Polymer Rainwater & Stormwater Pits & Risers

INSTALLATION INSTRUCTIONS

Everhard's Rainwater and Stormwater Pits are strong, durable injection moulded products in selected blends of polypropylene with excellent general resistance to UV degradation. Please read the following on the variety of models available and the listed suitabilities to ensure you are selecting most appropriate product for your project.

The **Domestic Rainwater Pit** is intended to collect surface water or roof drainage in residential properties for delivery to on-site detention or off-site disposal. Also available is the range of **Flo-way** drain inlets, and all these types may be fitted with either Injection Moulded Plastic or Cast Aluminium Grates, which are intended for use in pedestrian traffic areas.

The **Series 300 Stormwater Pit** is suitable for the collection of surface water in large domestic and light commercial (non traffic) areas, where smaller Domestic Rainwater Pits would be inadequate for flow from the catchment area. The Series 300 Stormwater Pit accepts Class A Galvanised Steel Grates, which is not suitable for vehicular traffic, but the grate and pit is a sturdy and durable combination that is easily capable of withstanding occasional light vehicle loading in such places as driveways when correctly installed. Cast Aluminium Grates, for pedestrian applications only, are also available for the Series 300 Stormwater Pit.

The **Series 450, 600 and 900 Stormwater Pits** are intended to offer adequate surface water collection in applications such as vehicle parking and major commercial and industrial areas. Series 450, 600 and 900 Stormwater Pits may be fitted with Galvanised Steel Grates or some Polymer and Concrete cover options.

PIT INSTALLATION INSTRUCTIONS

We strongly recommend that Stormwater collection and drainage systems for any site are designed to accept probable stormwater flow rates by a suitably qualified engineer, and to comply with any specifications for the site decided by the local regulatory authority or other project controller. The following installation instructions should be followed:

1. The prepared excavation should allow the Pit to be seated firmly on a layer of firmly compacted bedding sand with the upper surface of the Steel Grate or Cast Iron Frame, whichever is selected, at the proposed final surface level.
2. Mark and cut the Pit walls to accept the connection pipes or channels etc at the correct levels.
3. All pipes should be fitted through the Pit wall and sealed with a suitable silicone based adhesive/sealant.
4. It is normal practice to pour concrete inside the Pit up to the invert of the lowest pipe to prevent the accumulation of water which encourages vermin to collect, and mosquitoes to breed.
5. The Grate should be fitted to ensure that the Pit walls do not distort during the completion of the paving work. Internal bracing of larger Pits during backfilling is recommended. Braces for Series 450, 600 and 900 are provided.
6. Pour mass concrete at pipe entries outside the Pit walls to provide support to pipes entering the Pit walls.
7. Backfill the excavation with moderately compacted clean stabilised soil and sand.
8. Allow sufficient space above backfill for a concrete collar to be poured around the Pit, finished at the final surface level. Collar depth and width should be the same, about 100mm for the Domestic Rainwater Pit and 100 to 150mm for the Series 300 Pit. Collars should extend to not less than 150mm below the rim for the Series 450, 600 and 900 Pits. This collar provides all-round support under the Pit rim for the Grate, and protects the Pit against possible "in-service" mechanical damage to the edge of the rim. The diagram overleaf indicates concrete surrounds in both light and heavy traffic sites.
9. Surrounding bitumen, concrete or brick paving should be planned for completion with graded areas so that collected water flows towards the concrete collar surround and into the Pit.

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RISER INSTALLATION INSTRUCTIONS

When installing Polymer Pits, and especially when Risers are being used, care must be taken to ensure that the load from the surrounding soil does not deform the Pit wall and crush it inwards. This is aggravated when surrounding soil is heavily compacted, or subject to vehicular traffic. Reinforcing Cross-Bar Spiders should be installed inside the Polymer Pit to help stiffen the side walls.

1. New pattern Risers have shaped external ribs to lock over the Pit rim to prevent misalignment. In cases where the installation may be subject to high loads a suitable "tank bolt" may be fitted in each side of the Pit to secure the overlap of the Riser skirt and the upper wall of the Pit.
2. The Pit to Riser connection should be supported by concrete poured in the backfill to envelope the Pit rim.
3. A concrete surround collar 100 to 150mm deeper than normal is recommended for Risers in a traffic situation.

DEEP PIT INSTALLATIONS

Risers allow both Concrete and Polymer Everhard Stormwater Pits to be set deeper than normal to suit the drainage piping. However, the National Plumbing and Drainage Code for stormwater drainage (AS/NZS 3500.3:2003) limits the maximum depth for stormwater and inlet pits. These should be applied when using Pits for other purposes, such as cable connections.

450 x 450 pits should no be deeper than 600mm to outlet invert
600 x 600 pits should no be deeper than 900mm to outlet invert
600 x 900 pits should no be deeper than 1200mm to outlet invert
900 x 900 pits can be over 1200mm deep to invert of the outlet

CONNECTING PIPES

Where pipes penetrate the sides or floor of an Everhard Polymer Stormwater Pit, and it is possible that movement may occur which may cause a normal application of sealant between an unsupported pipe and the Pit wall to fail, mechanical reinforcement of the connection may be needed. Pipes can sometimes be fitted with a flange, with the face against the outer wall of the Pit. This can then be secured using metal fasteners appropriate for the application. Stainless Steel bolts through the Pit wall and Flange are normal, with washers under the bolt head and under the nut outside. A generous bead of suitable sealanet should be appled between the flange and the Pit surface, and under the fasteners and washers. “Fullers Max-Seal” or “Silastic 732” or an equivalent compound with adhesive properties should be used. The entire joint may then be assembled and tightened so that connections will remain unbroken, even if a pipe misalignment occurs.