COMMERCIAL SURFACE WATER CHANNEL DRAINAGE

Before you purchase please consider the following

Channel Size

When determining water flow you will need to consider the following variables that may increase the volume of water flowing into your drainage system: the slope of the land; the size of the stormwater pipes; and the number of stormwater pipe connections.

Grate Material

When determining what grate style to purchase you will need to consider the following variables; will the grate be subject to harsh conditions like salt or chlorine; will the grate be subject to any vehicle traffic.

Preparation for Installation

The excavation for the installation of the drainage system must be dimensioned taking into account the channel selected and the thickness of concrete required for the abutment and the substrate as given in table 1. In addition to these thicknesses (R and S) the excavation should allow for the possible passage of pipes to the final drain connection. The natural ground the drain is being laid in must have a bearing capacity sufficient to support the load classes selected. It may be necessary to increase the bearing capacity by tamping down the foundation or providing some form of ground or soil reinforcement. In particular, soft sub grades may be necessary to make the concrete foundation wider to provide a greater support.

Figure 1:

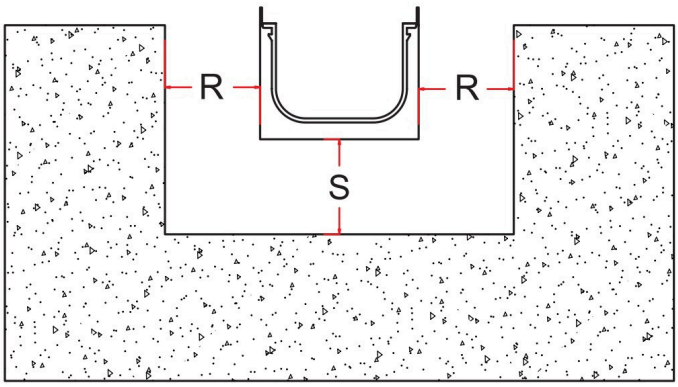


Table 1. Recommended thickness for subgrade and concrete abutments according to load classes

	Class Loading	
Thickness	B	D
R	100	150
S	100	150

The bedding must be prepared to provide for a concrete base thickness of S. The concrete to be used for the base of DuraDRAIN must have flow properties conductive to the filling of all cavities formed by the ribs external reinforcement channel for the same reason the size of aggregates in concrete content should not exceed the diameter of 15-18mm. The minimum strength class of concrete of the foundation and abutment must be between 25 to 30 MPA for grate load classes (B80, D210). There are a number of premixed mortars in the market that may be used such as Mapegrout SV Sikagrout 312 Emaco Ultra Rapid or similar. For installations in cold temperatures, Emaco Fast or similar can be used. These mortars also provide a low volume shrinkage of concrete and reduce the time for transitability line drainage for road works with instant you can use premixed mortar type SikaPatch-4 or similar.

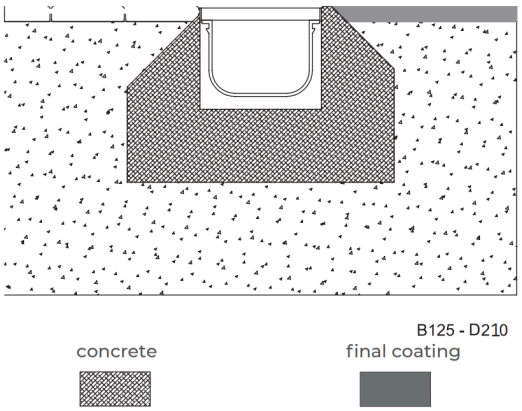
Installation of Channel

- Begin the installation from the point of discharge (well), connecting the outlet to the stormwater system. For a perfect seal of the male-female joint, use a thixotropic bituminous type sealant or Sikaflex 221 Adhesive. The channel should be installed with the grates already in place, it is therefore recommended to perform this operation before locating the drain in the excavation. Care should be taken in ensuring the correct placement and orientation of grates on the channel before tightening the fixing screws.

- To connect storm water pipes to the DuraDRAIN channel, drill out the required size hole in the bottom, side or end cap located on the channel using the appropriate sized hole saw to suit the size of the discharging storm water pipe. Remove any rough edges located around the inside of the channel. Insert the required size PVC pipe fitting onto the connection outlet of the channel and seal with Sikaflex 221 adhesive or similar around the fitting and channel. Connect the storm water pipe to the PVC pipe fitting using an approved PVC solvent cement.

- It is extremely important to avoid distortion at the edge of the channel and subsequent difficulties locating or removing the grate, or issues getting the water to drain correctly to the grate abutment. It is recommended to install a compression or expansion strip approx 40mm x 8mm along both outside edges of the channel between the concrete and the drain to allow for any expansion movement in either the concrete or channel. During installation, avoid any damage to the grates and or the edge of the channel.

- The channel abutments should then be filled with concrete to a thickness of R (table 1) as required providing for the selected class load. It is also necessary to allow for any floor finishes such as tiles paving etc as it is important that the finished floor remains 3-5mm above the floor drainage grate. For class D, the concrete finish shall protect the finished surface side of the support edge of the channel. It is important that the concrete is completely cured before subjecting the channel to loads.



Aftercare and Maintenance:

Removing Grates:

For cleaning and maintenance purposes, grates can only be removed if they have been installed using a suitable expansion material. To remove grate, place the tip of a flat head screw driver into the flange, where the grate and channel connect. Gently push the edge of the channel outwards until the grate pops out. Repeat this for each flange along the channel.

General Cleaning

The channel body, constructed from high-quality moulded polymer, requires minimal maintenance.

Care Instructions:

- Periodically inspect for blockages, debris, or buildup.
- Rinse with clean water during routine site cleaning.
- Avoid impacts from heavy machinery or sharp tools.
- Do not expose to open flames or harsh solvents (e.g. acetone).
- Clean grates and channels seasonally or more frequently in leaf-heavy or high-use areas.
- Remove grates carefully using approved lifting keys to avoid damage.
- Inspect for loose fixings, cracks, or blockages during routine cleaning.
- Replace damaged or excessively corroded grates promptly to maintain drainage and safety.

Polymer Channels and Grates

Durable, UV-stabilised plastic suited to light traffic and decorative applications.

Care Instructions:

- Rinse with water or mild soapy solution as needed.
- Avoid exposure to sharp objects or hot surfaces (e.g. cigarette butts, oxy torches).
- Inspect for warping or UV degradation over time in direct sun.

Coated Steel Grates

Corrosion-resistant coating provides protection, but can degrade over time—especially in coastal or wet environments.

Care Instructions:

- Regularly rinse with clean water to remove salt, dirt, and chemicals.
- Avoid prolonged contact with leaf litter, fertiliser, or acidic materials.
- Inspect for rust or flaking; replace if coating is compromised.
- Not recommended for marine or high-chloride exposure zones.

Stainless Steel 316 Grates:

Ideal for coastal, poolside, or corrosive environments due to its high chloride resistance.

Care Instructions:

- Clean with mild detergent and water regularly.
- Rinse thoroughly after exposure to salt or chlorine.
- Avoid steel wool or abrasive cleaners that could cause tea staining.
- For best results, apply a stainless steel protector or polish periodically.

FAQ's

Question	Answer
How do I remove the grates for cleaning?	To remove grate, place the tip of a flat head screw driver into the flange, where the grate and channel connect. Gently push the edge of the channel outwards until the grate pops out. Repeat this for each flange along the channel.
Are there care instructions for cleaning?	Yes, the Everhard Install and Maintenance Manual outlays detailed instructions for cleaning and maintaining your surface water drainage system.
What is the purpose of the expansion tape?	Concrete naturally expands and contracts through its lifetime. Expansion tape stops the concrete or material that is surrounding the grate from pushing in on the channel and deforming it.
Do I need to use the expansion tape?	Yes, use of expansion tape is absolutely critical to ensure the channel and grate do not deform over time and cause issues with removal and maintenance.
Can I drive over the drains?	Yes, but only if the grates are rated Class B, C, or D. Class A grates are designed for pedestrian traffic but when installed in concrete as per the Everhard Instructions they may withstand light vehicle traffic.
How do I cut and connect cut pieces?	There are detailed diagrams and instructions on how to cut the channel at the designated 200mm increments in Figure 2 of the Everhard Install and Maintenance Manual.
Can I replace my existing grates with new ones?	Yes, you can replace your existing Everhard grates with new ones, but a few things need to be considered: • Is your current grate the same size as new grate. • Your new grate must be the same load class rating or HIGHER than the current grate. • Did your current grate rust or fail from a heavy load, if so, you may need to consider a different material for the new grate. • Was expansion foam used during the installation of your drainage, if not it may be very difficult to remove your current grate or install a new grate as the channel can warp.