

Uponor Rain Garden Stormwater management

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Installation manual



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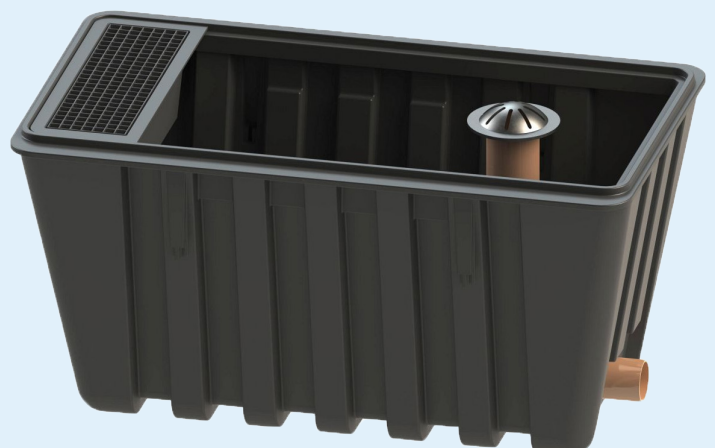
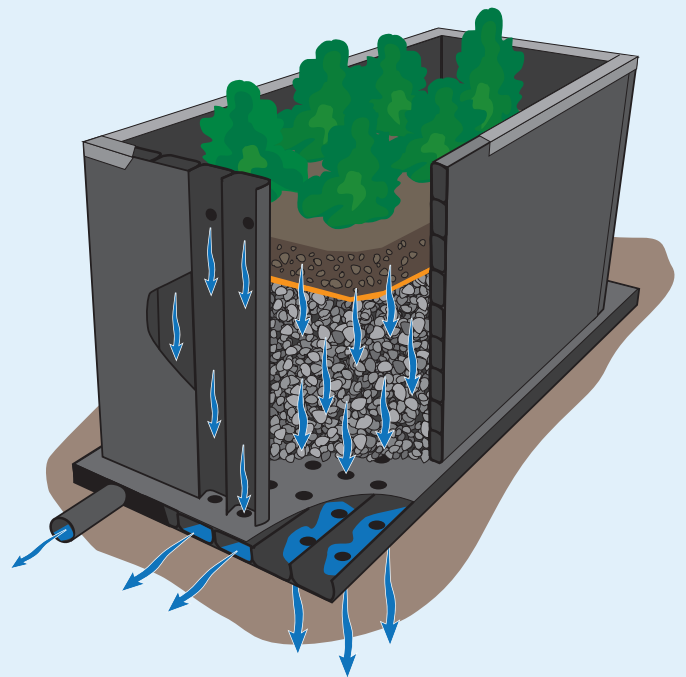
1 Installation of Rain Garden

Polluting oil and heavy metals from e.g. traffic flows directly into urban stormwater systems in connection with rain and snowmelt from roads, parking lots and other paved surfaces. In many cases purification can be achieved by simply removing the sediments. The most traditional way to clean rainwater is through sand filters.

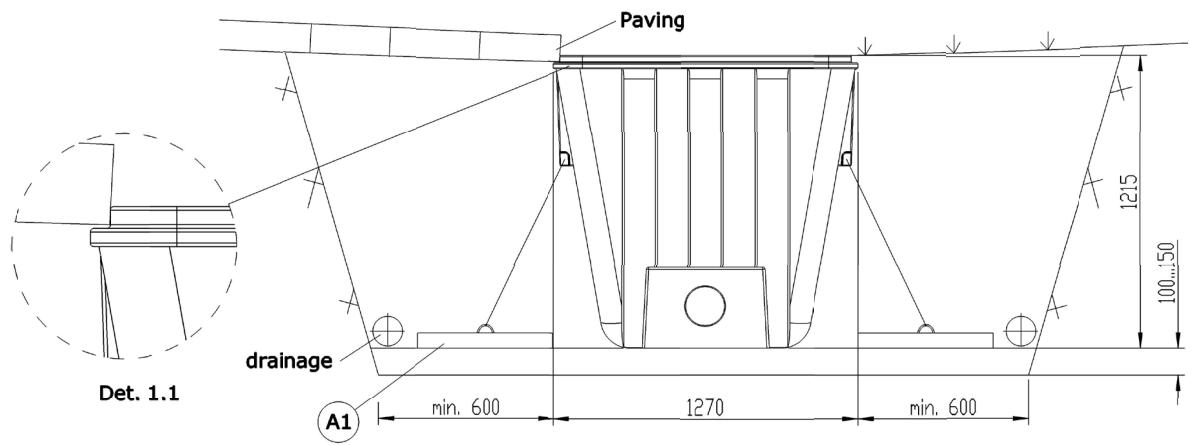
1.1 Prefabricated filtration solution

Uponor Rain Garden is a compact, prefabricated solution for biofiltration that collects, delays and cleans rainwater of nutrients, heavy metals and oils and reduces the risk of contamination of natural receivers. This tailor-made solution makes it possible to install it in a small and space-saving area, easily and quickly with a safe end result. The rain bed is waterproof and can therefore be installed in areas with difficult soil conditions.

Rain beds are often used in urban areas, but can also be installed in retail or residential areas. The rain bed can be installed buried or above ground for e.g. collection of roof water. Rain Garden can be installed as a separate unit, in parallel or in extension of each other. The rain bed is easy to dimension. The number of rain beds depends on the need for drainage. One rain bed is enough for 130-150m² drainage area.



2 Packet content

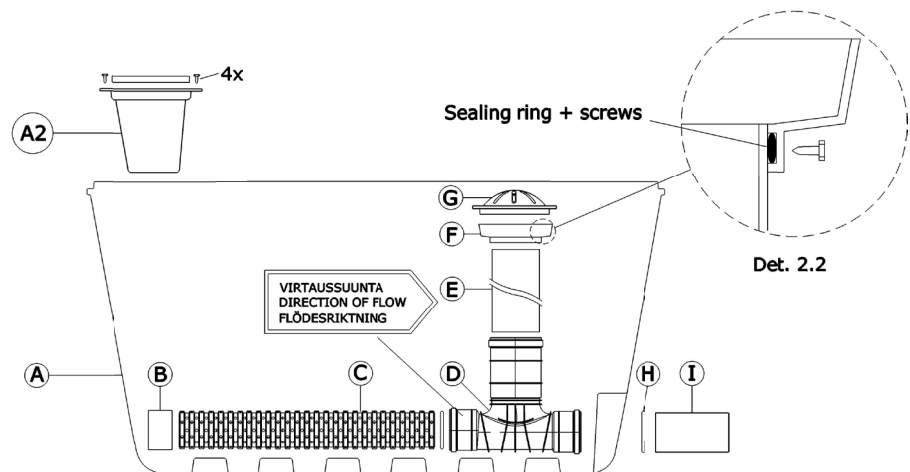


PIC 1.

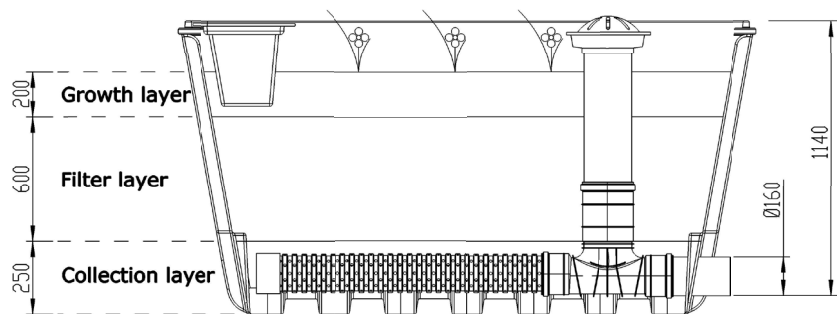
- A. Rain Garden, stormwater biofiltration unit
- B. End plug 160 mm
- C. Drainage pipe 160 mm
- D. Rodding tee 200/160 mm
- E. Over-flow pipe 200 mm
- F. Connector 200/315
- G. Cast-iron dome 315
- H. Wall penetration sealing 160 mm
- I. Outlet pipe 160 mm

Accessories:

- A1. Uponor anchoring systystem 1003563, LVI no. 3625391 (2 pcs. PIC 1.)
- A2. Rain garden sand trap , 1094648, LVI 2620078; RSK; etc. no. xxxxx (1 pc. PIC 2.)



PIC 2.



PIC 3.

2.1 General considerations

- Rain garden can be installed to areas where ground water level is higher than the outlet of tank. In this case water need to be lead away from the high groundwater area, water cannot be infiltrated locally.
- Rain Garden cannot be installed to traffic areas. (min. dist. 0,5m)
- Note! The soil level in the tank is lower than ground level around the tank. Entry of pedestrian and vehicles must be prevented with curbstones or fences or similar structures

2.2 Excavation

- Size the cavity so that there is space enough to work around the tank and its anchoring system.
- Do not install the tank directly onto a concrete base or solid rock. Make a leveling layer (min 100 mm) on bottom of the cavity using sand or gravel. Compact and level the layer and check the height is correct.
- If surrounding soil is wet and/or poorly water permeable (solid rock, clay, etc.), it is recommended to drain the cavity if possible.

2.3 Lifting and installation

- Lift the unit from the lifting straps on the sides.
- Lift the unit on the bottom of the cavity. Check the height and that it is level.

2.4 Anchoring

- Groundwater can lift the tank up in case when tank is empty for long period, for example during the replacing of the filtering material.
- Install Uponor anchoring systems according to their instructions.
- Place anchoring systems according to PIC 1.

2.5 Assembling Rain Garden components (PIC 2)

- Assemble the pipes and overflow chamber components in the rain garden according to PIC 2.
- Cover the overflow pipe temporarily to prevent filler material falling in the overflow chamber during the filling of the Rain garden unit.

2.6 Filling the filtering/ infiltration materials (PIC 3)

- Fill up the collection layer 25cm with gravel 8-16 mm. Adjust the drainage pipe horizontally level. Fill so that the drainage pipe is fully covered.
- Fill up the filter layer 60cm with filter sand (and biochar 10% mixture).
- If sand trap (K) is used, attach it to the Rain Garden unit with fixing screws (4 pcs.).
- Fill up the growth layer 20cm (plants and their soil types according to separate plan).

2.7 Filling up the excavation

- Fill up the cavity with stone free sand or gravel.
- Compact in 20-30cm layers.
- If the soil surface around the tank is paved with stones, the stones can be installed to rest on support rib (PIC 1, det. 1.1).

2.8 Plants

- Plant the vegetation according to separate plan.

Moving > Water

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