

EVERHARD Industries Pty Ltd

CONCRETE STORMWATER PITS

Australian Standard AS 3500.3 - 2003, governing Stormwater Drainage, provides dimensions and construction details for Stormwater Pits, Inlet Pits, and Arrestors. While the materials mentioned in the body of the text refers to concrete and brick, other materials may be used subject to authorization by the relevant authority and EVERHARD Plastic Stormwater Pits have now been accepted for use in local government areas over much of Australia, due in great part to advantages over conventional materials in cost savings through ease of storage, handling, construction and installation, while still providing an adequately robust unit for most applications.

However, some situations do require the use of conventional pre-cast reinforced Concrete Pits, and the EVERHARD products still remain popular with designers and installation contractors because of their proven strength, reliable dimensional accuracy and the flexibility allowed by the multi-size connection knock-out ports provided in each wall.

These connection ports have thinned panels permitting an opening to suit most common pipe sizes to be selected. They need only to be punched out with simple hand tools to allow the pipe to be fitted and the joint made good with a concrete support collar poured around the outside of the Pit. The joint may also be sealed with a bead of suitable Silicone based sealant materials around the pipe inside the Pit.

A number of Pit sizes are available for a variety of purposes. Risers are also available which permit greater flexibility to meet drain pipe depth requirements. A range of galvanised fabricated Steel Grates and Covers are also available to suit most domestic and light industrial or commercial site applications. Where Pits may be exposed to heavier traffic, cast-iron framed Class D Covers or Grates may be installed over the Pit in supporting in-situ concrete collars.

It is strongly recommended that Stormwater collection and drainage systems for any site are designed by a suitably qualified engineer to comply with any specifications for the site which have been decided by the local regulatory authority, or other project controls, and capable of accepting probable stormwater rates of flow. The following instruction guidelines should be followed:

1. A Grate or Cover system should be selected which will satisfy the traffic likely to be encountered at the Pit location.
2. The depth of the excavation should be sufficient to allow the Pit to be supported on a compacted 50mm thick layer of bedding sand, and also allow sufficient depth for the piping entering and leaving the Pit. Excavations should allow sufficient space around the Pit for pipes to be fitted etc.
3. The prepared excavation should allow the Pit, with any required Riser, to have the upper surface of the selected Steel Grate or Cast Iron Frame at the proposed final surface level.
4. Select and punch out the knock-outs in the Pit walls to accept the connection pipes at the correct levels, taking care not to cause excessive damage or cracking to the remaining Pit walls. On no account should any part of the Pit rim be removed.
5. Using suitable lifting equipment, place the Pit into the excavation, ensuring that the rim is level. EVERHARD strongly recommends that a lifting beam is used with chain slings and lifting attachments which will not tend to crush the Pit opening.
6. Where Risers are required, clean each rim and mating surface and apply a full, even bead of Megapoxy, or an equivalent epoxy based cementitious compound, or mortar, before positioning the Riser with suitable lifting equipment.
7. Pipes should be fitted through the Pit wall and may be sealed with a suitable silicone based adhesive/sealant.
8. Pour mass concrete at pipe entries outside the Pit walls to provide support to pipes entering the Pit walls.
9. 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.
10. Backfill the excavation with moderately compacted clean stabilised soil and sand.
11. When used in drainage situations, all surrounding bitumen, concrete or brick paving should be completed so that collected water flows towards the concrete collar and into the Pit.
12. In pedestrian and light service applications (Class A / Class B) the upper surface of the steel Grate or Cover should be at the level of the surrounding paving, and this may be applied over the backfill to form an even thickness. The opening in the reinforcing in the paving around the Pit should be edged with deformed steel bars.
13. In heavier traffic applications, it is very strongly recommended that sufficient space be left above the backfill for a concrete collar not less than 100mm deeper than the paving, and 100mm wide, to be poured all round the Pit. This will provide support for the Cover or Grate frame and also prevent movement of the Pit. The opening in the reinforcing in the paving around the Pit should be edged with deformed steel bars to prevent cracking etc. These bars should be tied or welded to the reinforcing. It may be necessary to install more than one layer of bars.

PIT DEPTHS

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

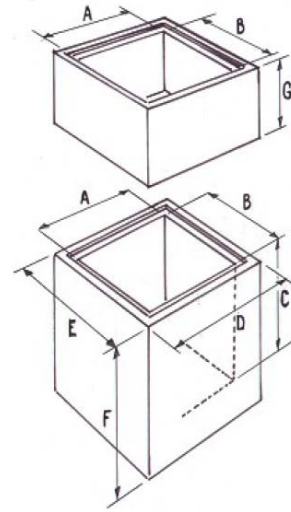
450 x 450 pits should not be deeper than 600mm to the invert of outlet.

600 x 600 pits should not be deeper than 900mm to the invert of outlet.

600 x 900 pits should not be deeper than 1200mm to the invert of outlet.

900 x 900 pits can be over 1200mm deep to the invert of the outlet.

Note: Some other Pit Riser sizes are available.
Contact Everhard branches for more details.



<i>Description</i>	<i>Service</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>Weight kg</i>
Standard Rainwater Pit	Pedestrian Class A/B	223	223	265	285	285	300	-	32
450 x 450 x 450 Field Gully Pit	Light Traffic Class B/C	450	450	450	550	550	510	-	165
450 x 450 Pit 300 Riser	Light Traffic Class B/C	450	450	-	550	550	-	300	72
610 x 610 x 450 Field Gully Pit	Pedestrian Class A/B	550	550	420	610	610	460	-	175
600 x 600 x 600 Field Gully Pit	Light Traffic Class B/C	600	600	610	700	700	660	-	270
600 x 600 Pit 300 Riser	Light Traffic Class B/C	600	600	-	700	700	-	300	74
900 x 600 x 600 Field Gully Pit	Light Traffic Class B/C	900	600	600	1000	700	650	-	230
900 x 600 x 900 Field Gully Pit	Light Traffic Class B/C	900	600	900	1000	700	950	-	500
900 x 600 Pit 300 Riser	Light Traffic Class B/C	900	600	-	1000	700	-	300	115
900 x 600 x 600 Field Gully Pit	Heavy Traffic Class D	900	600	600	1200	900	750	-	750
900 x 900 x 900 Field Gully Pit	Light Traffic Class B/C	900	900	900	1045	1045	950	-	740
900 x 900 Pit 300 Riser	Light Traffic Class B/C	900	900	-	1045	1045	-	300	185
900 x 900 x 900 Field Gully Pit	Heavy Traffic Class D	915	915	900	1215	1215	1050	-	1900

For further information:

National Customer Service Number: 13 1926

www.everhard.com.au

EVERHARD products are also available from most reputable building and hardware suppliers across Australia.