot. 26.77 GPM per foot.
764DISP	3" Pro Series Channel Display (30 Kits)		1	120.00	25IN	



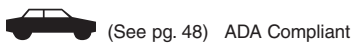
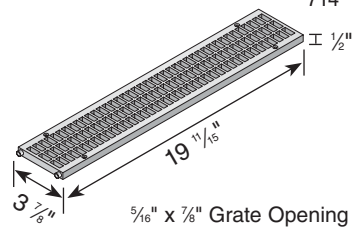
Includes 1 end outlet (#713) and 1 end cap (#712)  
Bottom outlet fits 3" S&D fittings.  
Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.



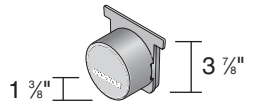
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
710	3" x 1 Meter Channel Drain*	Light Gray	12	2.50	25IN	NDS #710, 3" wide high impact PVC Channel Drain with mechanical interlocking joints. Bottom outlet fits 3" S&D fittings. Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.



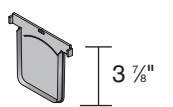
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
714	3" x 20" Light Traffic Channel Grate*	Light Gray	24	1.00	25IN	NDS #714, 3" wide high impact PVC light traffic channel grate. Open surface area 20.44 square inches per foot. 26.77 GPM per foot. Requires 4 #229 screws



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
713	3" End Cap/End Outlet	Light Gray	12	0.25	25IN	NDS #713, 3" high impact PVC End Cap/End Outlet. Fits 3" fittings



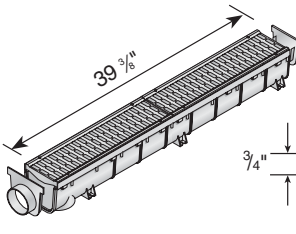
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
712	3" End Cap	Light Gray	20	0.10	25IN	NDS #712, 3" high impact PVC End Cap.



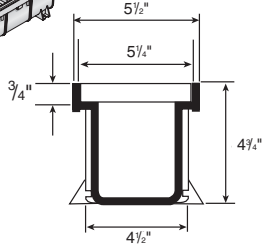
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
229	Stainless Steel Screws FH H8x1", 6" Channel Installation Stake	Steel	48	0.06	25PF	

\*Produced under license of First Plast S.R.L. - Italy

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
864	5" x 1 Meter Light Traffic Grate & Channel Drain Kit Includes 1 end outlet & 1 end cap	Light Gray	9	7.11	25IN	NDS #864, 5" Wide Structural Foam Polyolefin light traffic channel grate and deep profile high impact PVC channel drain with mechanical interlocking joint and UV inhibitors. Open surface area 25.12 square inches per foot. 32.91 GPM per foot.
864DISP	5" Pro Series Channel Display (20 Kits)		1	140.0	25IN	



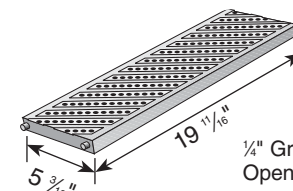
3/8" x 1 1/4" Grate Opening



Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.



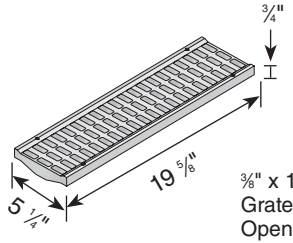
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
826	5" x 20" Pedestrian Traffic Channel Grate  Requires #829 screws.	Light Gray	10	1.00	25IN	NDS #826, 5" Wide UV protected high impact Polyolefin pedestrian traffic channel grate. Open surface area 7.93 square inches per foot. 10.39 GPM per foot.



1/4" Grate Opening



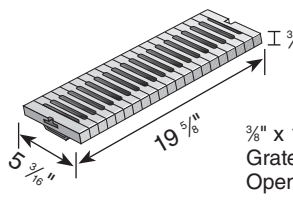
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
814	5" x 20" Light Traffic Channel Grate	Light Gray	10	1.20	25IN	NDS #814, #815, #816, #817, #818, #819, 5" Wide Structural Foam Polyolefin light traffic channel grate with UV inhibitors. Open surface area 25.12 square inches per foot. 32.91 GPM per foot.
815	5" x 20" Light Traffic Channel Grate	Green	10	1.20	25IN	
816	5" x 20" Light Traffic Channel Grate	Black	10	1.2	25IN	
817	5" x 20" Light Traffic Channel Grate	Sand	10	1.20	25IN	
818	5" x 20" Light Traffic Channel Grate	Brick Red	10	1.20	25IN	
819	5" x 20" Light Traffic Channel Grate	White	10	1.20	25IN	



3/8" x 1 1/4" Grate Opening



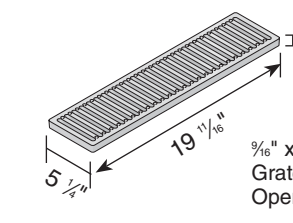
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
828	5" x 20" Load Star Heavy Traffic Channel Grate  Requires 4 Screws per Grate Requires #829 screws.	Gray	10	2.0	25IN	NDS #828, 5" Wide UV protected high impact glass reinforced nylon heavy traffic channel grate. Open surface area 15.54 square inches per foot. 20.36 GPM per foot.



3/8" x 1 1/4" Grate Opening



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
823	5" x 20" Cast Iron Channel Grate  Requires #829 screws.	Black	1	10.00	25IN	NDS #823, 5" Wide Heavy Duty Cast Iron Heavy Traffic Channel Grate. Open surface area 25.03 square inches per foot. 32.79 GPM per foot.



9/16" x 3 3/16" Grate Opening



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
829	Stainless Steel Screws, FH #6 x 1 1/4"	Steel	40	.15	25PF	



Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.


\*Produced under license of First Plast S.R.L.- Italy

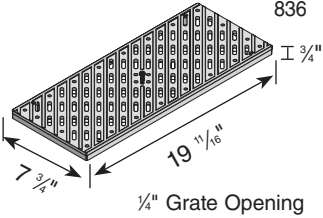
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
820	5" x 20" Shallow Profile Channel Drain*	Light Gray	10	1.35	25IN	NDS #820, 5" Wide Shallow Profile UV protected high impact PVC Channel Drain with Mechanical Interlocking Joint.  Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.
821	5" Shallow Profile End Cap/ 1-1/2" SCH 40 SPT Knock Out End Outlet*	Light Gray	10	0.15	25IN	NDS #821, 5" Wide Shallow Profile high impact PVC End Cap/End Outlet.
822	5" Shallow Profile 3" S&D SPT Bottom Outlet/ 1-1/2" SCH 40 SPT Side Outlet	Light Gray	10	0.60	25IN	NDS #822, 5" Wide Shallow Profile high impact PVC Bottom/Side Outlet.
800	5" x 1 Meter Deep Profile Channel Drain	Light Gray	10	4.00	25IN	NDS #800, 5" Wide Deep Profile high impact PVC Channel Drain With Mechanical Interlocking Joints, Installation feet, integrated knock out bottom outlet.  Integrated Knock out bottom outlet fits 3" and 4" S&D Fittings.  Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.
811	5" Deep Profile 3" S&D Pipe Hub & 4" S&D Fitting SPT End Outlet	Light Gray	10	0.40	25IN	NDS #811, 5" Wide Deep Profile high impact PVC End Outlet.
813	5" Deep Profile End Cap/3" S&D Hub & 4" S&D SPT Knock Out End Outlet	Light Gray	10	0.40	25IN	NDS #813, 5" Wide Deep Profile high impact PVC End Cap/End Outlet.
812	5" Deep Profile End Cap	Light Gray	10	0.20	25IN	NDS #812, 5" Wide Deep Profile high impact PVC End Cap.
861	5" Deep Profile Grate & Channel Drain 90 Degree Elbow	Light Gray	1	3.44	25IN	
862	5" Deep Profile Grate & Channel Drain 45 Degree Elbow	Light Gray	1	3.44	25IN	

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.


To place an order, visit: [ndspro.net](http://ndspro.net), fax: 1-800-726-1998 or call 1-800-726-1994.

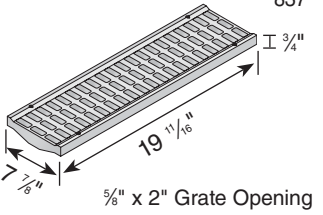
\*Produced under license of First Plast S.R.L.- Italy

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
836	8" x 20" Pedestrian Traffic Channel Gate  Requires #829 screws. 4 screws per grate.   (See pg. 48) ADA Compliant/Heel-proof	Light Gray	1	1.55	25IN	NDS #836, 8" Wide UV protected high impact Polyolefin pedestrian traffic channel grate. Open surface area 11.70 square inches per foot. 15.33 GPM per foot.




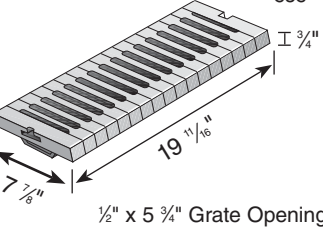
1/4" Grate Opening

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
837	8" x 20" Light Traffic Channel Gate  Requires #829 screws. 4 screws per grate.   (See pg. 48)	Light Gray	1	3.00	25IN	NDS #837, 8" Wide UV protected high impact Polyolefin light traffic channel grate. Open surface area 26.94 square inches per foot. 35.29 GPM per foot.




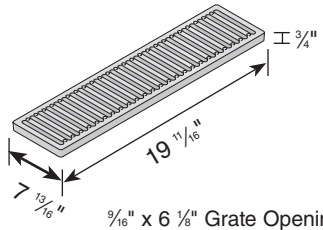
5/8" x 2" Grate Opening

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
838	8" x 20" Load Star Heavy Traffic Channel Gate*  Requires #829 screws. 4 screws per grate.   (See pg. 48) ADA Compliant	Light Gray	1	4.00	25IN	NDS #838, 8" Wide UV protected high impact glass reinforced nylon heavy traffic channel grate. Open surface area 30.85 square inches per foot. 40.41 GPM per foot.



1/2" x 5 3/4" Grate Opening

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
888	8"x20" Cast Iron Channel Gate  #829 screws may be used. 4 screws per grate.   (See pg. 48)	Black	1	14.00	25IN	NDS #888, 8" Wide Heavy Duty Cast Iron Heavy Traffic Channel Gate. Open surface area 41.25 square inches per foot. 54.04 GPM per foot.



5/16" x 6 1/8" Grate Opening



MODULAR CHANNEL DRAINS

8" PRO SERIES CHANNEL™ DRAINS

\*Produced under license of First Plast S.R.L.- Italy

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
830	8" x 20" Shallow Profile Channel Drain*	Light Gray	1	2.00	25IN	NDS #830, 8" Wide Shallow Profile high impact PVC channel drain with mechanical interlocking joints and UV inhibitors.

Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
831	8" Shallow Profile End Cap/ 3" S&D SPT Knock Out End Outlet*	Light Gray	1	0.40	25IN	NDS #831, 8" Wide Shallow Profile high impact PVC End Cap/End Outlet.

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
832	8" Shallow Profile 3" S&D SPT Side Outlet*	Light Gray	1	1.00	25IN	NDS #832, 8" Wide Shallow Profile high impact PVC Bottom/Side Outlet. Bottom outlet fits 4" S&D pipe, 3" S&D fittings

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
833	8" x 20" Deep Profile Channel Drain	Light Gray	1	3.00	25IN	NDS #833, 8" Wide Deep Profile high impact PVC channel drain with mechanical interlocking joints and UV inhibitors.

Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
834	8" Deep Profile End Cap/ 3"&4" S&D SPT Knock Out End Outlet	Light Gray	10	1.20	25IN	NDS #834, 8" Wide Deep Profile high impact PVC End Cap/End Outlet.

\*Produced under license of First Plast S.R.L.- Italy

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	847	12" x 20" Light Traffic Channel Grate*	Gray	1	4.64	25IN	NDS #847, 12" Wide UV protected high impact PVC light traffic channel grate. Open surface area 48.77 square inch/foot. 63.89 GPM per foot.



	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	845	12"x20" Cast Iron Heavy Traffic Channel Grate	Black	1	31.92	25IN	NDS #845, 12" wide cast iron heavy traffic channel grate. Open surface area 38.58 square inches per foot. 50.54 GPM per foot.



	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	849	Grate Security Clip*	Gray	10	0.40	25IN	For use with 845 and 847 grates and 840 or 843 channels only (2 per grate). Mounts inside Channel Drain and secures grate. Screw and nut included.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	840	12" x 20" Shallow Profile Channel Drain	Light Gray	1	4.00	25IN	NDS #840, 12" Wide Shallow profile UV protected high impact PVC channel drain with mechanical Interlocking Joints.  Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	841	12" Shallow Profile End Cap/ 4" S&D SPT Knock Out End Outlet	Light Gray	1	1.00	25IN	NDS #841, 12" Wide Shallow Profile high impact PVC End Cap/End Outlet.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	843	12" x 20" Deep Profile Channel Drain*	Light Gray	1	6.00	25IN	NDS #843, 12" Wide Deep Profile UV protected high impact PVC channel drain with mechanical interlocking joints.  Grate should be recessed 1/8" below finish grade in non traffic applications. Grate should be recessed 1/4" in traffic applications.

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	844	12" Deep Profile End Cap/ 4" S&D SPT Knock Out End Outlet*	Light Gray	1	1.60	25IN	NDS #844, 12" Wide Deep Profile high impact PVC End Cap/End Outlet.

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

To place an order, visit: [ndspro.net](http://ndspro.net), fax: 1-800-726-1998 or call 1-800-726-1994.



**PRE-SLOPED CHANNEL DRAIN**

**DURA SLOPE™ CHANNEL DRAINS**

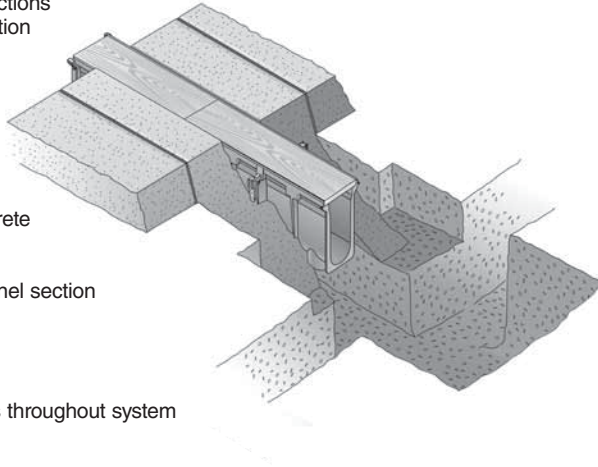
Lightweight 4 ft. modular sections  
Easier handling and installation  
Lower freight costs


2" radius bottom  
Minimizes debris build-up

Polyethylene material  
Durable and inexpensive  
Less breakage versus concrete  
High chemical resistance

Bottom outlet on each channel section  
System versatility  
Requires fewer accessories


0.7% built-in slope  
Maintain optimum flow rates throughout system






**LevelLoc™ re-bar supports with integral protruding knob**

- Levels channel and grips re-bar
- Requires fewer accessories




**ProFit™ locking system**

- Locks grate to integral frame
- Supports product in shipping and installation (included)



**Interlocking tongue and groove joints**

- Secures alignment
- Ensures straight channel runs
- Easy assembly and installation

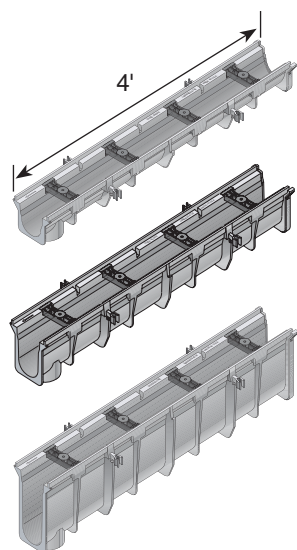


**DuraLoc™ integral joint lock**

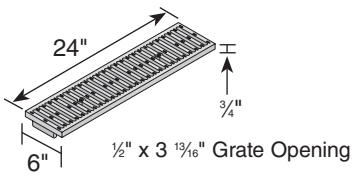
- Prevents joint movement during installation
- No extra clamps or screws needed

**Specifications:** NDS Dura Slope™ is a 6<sup>5</sup>/<sub>8</sub>" wide, 48" long trench drain system with a built-in slope of 0.7%. Each channel section is molded of gray structural foam polyethylene with UV inhibitors and has a 4" inside diameter with a 2" radius bottom. The system consists of 4-foot channel sections including 24 pre-sloped channel sections and 9 neutral channel sections. The sloped channel sections enable the system to extend to a length of 96 feet with a continuous slope. Add neutral channels to extend the system run to an excess of 132 feet. By incorporating central collection through the use of the catch basin assembly, the Dura Slope™ trench drain system can be extended to lengths up to 266 feet. Dura Slope™ channels are designed with the pre-installed ProFit™ locking system, which maintains structural integrity during installation and locking devices for the grating. LeveLoc™ integral re-bar supports are located at 24" intervals along each side of the channel and contain an internal protruding knob designed to grip #3 or #4 re-bar (3/8" – 1/2") for easier channel height adjustment during installation. DuraLoc™ tongue and groove ends connect allowing for a precise fit and ensure straight channel runs, incorporating an integral snap-lock feature that prevents joint movement during channel installation. Each channel section is molded with a bottom outlet allowing for system versatility and ensuring proper drainage. Expansion joints must be provided parallel to each side of the drain run.

Part No.	Description	Color	Pkg. Qty.	Wt. (lbs.)	Ea. Class	
DS-090N	3.99" Deep Neutral Dura Slope Channel	Gray	1	7.45	25DS	For Grates, see page 42.
DS-091	3.99" to 4.34" Deep Dura Slope Channel	Gray	1	7.52	25DS	
DS-091N	4.34" Deep Neutral Dura Slope Channel	Gray	1	7.81	25DS	
DS-092	4.34" to 4.67" Deep Dura Slope Channel	Gray	1	7.92	25DS	
DS-093	4.67" to 5.00" Deep Dura Slope Channel	Gray	1	8.27	25DS	
DS-094	5.00" to 5.34" Deep Dura Slope Channel	Gray	1	8.64	25DS	
DS-094N	5.34" Deep Neutral Dura Slope Channel	Gray	1	8.93	25DS	
DS-095	5.34" to 5.68" Deep Dura Slope Channel	Gray	1	8.99	25DS	
DS-096	5.68" to 6.01" Deep Dura Slope Channel	Gray	1	9.36	25DS	
DS-097	6.01" to 6.35" Deep Dura Slope Channel	Gray	1	9.74	25DS	
DS-097N	6.35" Deep Neutral Dura Slope Channel	Gray	1	10.04	25DS	
DS-098	6.35" to 6.69" Deep Dura Slope Channel	Gray	1	10.11	25DS	
DS-099	6.69" to 7.02" Deep Dura Slope Channel	Gray	1	10.48	25DS	
DS-100	7.02" to 7.36" Deep Dura Slope Channel	Gray	1	10.86	25DS	
DS-100N	7.36" Deep Neutral Dura Slope Channel	Gray	1	11.16	25DS	
DS-101	7.36" to 7.69" Deep Dura Slope Channel	Gray	1	11.23	25DS	
DS-102	7.69" to 8.03" Deep Dura Slope Channel	Gray	1	11.60	25DS	
DS-103	8.03" to 8.37" Deep Dura Slope Channel	Gray	1	11.98	25DS	
DS-103N	8.37" Deep Neutral Dura Slope Channel	Gray	1	12.27	25DS	
DS-104	8.37" to 8.70" Deep Dura Slope Channel	Gray	1	12.34	25DS	
DS-105	8.70" to 9.04" Deep Dura Slope Channel	Gray	1	12.71	25DS	
DS-106	9.04" to 9.37" Deep Dura Slope Channel	Gray	1	13.07	25DS	
DS-106N	9.37" Deep Neutral Dura Slope Channel	Gray	1	13.39	25DS	
DS-107	9.37" to 9.70" Deep Dura Slope Channel	Gray	1	13.4	25DS	
DS-108	9.70" to 10.05" Deep Dura Slope Channel	Gray	1	13.83	25DS	
DS-109	10.05" to 10.38" Deep Dura Slope Channel	Gray	1	14.20	25DS	
DS-109N	10.38" Deep Neutral Dura Slope Channel	Gray	1	14.50	25DS	
DS-110	10.38" to 10.71" Deep Dura Slope Channel	Gray	1	14.57	25DS	
DS-111	10.71" to 11.05" Deep Dura Slope Channel	Gray	1	14.95	25DS	
DS-112	11.05" to 11.39" Deep Dura Slope Channel	Gray	1	15.32	25DS	
DS-112N	11.39" Deep Neutral Dura Slope Channel	Gray	1	15.6	25DS	
DS-113	11.39" to 11.72" Deep Dura Slope Channel	Gray	1	15.69	25DS	
DS-114	11.72" to 12.06" Deep Dura Slope Channel	Gray	1	16.06	25DS	



Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

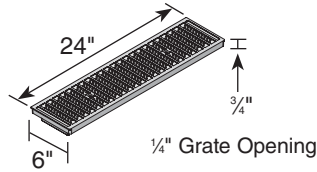


Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
660	2 ft. Channel Grate	White	24 ft	2.92	25DS	NDS #660, #661, #662, #663, #664, 2 ft. Structural Foam Polyolefin secured channel grate with UV inhibitor. Open surface area 20.61 square inches per foot. 27.00 GPM per foot.
661		Dark Gray	24 ft	2.92	25DS	
661LG		Gray	24 ft	2.92	25DS	
662		Green	24 ft	2.92	25DS	
663		Black	24 ft	2.92	25DS	
664		Sand	24 ft	2.92	25DS	

Use with Dura Slope Drains (page 41), Dura Slope Catch Basins (page 43).



(See pg. 48) ADA Compliant

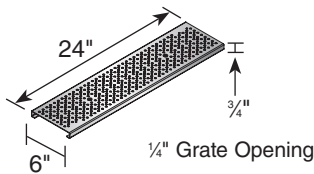


DS-670	2 ft. Plastic Perforated Channel Grate	Gray	24 Ft.	3.0	25DS	NDS #DS-670, 2' Structural Foam Polyolefin, secured channel grate with UV inhibitor, light traffic rated, heel-proof, ADA compliant. Open surface area 9.36 square inches per foot. 12.2 GPM per foot.
--------	--	------	--------	-----	------	--

Use with Dura Slope Drains (page 41), Dura Slope Catch Basins (page 43).



(See pg. 48) ADA Compliant/Heel-proof

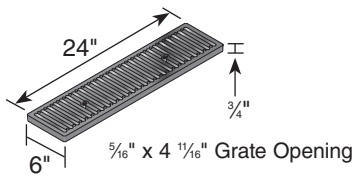


DS-226	2 ft. Stainless Steel Perforated Channel Grate	Steel	24 Ft.	3.22	25DS	NDS #DS-226 Stainless Steel grate, light traffic rated, heel-proof, ADA compliant. Open surface area 7.92 square inches per foot. 10.4 GPM per foot.
DS-228	2 ft. Galvanized Steel Perforated Channel Grate	Steel	24 Ft.	3.22	25DS	

Use with Dura Slope Drains (page 41), Dura Slope Catch Basins (page 43).



(See pg. 48) ADA Compliant/Heel-proof

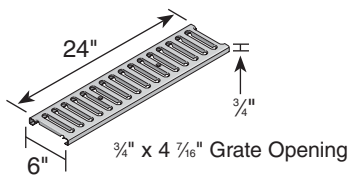


DS-231	2 ft. Cast Iron Channel Grate	Black	1	15.00	25DS	#DS-231 2 ft. Heavy Duty Cast Iron Channel Grate. NDS #DS-232, 2 ft. Heavy Duty Ductile Iron Channel Grate. Open surface area 15.27 square inches per foot. 20.00 GPM per foot. H-20 Load Rating.
DS-232	2 ft. Ductile Iron Channel Grate	Black	1	16.00	25DS	

Use with Dura Slope Drains (page 41), Dura Slope Catch Basins (page 43).



(See pg. 48) ADA Compliant/Heel-proof



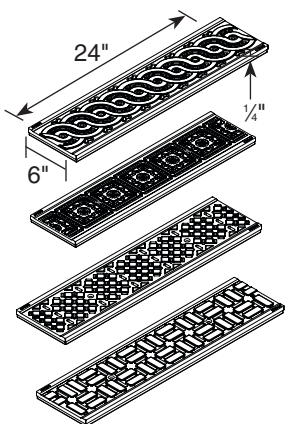
DS-221	2 ft. Galvanized Steel Channel Grate	Steel	24 ft	4.00	25DS	NDS #DS-221, 2 ft. Galvanized Rolled Steel Grate. Open surface area 19.85 square inches per foot. 26.00 GPM per foot.
--------	--------------------------------------	-------	-------	------	------	---

Use with Dura Slope Drains (page 41), Dura Slope Catch Basins (page 43). Includes bracket to attach grate to channel and screws.



(See pg. 48)

## DECORATIVE GRATES



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
DS-601	Weave Pattern	Raw Iron	1	14.5	25DS	Decorative grates are made of ductile iron. Additional colors available: Black (K), White (W), Silver (S), Bronze (Z), Green (G), Blue (B), Orange (O), Gray (Y), Brown (N)
DS-602	Diamond Pattern	Raw Iron	1	14.3	25DS	
DS-603	Tile Pattern	Raw Iron	1	14.7	25DS	
DS-604	Brick Pattern	Raw Iron	1	14.3	25DS	
DS-609	Deco Slot	Raw Iron	1	14.5	25DS	

Use with Dura Slope Drains (page 41), Dura Slope Catch Basins (page 43).



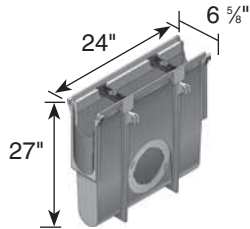
(See pg. 48) ADA Compliant/Heel-proof

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

**PRE-SLOPED CHANNEL DRAIN**

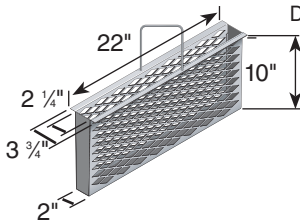
**DURA SLOPE™ CHANNEL DRAINS**

**Specifications:** NDS Dura Slope™ in-line catch basins are a 6-5/8" wide, 24" long gray structural foam polyethylene catch basin with UV inhibitors. In-line catch basins are designed to provide an optional in-line junction or outlet piping connection location for NDS Dura Slope™ trench drain systems. Each Dura Slope™ Catch Basin Module is 2 feet long and 2 feet deep. The catch basin modules will fit all depth ranges of the Dura Slope™ trench drains. Dura Slope™ in-line catch basins are provided with the pre-installed ProFit™ locking system, which maintains structural integrity during shipping and installation, and provides locking devices for the grating. Leveloc™ integral re-bar supports located along each side of the catch basin contain an internal protruding knob to grip #3 or #4 re-bar (3/8" – 1/2") providing height adjustment during installation. DuraLoc™ tongue and groove ends connect allowing for a precise fit and ensure straight channel runs. DuraLoc™ joints incorporate a snap-lock feature that prevents joint movement during channel and basin installation. Basin inlets are to be sized as required to accept matching trench drain by the use of a saw during installation eliminating the need for multiple basin configurations. The Dura Slope™ in-line catch basin has an outlet on both sides of the basin. NDS universal basin outlets are used to adapt basin to 3", 4", 6" and 8" pipe. Plugs are also available if one outlet is preferred. All universal outlets are ordered separately (see page 24 for details). For additional catch basin options see the NDS Drainage Catalog or NDS Dura Slope Catalog. Expansion joints must be provided parallel, but not immediately adjacent to each side of the drain run and crack control joints utilized at right angles to the channel for installation in concrete. One Universal Adaptor Plug (part number 1206) included with each catch basin.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
DS-340	Dura Slope™ in-line Catch Basins	Gray	1	12.00	25DS








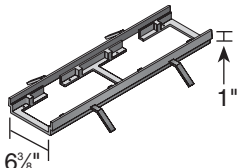
DS-340 replaces DS-140 (DS-140 will not work with channels DS-090N to DS-100 and DS-113 or deeper. Available for use of one or two outlets  
Use #1242, #1243, #1245, #1266, #1206, or #1888 Universal Outlets (see page 25).



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
DS-240	Dura Slope™ Trash Bucket	Steel Zinc Plated Steel	1	5.0	25DS

Note – DS-240 Trash Bucket is not for use with the DS-200 Ductile Iron Frame.



**DURA-SLOPE™ ACCESSORIES**

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
 DS-122	ProFit™ Grate Lock	Black	8	0.80	25DS
 DS-123	Dura Slope Frame & End Cap Screws PH. # 6 x 3/4" Use on DS-124 universal end cap & DS-127 Universal End Outlet downstream for (male) end. Use to attach DS-200 DI Frame to Channel	Steel	12		25DS
 DS-224	Universal End Cap Replaces DS-124, which will not work with DS-113 or deeper channels. Slides into upstream (female) end, Requires DS-123 screws on downstream (male) end.	Gray	8	0.63	25DS
 DS-227	Universal End Outlet Replaces DS-127, which will not work with DS-113 or deeper channels. Requires DS-123 screws for use on downstream (male) end. Fits to 4" S&D Pipe	Gray	6	0.75	25DS
 DS-126	Bottom Outlet Adapter Fits to 4" S&D Pipe. DS-126 not required for Sch. 40 connection.	Gray	6	0.53	25DS
 629	Grate Screws FH # 1/4 - 20 x 1 1/2" Use with Grate # DS-231, DS-232, DS-670, DS-226 and 660-665. Use to secure grates in applications without DS-200 DI Frame	Steel	40	0.70	25PF
 DS-225	Dura Slope Ductile Iron Frame Screws FH # 1/4 - 20 x 2 1/2" Use to secure grates in applications that utilize DS-200 DI Frame	Steel	12		25DS
 DS-200	Dura Slope Ductile Iron Frame Use with Dura Slope Drains (page 40), Dura Slope Catch Basins (page 42). To be used with DS-231 or DS-232 grates.	Black	1-2 ft	7.50	25DS



Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

# DURA SLOPE™ RADIUS COUPLING & GRATES

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class
	DSRC-097	6.35" Deep Neutral Dura™ Slope Radius Coupling	Gray	6	0.81	25DS
	DSRC-100	7.36" Deep Neutral Dura™ Slope Radius Coupling	Gray	6	0.82	25DS
	DSRC-103	8.37" Deep Neutral Dura™ Slope Radius Coupling	Gray	6	0.83	25DS
	DSRC-106	9.37" Deep Neutral Dura™ Slope Radius Coupling	Gray	6	0.84	25DS
	DS-660MG	1.25" Plastic Slotted Radius Coupling Grate	White	6	0.08	25DS
	DS-661MG	1.25" Plastic Slotted Radius Coupling Grate	Dark Gray	6	0.08	25DS
	DS-661LGMG	1.25" Plastic Slotted Radius Coupling Grate	Light Gray	6	0.08	25DS
	DS-662MG	1.25" Plastic Slotted Radius Coupling Grate	Green	6	0.08	25DS
	DS-663MG	1.25" Plastic Slotted Radius Coupling Grate	Black	6	0.08	25DS
	DS-664MG	1.25" Plastic Slotted Radius Coupling Grate	Sand	6	0.08	25DS
	DS-665MG	1.25" Plastic Slotted Radius Coupling Grate	Brick Red	6	0.08	25DS
	DS-681LGMG	1.25" Plastic Standard Radius Coupling Grate	Light Gray	6	0.16	25DS
	DS-232MG	1.25" Ductile Iron Radius Coupling Grate	Black	6	0.93	25DS

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

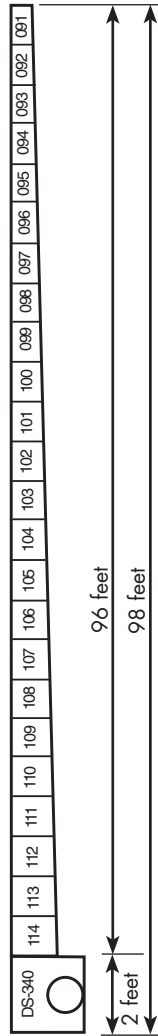
## Dura Slope System Profiles

### Neutral run

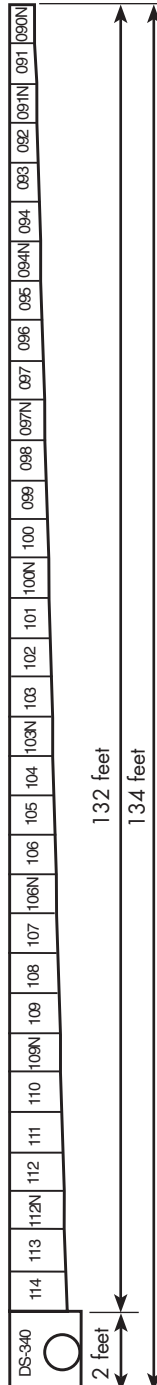


\*Any neutral channel can be used in this application.

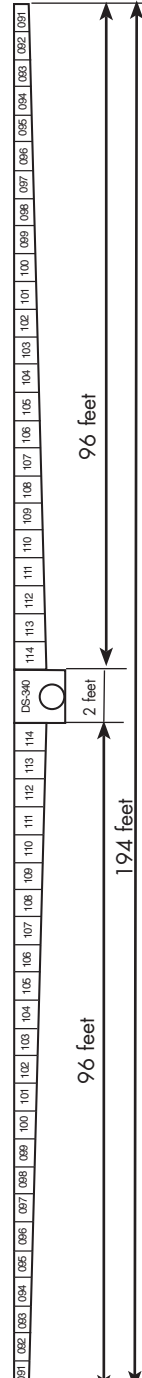
### Linear fall without neutrals



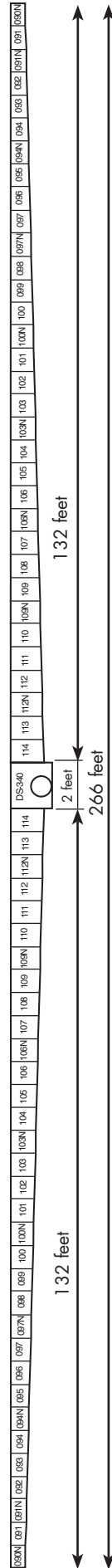
### Linear fall with neutrals



### Counter directional fall without neutrals



### Counter directional fall with neutrals



Note: Drawings are not to scale. See previous pages for actual product dimensions.

The following installation instructions are recommendations for typical installations. Please refer to project plans and specs for any deviation to these instructions.

### 1 Excavate a trench for the channels

Excavate a trench with a minimum concrete-surround, by load class:

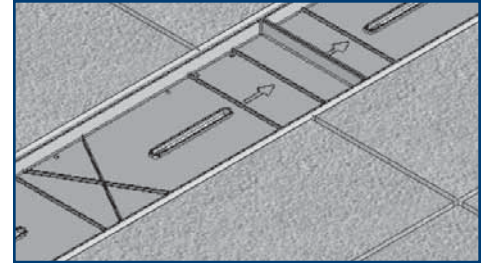
**Note:** The channel must be recessed 1/8" for pedestrian traffic and 1/4" for vehicular traffic.

### 2 Lay the channels alongside the trench

- Start the layout at the drain outlet with the deepest (highest numbered) channel section, proceeding to the shallowest (lowest numbered) channel section.
- Point the arrows on each channel section towards the drain outlet.

### 3 Locate the expansion joints

Plan to install expansion joints parallel and perpendicular to channel according to plan specification. Locate perpendicular expansion joints crossing the channel at the channel joints (if possible).



**Expansion joints**

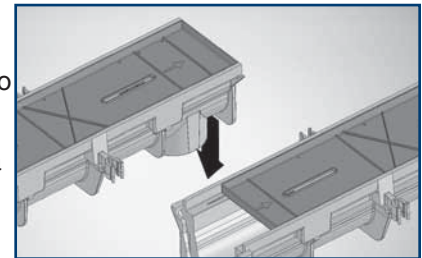
### 4 Assemble the drain outlet

- Assemble the drain outlet with DS-224 End Cap, End Outlet DS-227, or using a Catch Basin DS-340.
- Use End Cap DS-224 at the shallowest end of the run.
- Set a string line in trench along each side of where channel will be placed, at final elevation of channel. If using ductile iron frame place string line 1" below finished grade to accommodate the frame.

### 5 Assemble the channels

The outlet will be at the deepest end. Assemble the channel section from the deepest to the shallowest.

- Place a bead of butyl caulking or silicone sealant in the channel's joint or groove (if a water tight seal is required).
- Snap the channel sections together in multiples of two.

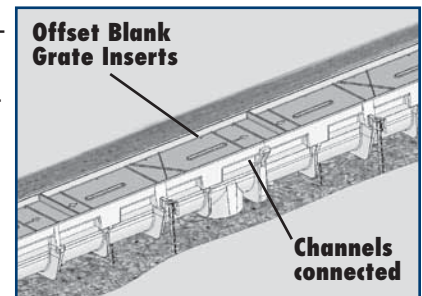


**Joined channels**

**Note:** If using Ductile Iron Frames skip to **Step 5A**.

- Remove the screws from the end of the Blank Grate Insert located on the male side of the channel (do not remove the center screws from the insert). Start at the drain outlet.
- Loosen the center screws on the Blank Grate Insert; slide the Insert in the direction of the male end (downstream) so it overhangs or is staggered.
- Align channel with Blank Grate Insert for straightness. Use self tapping screws to fasten the Inserts to the channel; ensure the ends are flush with the edge of the Insert. Cover the slots on the Insert with tape to prevent concrete from getting into the channel.
- Place the pre-assembled channel sections in the trench beginning from the outlet end.

**Tip:** Cover screw heads and the slots in the Blank Grate Insert with tape for easy removal after the concrete is poured.



**Offset blank grate inserts**

### 5A If using Ductile Iron Frame: Assemble the channels

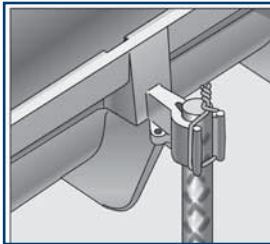
- Assemble the channels. Snap the channel sections together in multiples of two.
- Remove all Blank Grate Inserts from all channel sections.
- Secure the Ductile Iron Frames to the channel using the DS-123 screws. Install iron grates using DS-225 screws.
- Apply a covering or tape to the grates for protection and to prevent concrete from entering the channel.

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

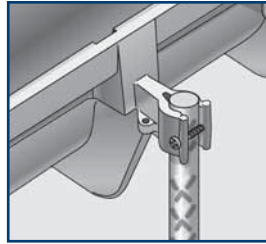


**6 Install the rebar for each channel section assembled**

- Insert rebar into the Leveloc rebar support. Drive rebar straight into the ground about 6” to 12” or until rebar is firmly held in place.
- Set channel to desired grade level and align for straightness using string line.
- Continue attaching pre-assembled channel sections and install rebar until run is complete.
- Proceed with final adjustments for grade level and straightness using wire tie or self-tapping screws, secure the rebar to the Leveloc rebar support.



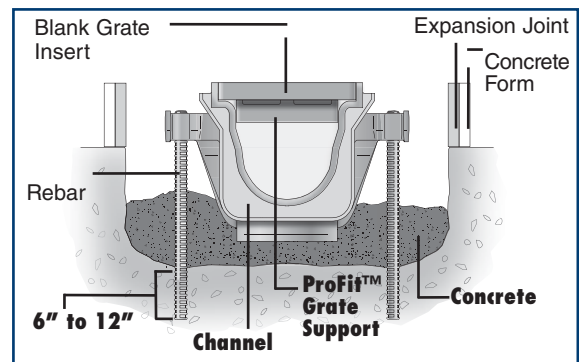
**Wire support**



**Screw support**

**7 Cradle the channel with concrete**

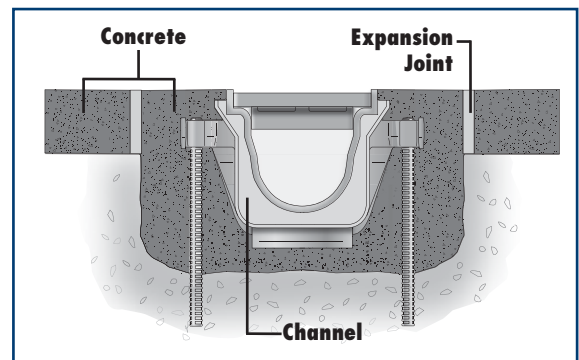
- Place concrete around base of rebar post on each side of the channel as well as underneath the channel between the two rebar posts.
- Repeat concrete cradle for each pair of rebar posts.



**Concrete cradle**

**8 Pour the concrete in the channel trench**

- Pour equal amounts of concrete on each side of the channel to prevent the channel from shifting.
- Vibrate the concrete to avoid bubbles or voids. Installations in asphalt require the same concrete encasements.

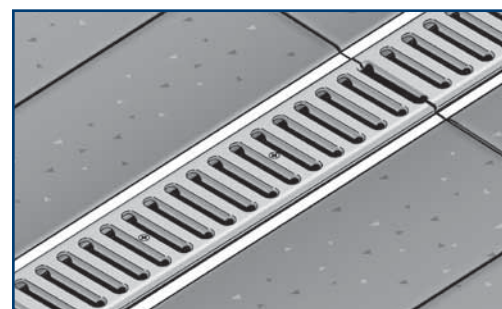


**Channel cross-section for pour**

**9 Clean up the installation**

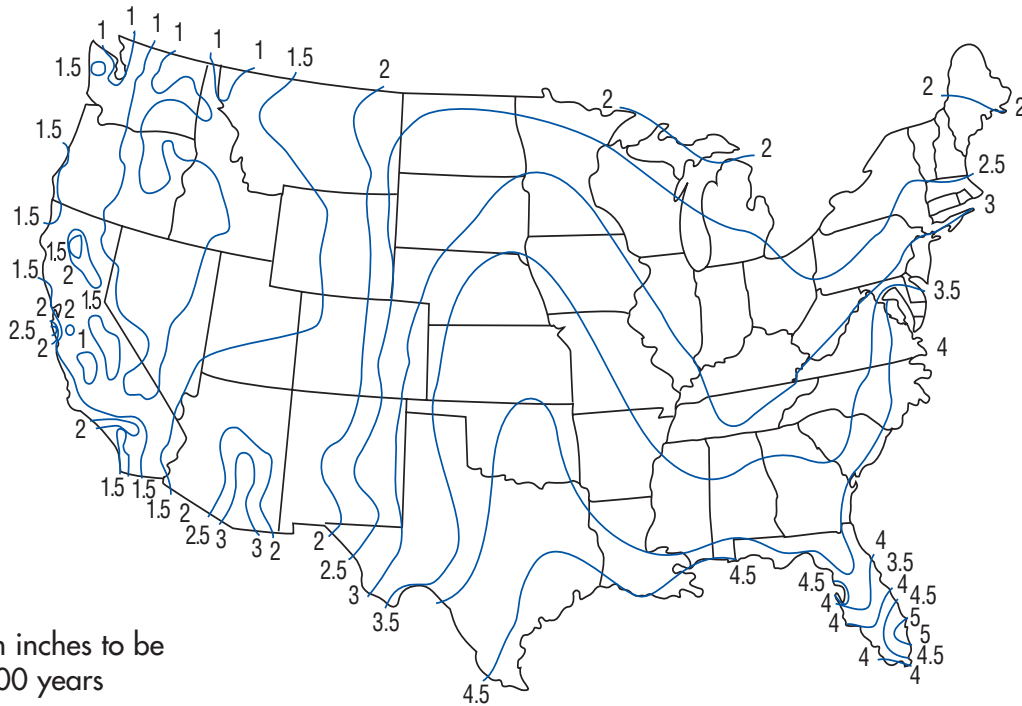
- After the concrete has set for a minimum of 24 hours, remove the Blank Grate Inserts.
- Install the grates.
- Ensure that all the grates are securely fastened.

**Note:** Follow the concrete manufacturer’s recommendations for set-up time and loading.



**Finished installation**

# 100 YEAR RAINFALL MAP



One hour rainfall in inches to be expected once in 100 years

## LOAD RECOMMENDATION GUIDE

### Load Recommendation Guide



#### Class A

- Loads of 1-60 psi.
- Recommended for pedestrians, bicycles and wheel chair traffic.



#### Class B

- Loads of 61-175 psi.
- Recommended for medium-duty pneumatic tire traffic, autos and light trucks at speeds less than 20 m.p.h.



#### Class C

- Loads of 176-325 psi.
- Recommended for heavy-duty pneumatic tire forklifts and tractor trailers at speeds less than 20 m.p.h., H-20 rated.



#### Class D

- Loads of 326-575 psi.
- Recommended for heavy-duty hard tire forklifts at speeds less than 20 m.p.h., H-20 rated.

**Note:** Some installations may require a concrete collar to meet load rating. Loads are based on encasing product in concrete. Product must be installed using NDS instructions.

# **ndspro.com**

From installation details to online catalogs to educational materials;  
**ndspro.com** is your one source for all information needed  
in order to use and specify NDS products.

## TERMS AND CONDITIONS OF SALE

**Terms:** Standard terms are 2% NET 10 days. A 1 1/2% per month (18% per annum) service charge will be added to all past due accounts. All invoices are to be paid in US Currency. Title and risk of loss pass to buyer upon shipment.

**Freight Allowance:** Freight prepaid on orders of \$1000.00 NET or more. Prepaid freight levels are based on shipments to one location only. It is the responsibility of the customer to determine if his purchase order meets the minimum freight allowance required. NDS reserves the right to select the carrier and point of shipment.

**Canadian Orders:** Freight prepaid on orders of \$1,500.00 (US\$) NET or more. Custom DuraCast only orders freight prepaid on orders of \$2500.00 (US\$) NET or more.

The above freight policies apply to the continental US and Canada only. For other areas please contact NDS.

**Errors & Claims:** All claims for shortage in shipment or damaged material must be noted on the "Bill of Lading" and a written request for credit submitted to NDS within 15 days of shipment. NDS responsibility ceases upon delivery to the carrier.

**Returned Goods:** Returned goods will be accepted only after written approval and shipping instructions are received from NDS. A return goods authorization number is required and must be on all cartons, documents, and correspondence. All returns are subject to a 25% restocking charge, freight cost of returned goods (plus "out freight if applicable"). A higher restocking charge may be assessed against any return requiring extraordinary handling costs.

**Minimum Order:** \$100.00 minimum order net billing. A 15% broken box charge will be added for other than full box quantities.

**Limited One Year Warranty:** The liabilities of NDS are limited solely and exclusively to replacement as set forth in our standard "Statement of Warranty", alone and do not include any liability for incidental, consequential or other damage of any kind whatsoever, whether any claim is based upon theories of contract, warranty, negligence or tort and without any limitations and do not include shipping charges, labor, installation or any other losses or expenses incurred in operation of any replacement specialty item or fitting. NDS drainage products are designed to be used for exterior surface drainage only.

**Limited Lifetime Warranty:** NDS warrants to the original owner of its NDS catch basins, grates, channel and Pro Series valve boxes, subject to the conditions set forth in this warranty, that NDS catch basins, grates, channel and Pro Series valve boxes will remain free from manufacturing defects.

All NDS products are guaranteed against defects resulting from faulty workmanship or materials. Claims for labor costs and other expenses required to replace defective products or repair of any damage resulting from the use thereof will not be allowed by NDS. Our liability is limited to replacement of products acknowledged by NDS to be defective.

**Exclusive Warranties and Remedies:** The foregoing remedies are exclusive and are given and accepted in lieu of (i) any and all other warranties, express or implied, including without limitation the implied warranties of merchantability and fitness for particular purpose; and (ii) any obligation, liability, right, claim or remedy in contract or tort, whether or not arising from NDS, Inc.'s negligence, actual or imputed. The remedies of customer shall be limited to those provided herein to the exclusion of any and all other remedies including, without limitation, incidental or consequential damages. No agreement varying or extending the foregoing warranties or these limitations will be binding on NDS, Inc., unless such is signed in writing by an authorized officer of NDS, Inc.

The liability of NDS, Inc., hereunder shall be limited to restoring to good working order, provided that NDS, Inc., is not required to restore the product to good working order when such failure is due to causes beyond NDS, Inc.'s control, including but not limited to, acts of God, acts of civil or military authority, priorities, strikes, floods, epidemics, war, riots, and other causes that are beyond the manufacturers control.

These provisions are complete and exclusive statements of all terms and conditions between NDS, Inc., and the consumer. These provisions may not be varied, supplemented, qualified or interpreted by any prior course of dealings, written or oral or by trade usage. No NDS, Inc. agent, officer or employee has authority to make any representation, promise or warranty concerning these provisions.



- Catch Basins & Grates
  - Channel Drains
  - Dura Slope™ Pre-Sloped Trench Drain Systems
  - EZflow® Gravel Free French Drain
  - Flo-Well® Manufactured Dry Well
  - Flo Control™ Ball Valves
- Flo Control™ Check Valves
  - Flo Control™ Transition, Compression & Repair Fittings
  - Backwater & Diverter Valves
  - Sewer & Drain Fittings
  - Permeable Pavers
  - Root Barriers
- Valve Boxes
  - Meter Boxes
  - Flexible Couplings
  - Flexible Saddles
  - Agrifim™ Drip Irrigation

### PARTIAL CLIENT LIST

The White House  
Los Angeles Country Club  
Pebble Beach  
Cypress Point  
Spyglass Hill  
PGA West Stadium Golf Course  
Princeville Golf Course  
Ritz Carlton  
Santa Barbara Zoo  
Sheraton Hotels

Sherwood Country Club  
Soldier Field  
Del Webb & Sun City Country Clubs  
Westin Hotels  
Riviera Country Club  
Buchart Gardens  
Disney World  
Disneyland  
Florida University  
Harbortown Golf Links

Hyatt Grand Champions  
La Quinta Resort  
Marriott Hotels  
MGM Grand Hotel & Theme Park  
Mirage Hotel  
Jack La Lane Athletic Clubs  
Olympic Training Center

#### Regional Warehouses:

- Lynnwood, WA
- Mineola, TX
- Philadelphia, PA
- Powder Springs, GA
- Visalia, CA
- Fresno, CA

Address/Telephone  
P.O. Box 339 • 851 N. Harvard Avenue  
Lindsay, CA 93247  
Phone: 800-726-1994  
Fax: 800-726-1998  
International Phone: 559-562-9888  
International Fax: 559-562-4488  
e-mail: nds@ndspro.com

**www.ndspro.com**

#### FOR TECHNICAL INFORMATION, CONTACT:

Technical Services  
(888) 825-4716  
TechService@ndspro.com