Permeable ECO Paving

From ISLAND BLOCK & PAVING ISLAND

Permeable ECO Pavers are the ideal choice to form an attractive exposed aggregate pavement whilst at the same time allowing water to ingress to the sub grade below.

The permeable pavement system, constructed using Permeable ECO pavers 400mm long x 300mm, allows surface water to infiltrate through the purpose laid 50mm x 50mm drainage voids, into the sub base and sub grade below, to provide obvious benefits to the environment.

Typical Permeable ECO paver project using 50mmx50mm drainage voids

INFORMATION

Permeable ECO pavers are becoming more popular due to increasing water restrictions and drought conditions. Designers are influenced by various authorities to use storm water management options that go beyond the conventional practice of collecting storm water run-off and draining it off site.

Key Benefits:

- Environmentally responsible
- Reduces the load on existing drainage infrastructure
- Similar load bearing capacity to standard pavers
- Cost effective, easy to lay pattern to create the drainage voids
- Reduces moisture evaporation from soil sub grade
- Better surface run off control
- Permeable ECO pavers are made with recycled aggregates
- **Water conservation benefits**

Permeable ECO paving system sizes available:

- 400 x 300 x 50mm thick
- 400 x 300 x 65mm thick (trafficable, light vehicles)
- 225 x 113 x 80mm thick (trafficable, heavy vehicles)

By installing a pavement using Permeable ECO pavers, water is encouraged to infiltrate through the pavement surface and substructure to the ground below. Permeable pavers are installed so a series of 50mm x 50mm drainage voids are permanently formed in the finished pavement surface. These drainage voids are filled with free draining aggregates (either blue metal or feature pebbles) 3-10mm, to allow water to pass through the surface to the layers below. These layers then allow the water to infiltrate into the sub grade to be drained or stored to a suitable location. SEE TYPICAL OPTIONS BELOW.

DRAINAGE VOIDS with 6mm Blue Metal Infill

DRAINAGE VOIDS with 10mm Pebble Infill

PERMEABLE PAVEMENT COMPONENTS

The essential components of a permeable pavement are shown in **Figure 1**. The elements of the pavement, which are described in detail in subsequent sections of this manual, comprise:

1. A surfacing of permeable pavers design to permit the rapid infiltration of rainfall typically, the pavers will range in thickness between 50 and 80 mm.
2. The joints between the pavers must not be left empty but should be completely filled with a uniform aggregate. Sand must not be used instead of aggregate as it slows water ingress.
3. Depending on the degree of infiltration that can be achieved for a particular design it may be necessary to provide drainage at the perimeter of the paving to manage overflows. This can be achieved by using conventional gulley inlets to existing storm sewers or by constructing swales or bio-retention areas adjacent to the pavement.
4. The permeable pavers are laid on a 20-40 mm bedding course of uniform aggregate typically 2-5 mm in size. Sand is not suitable as a bedding course and should not be used in permeable pavements because it does not allow water to infiltrate rapidly enough to cope with Australian rainfall.
5. Beneath the bedding layer a permeable geotextile may be installed. This is optional and is only used when it is desired to mobilise biological controls of hydrocarbons etc.
6. A permeable basecourse normally consisting of compacted unbound granular materials provides the main load-bearing layer. The thickness of this layer must be sufficient both to resist traffic loads and to provide adequate water storage.
7. On cohesive subgrades, a filter fabric must be provided under the basecourse to prevent clay migrating into the pavement. This is not needed where the subgrade is granular ie. a sandy or gravelly material.
8. Where the subgrade is contaminated, saline or expansive, an impermeable membrane must be provided under the basecourse to prevent water entering or leaving the pavement. This membrane will normally be run up the sides of the pavements as shown in **Figure 1**.
9. For some pavements a drainage pipe is installed to remove water from the pavement.
10. The in-situ soil at the pavement site is known as the subgrade. The type of subgrade determines what type of permeable pavement cross-section is feasible and how thick the pavement will need to be to resist traffic and to control stormwater. The subgrade must always be compacted to a depth of at least 100 mm.

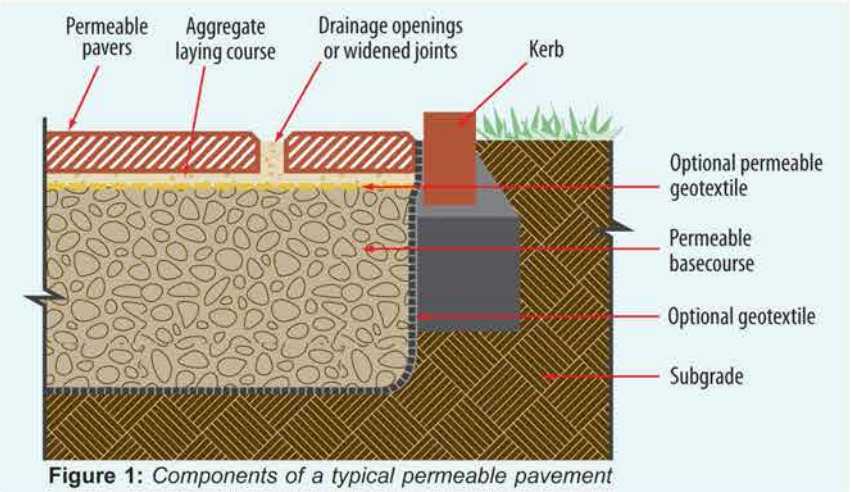

Figure 1: *Components of a typical permeable pavement*

FOR FURTHER DESIGN AND TECHNICAL DETAILS VIEW

www.cmaa.com.au/paving_permeable.html

COLOURS AVAILABLE

EBONY ECO * # -

MIST ECO * # -

LIMESTONE # -

EBONY PEBBLE #

MIST PEBBLE #

PEWTER ECO * #

* Available in 400x300x50mm

Available in 400x300x65mm

- Available in 225x113x80mm

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