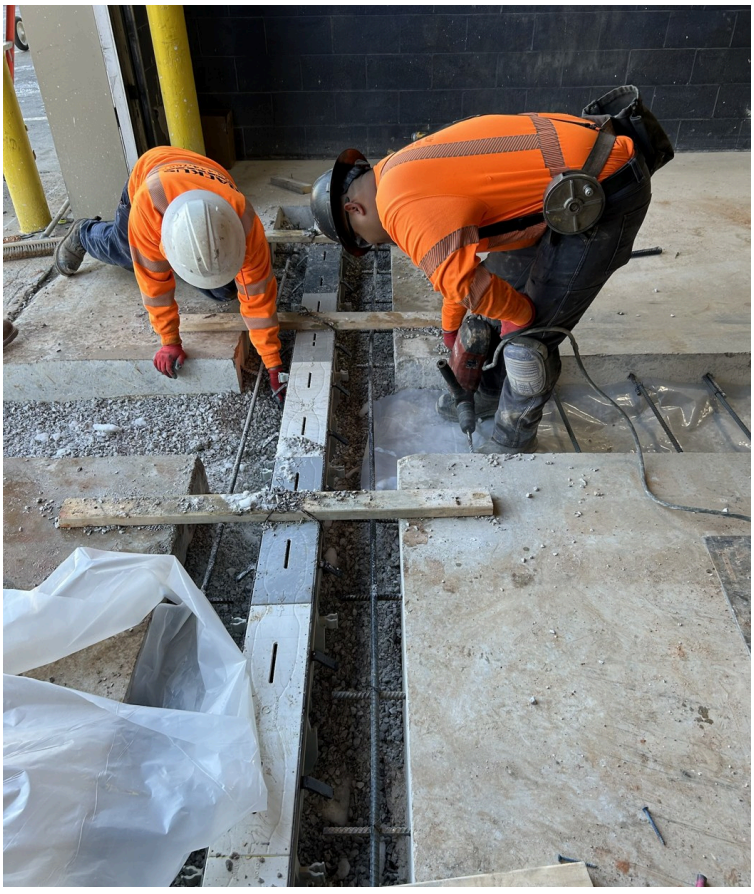
Swiftdrain 600 with HDPE grates

Installation guide

6-inch pre-sloped HDPE trench drain with ADA slotted, perforated and paw-proof HDPE grates. Load classes A and B.



ADA SLOTTED GRATE COLORS

- Gray
- Green
- White
- Sand
- Brick red

Plus gray perforated and paw-proof

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October 2026

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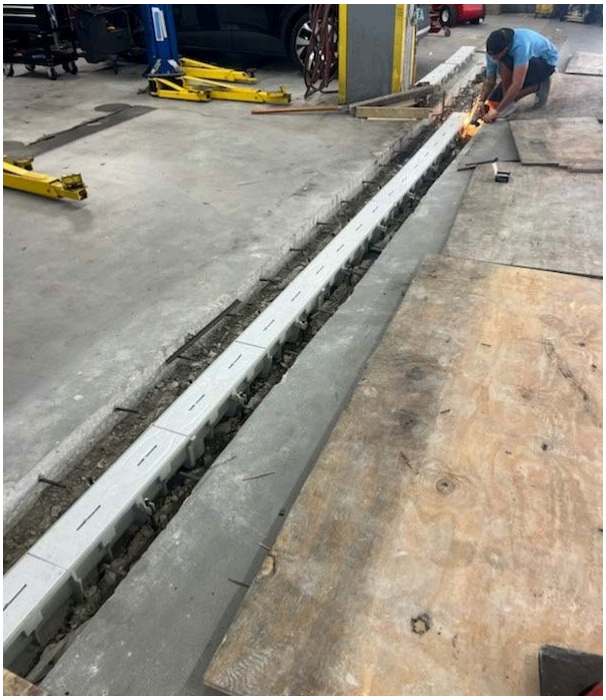


A run staked to line and grade in a saw-cut shop floor, ready for the pour.

HOW TO USE THIS GUIDE

Steps 1 to 10 follow the order of work on site, starting at the outlet and working uphill. Read the whole guide before you dig: the planning page, the load class table and the channel chart set your trench size and depth.

WHAT'S DIFFERENT WITH HDPE GRATES

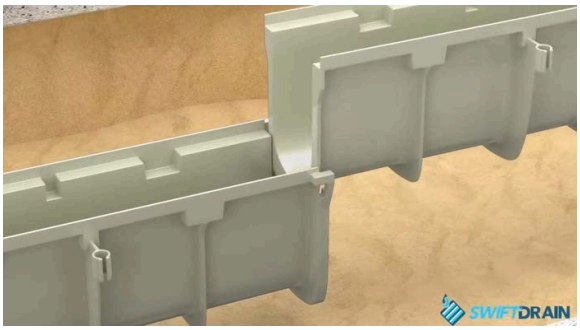
HDPE grates are for pedestrian and light-vehicle traffic only (Class A and B). They are lighter, never rust and come in colors, but they need protecting from concrete, hot asphalt and heavy loads during construction. Those points are called out wherever they apply.

QUESTIONS Call Swiftdrain at 646-227-0910 or email technical@swiftdrain.com for help with a layout, a load class or an installation.

SYSTEM AT A GLANCE

Swiftdrain 600 with HDPE grates

Channel	Gray structural HDPE with UV inhibitors, pre-sloped
Top width	6 5/8 in nominal; grates are 6 in wide
Flow path	4 in wide with a 2 in radius bottom
Section length	4 ft channels; 2 ft grates, two per channel
Built-in slope	0.7%, a 0.336 in fall over each sloped section
Sections	24 sloped and 9 neutral, marked N
Run length	96 ft of continuous slope; 132 ft with neutrals; longer with repeated neutrals and extra outlets
Invert depth	4.00 in at the shallowest to 12.06 in at the deepest
Flow capacity	75 to 396 gpm, depending on section depth
HDPE grates	ADA slotted in gray, green, white, sand and brick red; gray perforated; paw-proof
Grate fixing	Two stainless steel lockdown screws per grate into a locking bar
Load classes	A15 and B125 (EN 1433) with HDPE grates, fully concrete-encased
Outlets	End outlet, bottom knockout (4 in Sch. 40) on every section, in-line catch basin



Two channel sections at a tongue-and-groove joint.

WHERE IT GOES

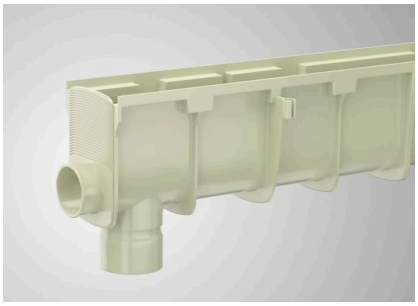
Patios, pool decks, walkways and accessible routes, residential driveways and garages, landscape and turf edges, plazas, kennels and veterinary floors.

HEAVIER TRAFFIC Delivery trucks, forklifts or anything above Class B need the Swiftdrain 600 with ductile iron grates and frames. Use the standard Swiftdrain 600 installation guide for those jobs.

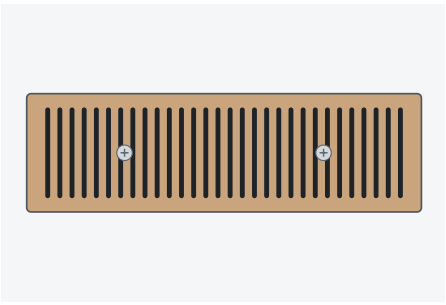
COMPONENTS

Know your components

Channel section



End outlet and bottom outlet



HDPE ADA slotted grate, 24 in

SLOPED AND NEUTRAL CHANNELS

4 ft sections. Sloped sections carry a number and arrows that point to the outlet. Neutral sections (N) hold one depth.

END OUTLET AND BOTTOM OUTLET

The end outlet fits the deep end for 3, 4 or 6 in pipe. Each channel has a bottom knockout for 4 in Sch. 40.

HDPE GRATES

6 in wide by 2 ft long, two per channel, in the style and color ordered. The grate and encasement set the load class.

BLANK GRATE INSERTS

Keep concrete out of the channel during the pour and bridge the joints while you set the run.

END CAP

Closes the shallow start of every run, and the low end when you drain through the bottom outlet.

CATCH BASIN

In-line basin with outlets on both sides and an optional debris bucket. Recommended on landscape, pool and kennel runs.

LOCKING BARS AND LOCKDOWN SCREWS

Each grate is held by two stainless steel screws that thread into a locking bar spanning the channel.

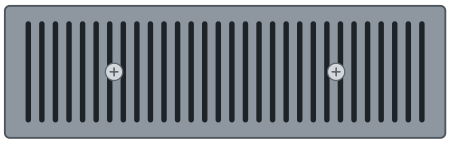
REBAR SUPPORTS

Molded on both sides of each section. #4 rebar stakes through them hold line and grade and stop flotation.

HDPE GRATE OPTIONS

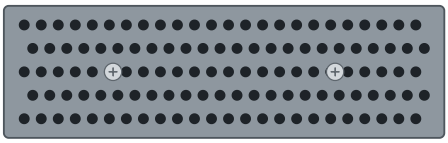
Pick the grate for each zone

All three styles fit every Swiftdrain 600 channel, lock down the same way and can be mixed on one run, for example paw-proof inside a kennel and ADA slotted along the walkway outside it.



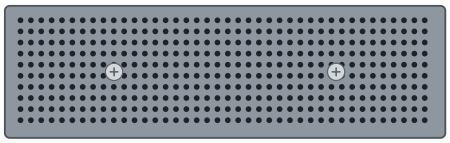
ADA slotted

Transverse slots for high intake. Molded-through color: gray, green, white, sand or brick red.



Gray perforated

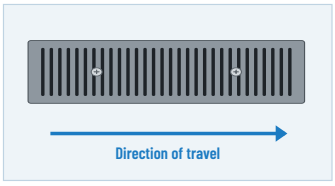
Round openings in gray polymer. Friendly to heels, strollers and bare feet; suits pool decks and plazas.



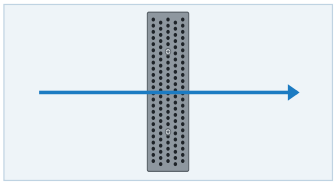
Paw-proof

Small round holes so paws and claws cross safely. Made for kennels, shelters and veterinary floors.

ORIENTING GRATES ON ACCESSIBLE ROUTES



Drain beside the route: ADA slotted



Drain across the route: perforated

The 2010 ADA Standards (§302.3) limit openings in a walking surface to a size that won't pass a ½ in sphere and ask for long openings to run across the main direction of travel. The slots run across the grate, so the slotted grate suits a drain that runs beside a path. Where the drain crosses an accessible route, use the perforated or paw-proof grate for that crossing, and keep the grate no more than ¼ in below the surface.

ORDERING Mark the grate style and color for each zone on the plan. Swiftdrain schedules each 2 ft grate by location so the right grates arrive for each part of the run.

BEFORE YOU START

Plan before you dig

Most installation problems start before the first shovel. Settle these points with the plans or the owner first.

- **Call 811.** Have buried utilities marked a few working days before you dig. The call is free.
- **Confirm the load class.** HDPE grates cover Class A (people, bikes) and Class B (cars, light vehicles). If trucks or forklifts will ever cross, switch to ductile iron grates now.
- **Pick grate styles by zone.** ADA slotted, perforated or paw-proof, and the color for each zone.
- **Find the outlet.** Storm line, drywell or daylight. The outlet is the deepest point of the run.
- **Confirm elevations.** The grate stays level with the finished surface; the invert does the falling.
- **Pitch the surface** toward the drain from both sides, about 1 to 2%.
- **Split the run into 4 ft sections** and pick numbers so the deepest lands at the outlet. Long runs can fall from both ends into a center catch basin.
- **Mark expansion joints** before forming (Step 3).
- **Check the weather.** Below 40°F, plan cold-weather protection for the concrete.

Paw-proof HDPE grate on a Swiftdrain 600 channel.

SAFETY Wear eye, hand and hearing protection, and control silica dust with water or a vacuum shroud when saw-cutting concrete. Local codes and the project engineer's details take precedence over this guide.

BEFORE YOU START

Tools and materials

Have everything on site before you start. Once the cradle concrete is placed, the run has to be finished the same day.

TOOLS

- ☐ Shovel and a hand tamper or plate compactor
- ☐ Hammer and sledge for rebar stakes
- ☐ String line and line level, or a laser level
- ☐ Tape measure and marking paint or chalk
- ☐ Caulking gun
- ☐ Phillips screwdriver and cordless drill/driver with a clutch
- ☐ Pliers for tie wire
- ☐ Concrete vibrator
- ☐ Hole saw or drill for bottom-outlet knockouts
- ☐ Circular saw, jigsaw or reciprocating saw with a fine-tooth blade for channels and HDPE grates
- ☐ Concrete saw for retrofits in an existing slab
- ☐ Eye, hand and hearing protection

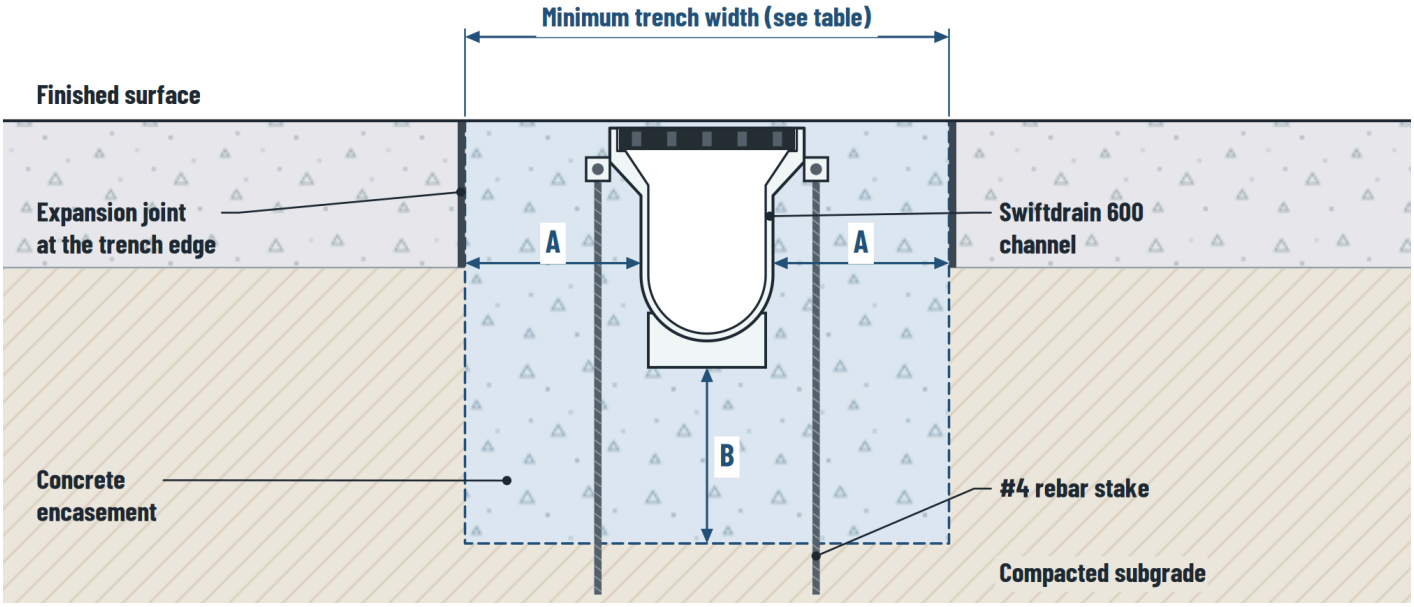
MATERIALS

- ☐ Swiftdrain 600 channels numbered for your run, plus any neutral sections
- ☐ End cap and outlet: end outlet, bottom outlet or catch basin
- ☐ HDPE grates in the styles and colors ordered, with locking bars and stainless lockdown screws
- ☐ Blank grate inserts for the pour
- ☐ #4 (1/2 in) rebar stakes long enough to drive 6 to 12 in into firm ground
- ☐ Tie wire and self-tapping screws
- ☐ Butyl caulk or silicone sealant for watertight joints
- ☐ Duct tape and plastic sheeting to protect inserts and grates
- ☐ Concrete, 2,500 psi minimum (Step 1)
- ☐ Expansion joint material
- ☐ Flexible rubber couplings for the outlet pipe
- ☐ Construction adhesive for field cuts

TIP Count your stakes before you go: every section has rebar supports on both sides, and each one gets a stake.

STORAGE Keep HDPE grates in their cartons, flat and out of direct sun, until Step 10. Colored grates stay cleaner that way.

1 Excavate the trench

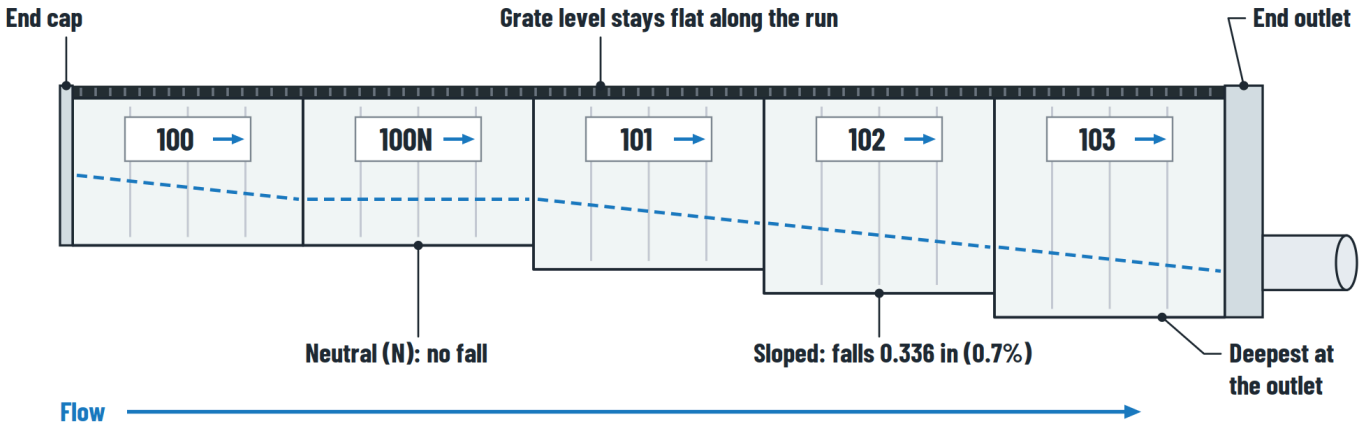


CLASS	TYPICAL TRAFFIC	EN 1433 TEST LOAD	EACH SIDE (A)	BELOW (B)	MIN. TRENCH WIDTH
A	Pedestrians, bicycles, patios, pool decks, kennels	A15, 3,372 lb	4 in	4 in	14 in
B	Driveways, garages, cars, light vehicles	B125, 28,100 lb	4 in	4 in	14 in
C and up	Not for HDPE grates. Use the Swiftdrain 600 with ductile iron grates and frames.				

1. Mark the centerline and dig to the 14 in minimum trench width.
2. Dig each section to its overall depth (Channel chart, page 19) plus 4 in. The trench steps deeper toward the outlet.
3. Remove loose material and compact the base.
4. Where the slab is thicker than 4 in, encase to the slab thickness.

CONCRETE At least 2,500 psi, or the slab mix if stronger. The engineer's specification governs.

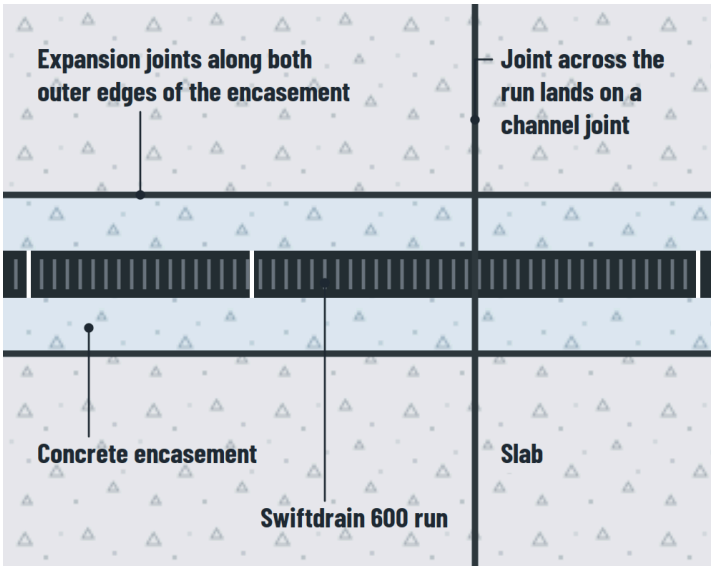
2 Lay out the channels



1. Lay the sections beside the trench in order before setting any of them.
2. Start at the outlet with the deepest (highest-numbered) section and work toward the shallowest.
3. Arrows on each section point toward the outlet; male ends point downstream.
4. Neutral sections (N) add length without adding fall.
5. Lay out the grates by zone at the same time, so each style and color lands where the plan shows it.

3 Plan the expansion joints

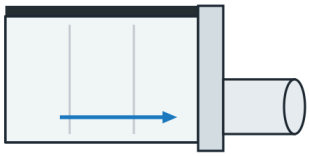
1. Run joints parallel to the drain along both outer edges of the encasement, never inside it.
2. Line up joints that cross the run with a channel joint.
3. If a joint must cross a channel body, seal it with flexible sealant.
4. Spacing and width follow the project plans.



4 Assemble the outlet

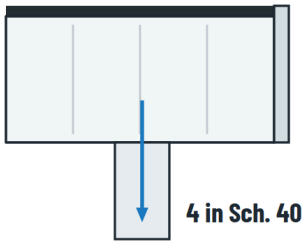
Build the outlet end first. It is the deepest point of the run, and every other section is set from it.

End outlet



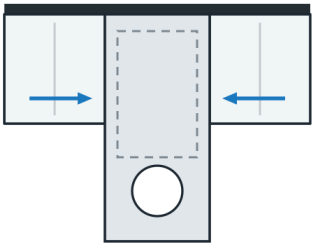
3, 4 or 6 in pipe

Bottom outlet



4 in Sch. 40

Catch basin



End cap

Shallow end of the run

END OUTLET

Fasten it flush to the deep end of the last channel. It transitions to 3, 4 or 6 in pipe.

BOTTOM OUTLET

Knock out or drill the bottom outlet of the deepest channel for 4 in Schedule 40 pipe, and cap the end.

CATCH BASIN

Set an in-line basin at the end of a run or anywhere along it. Two runs can fall into one basin from opposite ends. Fit the debris bucket on landscape, pool and kennel runs to catch leaves and hair.

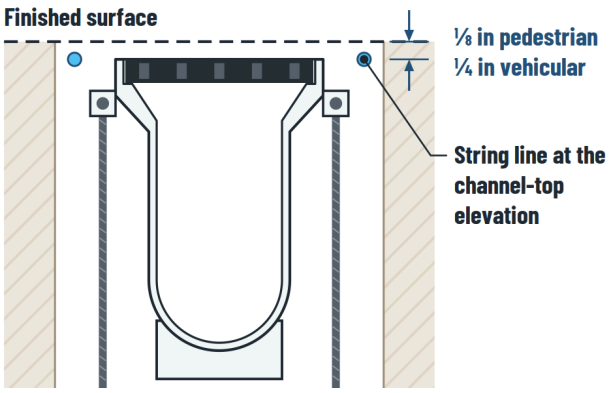
END CAP

Fasten an end cap to the shallow start of every run.

PIPE CONNECTION PVC solvent cement does not bond to polyethylene. Join the outlet to the drain line with a flexible rubber coupling and stainless band clamps, and seal any joint that must be watertight.

LAYOUT	TYPICAL MAXIMUM RUN
One direction	96 ft at full slope, 132 ft with all nine neutrals
Two directions	About 266 ft, with both runs falling into a center catch basin
Longer runs	Repeat neutral sections and add outlets or catch basins along the line

5 Set string lines and grade



1. Run a string line along each side of the trench at the final elevation of the channel top, for the full run.
2. Set the channel top just below the finished surface: flush to 1/8 in on walkways and patios, 1/8 to 1/4 in on driveways.
3. On accessible routes keep it at 1/4 in or less.
4. Check the strings against the outlet invert before you set any channel.

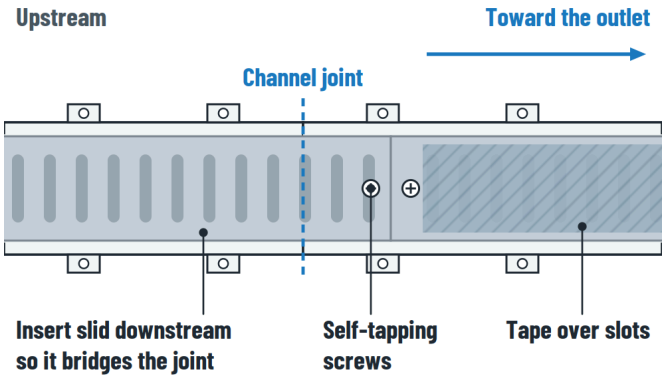
FINISHED SURFACE RELATIVE TO THE GRATE

SURFACE	SET IT
Concrete walkway, patio, pool deck	Grate flush to 1/8 in below the surface
Concrete driveway or garage (Class B)	Grate 1/8 to 1/4 in below the surface
Asphalt	Asphalt about 1/4 in above the grate
Pavers	Pavers about 1/8 in above the grate
Turf and landscape	Concrete collar flush to 1/8 in above the grate; soil and sod finished just above the collar

WHY BELOW GRADE A grate set proud of the surface takes every wheel and heel strike directly. A slight recess lets water in, lets the slab carry the load and keeps the grate from wearing.

6 Assemble the channels

1. Start at the outlet and work upstream, deepest to shallowest.
2. On the male (downstream) end of each section, remove the end screws from the blank grate insert. Leave the center screws in.
3. For watertight joints, run a thin bead of butyl caulk or silicone in the groove.
4. Snap the sections together in pairs.
5. Loosen the insert's center screws and slide it toward the male end so it overlaps the joint.
6. Sight down the run, then fix each insert with self-tapping screws.
7. Tape over the slots and screw heads.
8. Set the pairs in the trench, starting at the outlet.

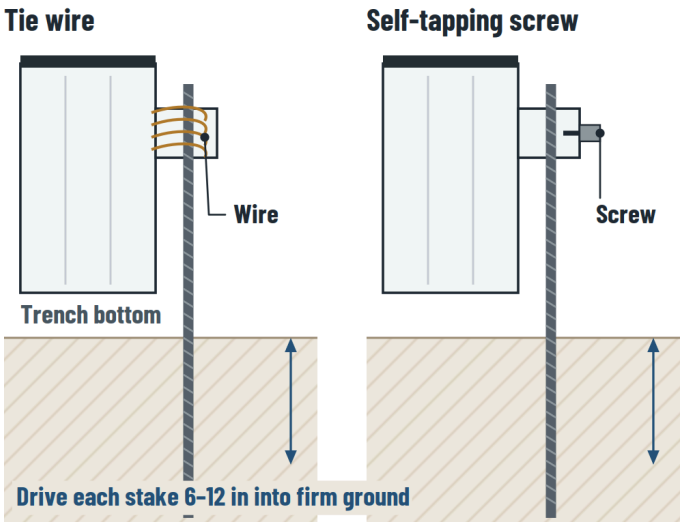


KEEP GRATES OUT OF THE POUR Use the blank inserts to hold the channel walls square through the pour, and fit the HDPE grates after cleanup in Step 10. Concrete splash and vibrator contact mark colored grates, and cured paste in the slots is hard to clean out.

Assembled sections set beside slab reinforcement, inserts in place, ready for the cradle pour.

7 Anchor with rebar and set to grade

1. Push a #4 stake through each support on both sides and drive it straight down 6 to 12 in, until firm.
2. Set the section to grade against the string lines and line it up straight.
3. Lock the channel to the stakes with tie wire or a self-tapping screw through the support.
4. Repeat to the end of the run, then make final grade and line adjustments.
5. Cut stakes off at least 1 in below the finished surface.



FLOTATION HDPE is light and wants to rise in wet concrete. Every support gets a stake, and every stake gets tied, on both sides.

HDPE grates out of the carton, ready to fit once the concrete has set (Step 10).

Finished run: HDPE grate seated just below the concrete surface.

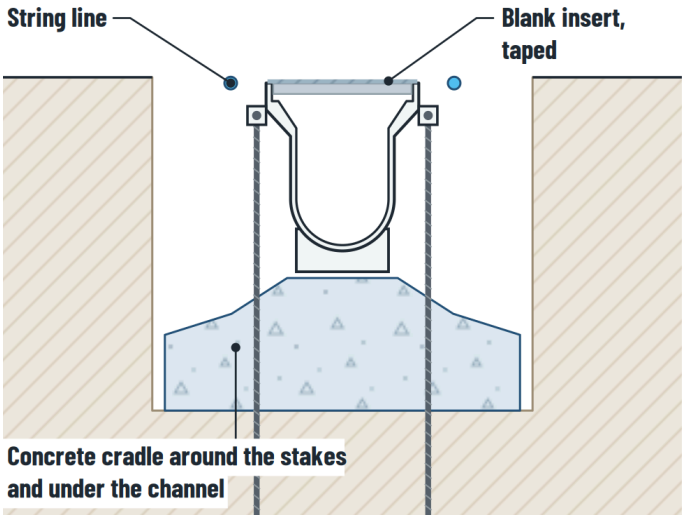
8 Cradle the channel

1. Before the full pour, place concrete around the base of the stakes on each side and under the channel between them.
2. Repeat at every pair of stakes and let the cradle stiffen so the run can't float or shift.

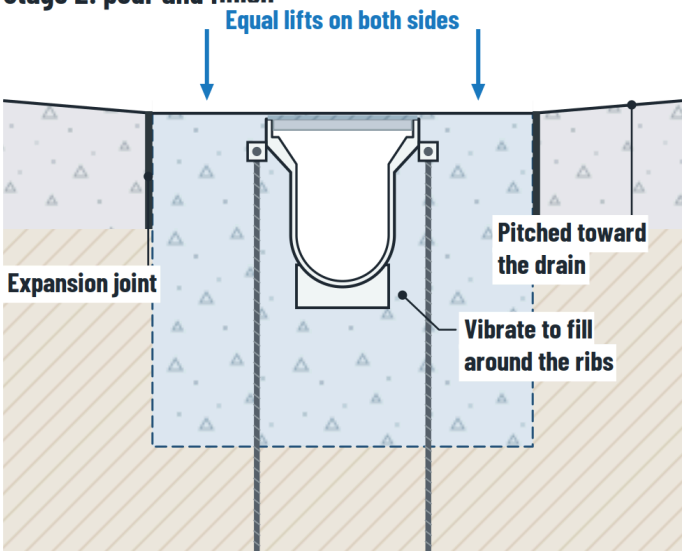
9 Pour the concrete

1. Place equal lifts on both sides.
2. Vibrate to fill under the ribs and remove voids, keeping the vibrator off the channel.
3. Keep the full 4 in encasement.
4. Finish to the heights in Step 5, pitched toward the drain.

Stage 1: cradle the channel



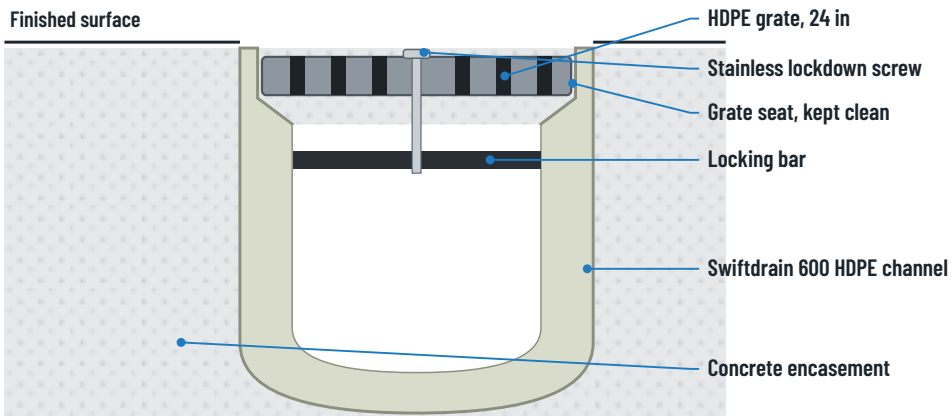
Stage 2: pour and finish



CHECK BEFORE YOU POUR

- ☐ Slope and grade match the layout
- ☐ Outlet connections are sealed
- ☐ Inserts aligned, fastened and taped
- ☐ Every support staked and tied
- ☐ End cap fitted
- ☐ HDPE grates still boxed and stored away from the pour

10 Cure, clean and fit the HDPE grates



1. Leave the blank inserts in place for at least 24 hours, then remove them.
2. Clean concrete fines and debris out of the channel and the grate seats, and flush the run to check the outlet.
3. Drop each grate into its seat in the planned zone. It should sit flat without forcing.
4. Start both lockdown screws by hand, then snug them with a driver on a low clutch setting. Overtightening can strip the locking bar or crack the grate.
5. Check every grate is flush, tight and level with its neighbors.

LOADING Keep vehicles off for 28 days or until the concrete has fully hardened. Follow the concrete supplier's guidance for earlier light loads.

COLD WEATHER When the air is at or will drop to 40°F, protect fresh concrete with insulated blankets or heat. It must not freeze in the first 24 to 48 hours (ACI 306R).

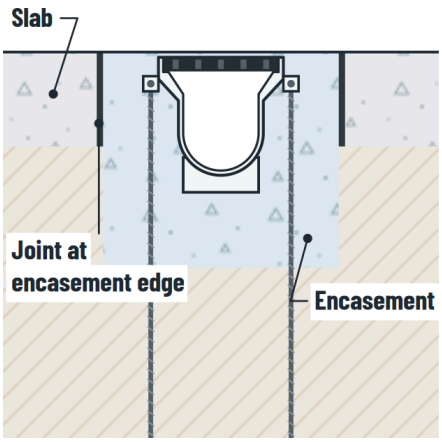
FINAL INSPECTION

- ☐ Sections in order, arrows toward the outlet
- ☐ Grates in the right zones and colors
- ☐ Every grate seated, flush and screwed down
- ☐ No concrete or debris in the channel
- ☐ Surface finished per Step 5 and pitched to the drain
- ☐ Water runs freely to the outlet when flushed
- ☐ Expansion joints cut and sealed
- ☐ Spare screws and grates handed to the owner

SURFACES

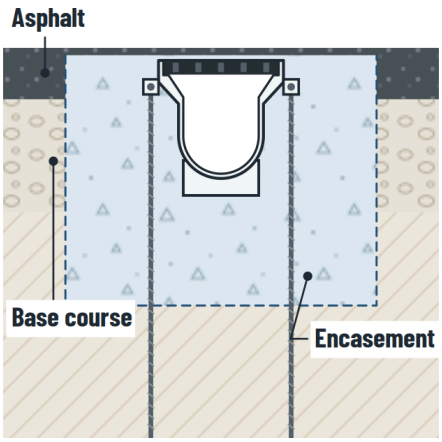
Concrete, asphalt and pavers

Every Swiftdrain 600 installation is encased in concrete, whatever the finished surface. The surface only changes how you finish around the encasement and when you fit the grates.



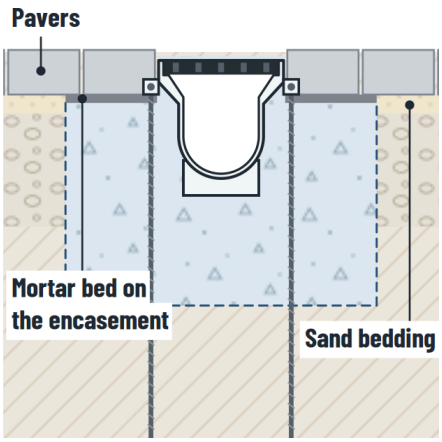
CONCRETE SLAB

Pour the encasement with the slab or on its own. Finish to the heights in Step 5, pitched toward the drain, with joints along the outer edges of the encasement.



ASPHALT

Build the full concrete encasement first and let it cure, then pave up to it. Leave the blank inserts in and fit the HDPE grates only after paving: hot mix and roller heat can soften and distort HDPE. Keep rollers off the drain.



PAVERS

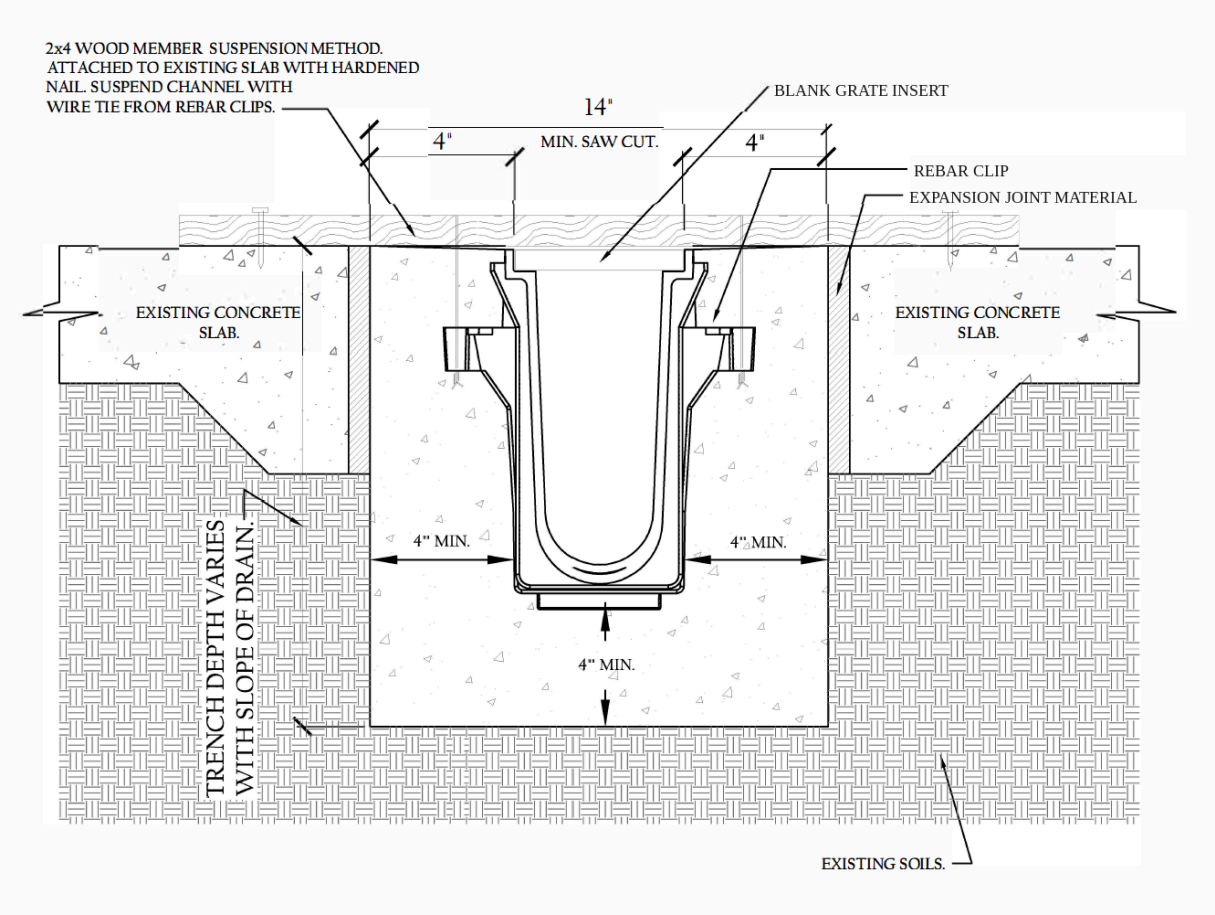
Hide the encasement under the bedding. Set the first course on each side in mortar on the concrete so pavers can't push on the channel, about 1/8 in above the grate. Sand and red grates match most pavers.

TURF AND LANDSCAPE Finish the encasement as a narrow concrete collar flush with or just above the grate, then bring soil and sod up to it. Green grates blend into lawns and planted beds.

RETROFIT DETAIL

Retrofit in an existing slab

Typical installation for Class A and B: 4 in minimum encasement, 2×4 wood member suspension method.

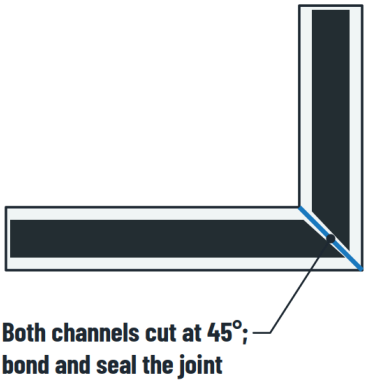


1. Saw-cut at least 14 in wide and remove the slab.
2. Lay a 2×4 across the cut, nail it to the slab with hardened nails, and hang the channel from its rebar supports with tie wire.
3. Keep 4 in of concrete under the channel at every point; the trench deepens with the slope.
4. Install with blank inserts and tape the openings for the pour.
5. Encase with 4 in of concrete, or the slab thickness if greater, at 2,500 psi minimum.
6. Fit the HDPE grates after cleanup (Step 10) and keep vehicles off for 28 days or until fully hardened.

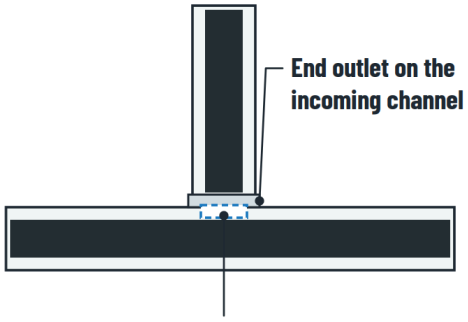
FIELD MODIFICATIONS

Corners, tees and field cuts

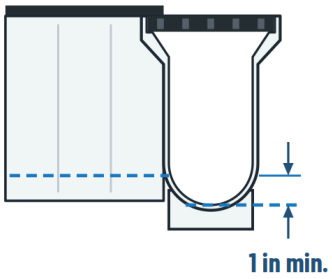
Miter (90° corner)



Tee (plan)



Tee (side view)



CUTTING CHANNELS

Cut HDPE channels with a circular saw, jigsaw or reciprocating saw and a fine-tooth blade. Bond cut joints with construction adhesive; in corrosive service use a chemical-resistant sealant.

CUTTING HDPE GRATES

Cut grates square with the same fine-tooth blade, at a slow feed so the plastic doesn't melt and smear. Keep at least one lockdown screw position on every cut piece, or add a self-tapping screw into the channel seat, and deburr the edge.

MITERS

Cut both channels at 45° for a 90° corner and bond the joint. Tape the inside and pack stiff concrete around the outside to hold it through the pour. Miter the grates to match so no gap is left at the corner.

TEES AND 90° CORNERS

Fit an end outlet to the incoming channel and let it drain into the side of the receiving channel, which must be at least 1 in deeper. Cut the opening in the sidewall, leave the top edge intact to seat the grate, caulk the outside of the joint and line up the grate edges.

LONG STRAIGHT RUNS Most runs need no cuts at all. Plan the layout so full 4 ft sections land between the end cap and the outlet, and save field cuts for corners, tees and the last section against a wall or slab edge.

A long run set to line on a building pad, ending at an end outlet.

REFERENCE

Channel chart

Depths in inches, measured from the channel top. Trench depth at any section is its overall depth plus 4 in.

PART NO.	TYPE	INVERT, START	INVERT, END	OVERALL, MAX	FLOW, GPM	WEIGHT, LB
600-090N	Neutral	3.998	3.998	5.760	75	7.45
600-091	Sloped	3.998	4.334	5.770	75	7.52
600-091N	Neutral	4.334	4.334	6.103	89	7.81
600-092	Sloped	4.334	4.670	6.106	89	7.92
600-093	Sloped	4.670	5.006	6.442	103	8.27
600-094	Sloped	5.006	5.342	6.778	117	8.64
600-094N	Neutral	5.342	5.342	7.111	131	8.93
600-095	Sloped	5.342	5.678	7.114	131	8.99
600-096	Sloped	5.678	6.014	7.450	145	9.36
600-097	Sloped	6.014	6.350	7.786	159	9.74
600-097N	Neutral	6.350	6.350	8.119	173	10.04
600-098	Sloped	6.350	6.686	8.122	173	10.11
600-099	Sloped	6.686	7.022	8.458	187	10.48
600-100	Sloped	7.022	7.358	8.794	201	10.86
600-100N	Neutral	7.358	7.358	9.127	215	11.16
600-101	Sloped	7.358	7.694	9.130	215	11.23
600-102	Sloped	7.694	8.030	9.466	229	11.60
600-103	Sloped	8.030	8.366	9.802	243	11.98
600-103N	Neutral	8.366	8.366	10.135	257	12.27
600-104	Sloped	8.366	8.702	10.138	257	12.34
600-105	Sloped	8.702	9.038	10.474	271	12.71
600-106	Sloped	9.038	9.374	10.810	285	13.07
600-106N	Neutral	9.374	9.374	11.143	299	13.39
600-107	Sloped	9.374	9.710	11.146	299	13.40
600-108	Sloped	9.710	10.046	11.482	313	13.83
600-109	Sloped	10.046	10.382	11.818	327	14.20
600-109N	Neutral	10.382	10.382	12.151	341	14.50
600-110	Sloped	10.382	10.718	12.154	341	14.57
600-111	Sloped	10.718	11.054	12.490	355	14.95
600-112	Sloped	11.054	11.390	12.826	368	15.32
600-112N	Neutral	11.390	11.390	13.158	382	15.60
600-113	Sloped	11.390	11.726	13.162	382	15.69
600-114	Sloped	11.726	12.062	13.498	396	16.06

All dimensions nominal. Sloped sections fall 0.336 in over 4 ft (0.7%). Neutral sections are shaded. Weights are channel shipping weights.

AFTER INSTALLATION

Care, maintenance and troubleshooting

- Inspect at least twice a year and after major storms, and clean before winter.
- Remove the screws, lift the grates, scoop out sediment and flush the run toward the outlet.
- Empty the catch basin bucket; clean the basin when sediment is a third of the way up to the outlet pipe.
- Wash HDPE grates with water and mild detergent, or a pressure washer held back from the surface. Use nylon brushes, not wire.
- Clean grate seats before refitting grates and replace any stripped screws.
- In kennels, rinse daily and disinfect as usual; HDPE resists common disinfectants.

TROUBLESHOOTING

PROBLEM	LIKELY CAUSE	FIX
Channel floated or shifted in the pour	Stakes not tied, no cradle, or concrete placed on one side	Stake every support, cradle first, pour both sides evenly
Grate rocks or won't sit flat	Concrete or grit in the seat, or a distorted channel top	Clean the seat; check the channel was held square by inserts
Lockdown screw spins and won't tighten	Overtightened or cross-threaded into the locking bar	Replace the screw or locking bar; snug, don't force
Grate cracked or warped	Vehicles above Class B, or heat from hot asphalt or equipment	Replace the grate; use ductile iron where heavier traffic crosses
Water ponds beside the grate	Surface finished at or below the grate, or not pitched	Finish per Step 5, sloped to the drain
Concrete stains on colored grates	Grates fitted before the pour or not covered	Clean with a concrete-dissolving cleaner and a nylon brush; fit grates after the pour next time
Water stands in the channel	Sections out of order or reversed, debris, small outlet pipe	Check numbers and arrows, flush, size the pipe to the flow

REPLACEMENT GRATES Any style or color is available in 2 ft lengths. Call 646-227-0910 with the grate style and color.

SWIFTDRAIN

Questions on a layout, a load class or an installation?

Swiftdrain reviews plans, helps size runs and outlets, schedules grates by zone and answers installation questions. Same-day proposals; most items in stock, ready to ship.

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This guide covers typical installations of the Swiftdrain 600 with HDPE grates in load classes A and B. Local codes and the project engineer's specifications take precedence. All dimensions are nominal and subject to change. Swiftdrain 600 with HDPE grates installation guide, October 2026.