

Porous Paving



Stormwater
Sensitive
Homes

Why install porous pavements?

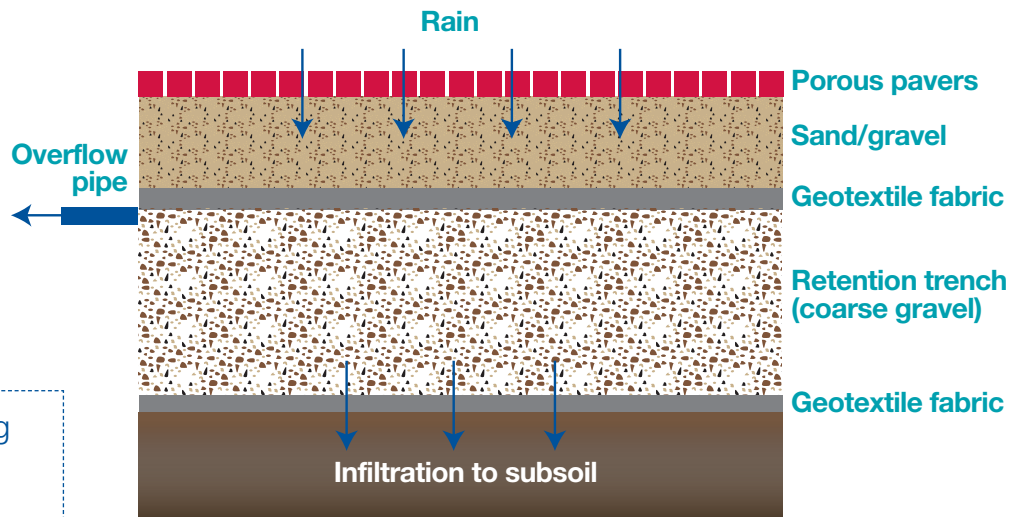
In urban environments, paved surfaces such as roads, driveways and courtyards cover a significant area. These 'impervious' surfaces do not allow rainfall to soak through them to the underlying soil and as a result contribute to larger amounts of stormwater entering into our streams than would otherwise naturally occur. These stormwater flows carry with them pollution that has been washed off from roads, pavements and roofs. The rapid pace that stormwater is delivered to the stream contributes to bank erosion and habitat scouring.

To protect our streams from this occurring, we need to reduce the amount of 'impervious' surfaces in our urban areas so that less water and pollutants are washed off and delivered quickly to the stream.

One way to do this is to install porous pavements instead of traditional concrete pavements in our backyards and driveways. Porous pavements reduce the amount of runoff by allowing water to soak through the surface and into the underlying soil.



Porous paving as a garden pathway



How porous paving works

By using porous paving that allows rainwater to soak through to the soil instead of standard concrete or block pavers, you can:

- reduce the amount of 'impervious' surfaces on your block
- increase groundwater recharge by allowing the water to soak through the soil
- improve stormwater quality by filtering stormwater and reducing pollutant loads
- reduce high flows entering the waterway from urban areas causing stream erosion and habitat scouring

How does porous paving work to treat stormwater?

Porous paving is installed just like traditional paving and comes in many forms. It can be asphalt, or modular pavers that are concrete, ceramic or plastic.

Porous paving contains surface voids that are filled with sand or gravel that filter the stormwater. They overlay a gravel retention trench that allows greater capacity to retain stormwater. During heavy rain, excess stormwater overflows to the street drainage systems when the trench becomes full.

To maximise its capacity to allow water to soak through to the underlying soil, porous pavements should not be installed over rock or other substrate that has little or no capacity to allow water to infiltrate through it.

Maintenance

Concrete grid, ceramic and modular plastic block pavers require less maintenance than asphaltic porous paving as they are less easily clogged by sediments. To ensure their effectiveness and lifespan, porous paving should be:

- Protected from 'shock' sediment loads especially during and shortly after construction when clogging may occur
- Inspected for cracks and holes and replaced as necessary
- Cleaned from accumulated debris and sediment
- Weeded or mowed where appropriate (largely for aesthetic purposes)

When properly maintained porous paving should have an effective life span of at least 20 years.

Costs

Costs of porous paving depend on the type of material used and range from \$70 - \$120 per sqm. (Melbourne Water, 2005). Cost to install porous pavements are similar to other pavements.



For more information:

Melbourne Water's Water Sensitive Urban Design Website: www.wsud.melbournewater.com.au

Municipal Association of Victoria Clearwater Program: www.clearwater.asn.au

Water Sensitive Urban Design in the Sydney Region: www.wsud.org

Urban Stormwater Best Practice Environmental Management Guidelines, Victorian Stormwater Committee, CSIRO publishing, 1999.

WSUD Engineering Procedures: Stormwater, Melbourne Water, 2005.

Delivering Water Sensitive Urban Design: Final Report of Clean Stormwater - a planning framework, ABM, 2004.