

Hynds Rain Garden Surround

Technical Guide SW 23

Hynds Rain Garden Surrounds are precast concrete structures to contain treatment media and vegetation.



12.24 | STORMWATER | SW23 HYNDS RAIN GARDEN SURROUND

Applications

- Road berms
- Road centre medians
- Car parks
- Urban streetscapes

Product Attributes

- Low installation costs
- Speed of installation
- Prevents contamination of filter media by intrusion of fines
- Designed to withstand adjacent vehicle loads

Approvals/Standards

Designed and manufactured to NZS 3109:1997

Quality

ISO 9001:2015 Quality Management Standard

We are the supply partner of choice for New Zealand's stormwater management and treatment solutions.



The Hynds Rain Garden Surround is a precast structure that is designed to form an integral part of a complete rain garden system.

Rain gardens are typically designed to treat stormwater at its source using a combination of infiltration and filtration. Rain water is directed towards rain gardens from impervious areas such as roadways, where it then soaks through a series of engineered layers before either infiltrating into the groundwater or being fed into the local stormwater network. Rain garden size and the engineered layers are typically designed for each site and depend on local requirements for retention/detention and water quality and also site specific conditions (impervious area and rainfall events).

Hynds Rain Garden Surrounds are designed to provide an impervious wall to surround and protect the engineered layers of the rain garden, which are vital to the successful operation of the rain garden. Hynds Rain Garden Surrounds offer a range of standard sizes which provide a large degree of flexibility to cater for the varying requirements of each site.

The advantages of Hynds Rain Garden Surround

- Provides a solid barrier between filter media (engineered layers) and surrounding soil or fill. This prevents contamination and silting of filter media, ensuring the rain garden continues to operate effectively.
- Use of Hynds Rain Garden Surround provides a quick and easy solution for constructing rain gardens and can offer project savings when compared to other methods such as insitu construction.
- By specifying a Hynds Rain Garden Surround, you will be helping to ensure the successful maintenance of the rain garden, by providing a solid wall which is less prone to damage during filter media replacement.
- The Hynds Rain Garden Surround is specifically designed to withstand vehicle loads (12kPa) on the road side wall.
- The Hynds Rain Garden Surround can make design of rain gardens on roads with steeper longitudinal grades much simpler, by minimising slope as a limiting factor.

Key Features

- An inlet is included in the upstream roadside edge to allow water to flow in from the kerb and channel and through the filter media. The dimensions of this inlet are 600mm long x 150mm deep.
- Swiftlift anchors are provided to the inside face of the walls to aid with safe installation.
- A high quality and consistent finish means the Hynds Rain Garden Surround is ideally suited for residential and commercial developments.
- Non-standard Hynds Rain Garden Surrounds can be arranged with different finishes and options to the top faces of the walls (cut-outs, cross-falls, starter bars etc). Talk to your Hynds Representative for further details.
- If additional filtration area is required, Hynds Rain Garden Surrounds can be installed in series. Talk to your Hynds Representative for further details.
- Holes for outlet pipes can be core drilled on site in the correct position.

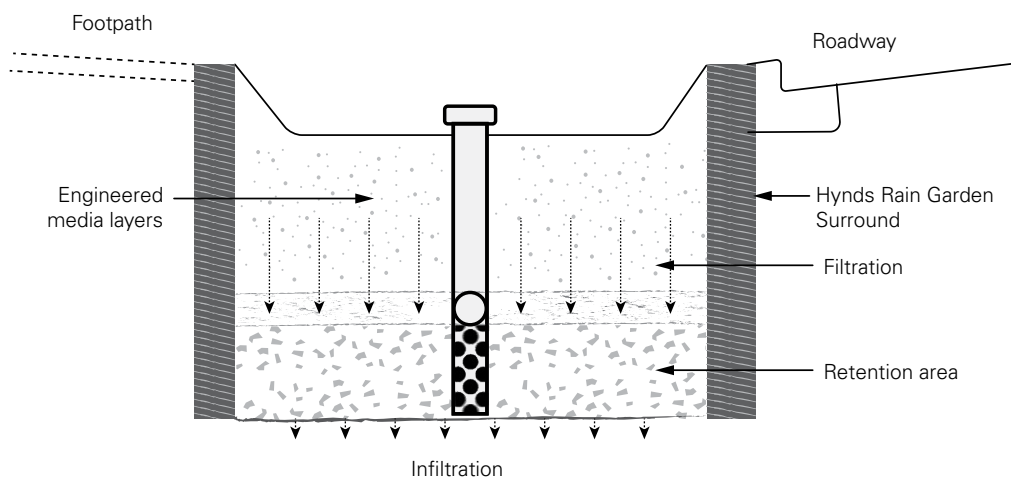


FIG. 1 Typical cross section of rain garden

TABLE 1 Standard Range

Product Type	Item Code	A - Length (mm)	B - Width (mm)	C - Height (mm)	Loading	Wall thickness (mm)	Weight (Tonnes)
3 x 1.50 surround	RGS3015L/R*	3000	1500	1550	12kPa	150	6.04
3 x 1.75 surround	RGS3017L/R	3000	1750	1550	12kPa	150	6.32
3 x 2.0 surround	RGS3020L/R	3000	2000	1550	12kPa	150	6.62
3 x 2.35 surround	RGS3023L/R	3000	2350	1550	12kPa	150	6.834
4 x 2.0 surround	RGS4020	4000	2000	1550	12kPa	200	9.23

- Hynds Rain Garden Surrounds are designed for 12kPa loadings
- All dimensions are internal
- Standard raingarden comes with inlets and can be used on both sides of the road
- No-inlet opening option is also available for the products listed in Table 1

TABLE 2 Standard Made to Order Range

Product Type	Item Code	A - Length (mm)	B - Width (mm)	C - Height (mm)	Loading	Wall thickness (mm)	Weight (Tonnes)
1.75 x 1.5 surround	RGS1715L/R	1750	1500	1550	12kPa	125	4.45
1.75 x 1.75 surround	RGS1717L/R	1750	1750	1550	12kPa	125	4.73

*The letter L at the end refers to a left hand opening (Figure 2) and R for a right hand opening (Figure 3)

TABLE 3 Bespoke Made to Order Range

Product Type	RGS3015M	RGS3017M	RGS3020M	RGS4020M	RGS1715M	RGS1717M	RGS4520M
Reduced kerb side wall	✓	✓	✓	✓	✓	✓	✓
Reduced berm side wall	✓	✓	✓	✓	✓	✓	✓
Recessed connection walls	✓	✓	✓	✓	✓	✓	✓
General dimension changes	✓	✓	✓	✓	✓	✓	✓
Multiple inlets	✓	✓	✓	✓	✓	✓	✓
Internal chambers	✓	✓	✓	✓	✓	✓	✓
Smart Technology	✓	✓	✓	✓	✓	✓	✓
Precast base	✓	✓	✓	✓	✓	✓	✓

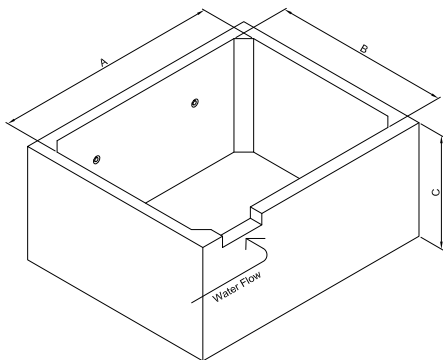


FIG. 2 Left hand standard

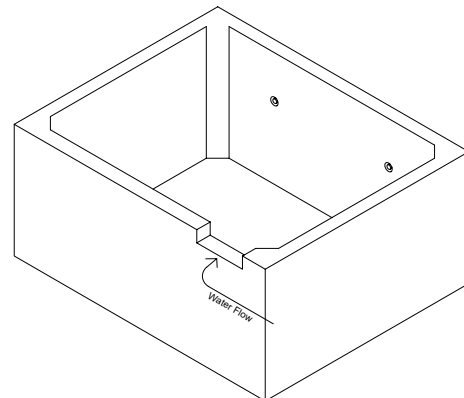


FIG. 3 Right hand standard

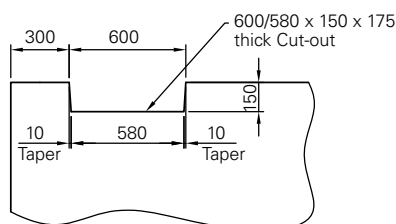


FIG. 4 Standard cut-out detail



FIG. 6 Customised Rain Garden Surround

Lifting and Handling

All Hynds Rain Garden Surround units incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch.

Hynds Pipe Systems has designed and manufactured Hynds Rain Garden Surround units with a minimum dynamic factor of 1.2. This dynamic factor requires that all the following conditions are observed when lifting, moving or placing the units:

1. Lifting with mobile plant (*such as an excavator or similar*) where equipment is specifically exempt from the requirements of the PECPR Regulations 1999, subject to the conditions outlined in the New Zealand Gazette, No. 104, September 2015 and
2. Lifting, travelling and placing over rough or uneven ground where anchor failure is not anticipated to cause harm or injury, by adopting procedures such as:
 - a. Transporting the element as close as practical to ground level (300mm recommended)
 - b. Establishing and maintaining exclusion zones
 - c. Transporting only precast concrete elements that are unlikely to topple if they were to hit the ground

- d. Inspecting lifting anchors both after transportation and before final lifting into place
3. Hynds uses both Reids and Ancon lifting anchors which are both designed to (*Haeussler*) specifications and as such are compatible with Reid, Deha or Ancon anchors, clutches, and recess formers of the same load range.

Refer to "Safe work with precast concrete - Handling, transportation and erection of precast concrete elements" published by Worksafe New Zealand (October 2018)

Shock loads resulting from travelling with suspended Hynds Rain Garden Surround units over rough terrain and uneven ground may exceed design, dynamic and safety factors of the lifting systems. It is essential that care is taken during lifting and transporting as additional stresses could result in anchor failure.

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Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.