

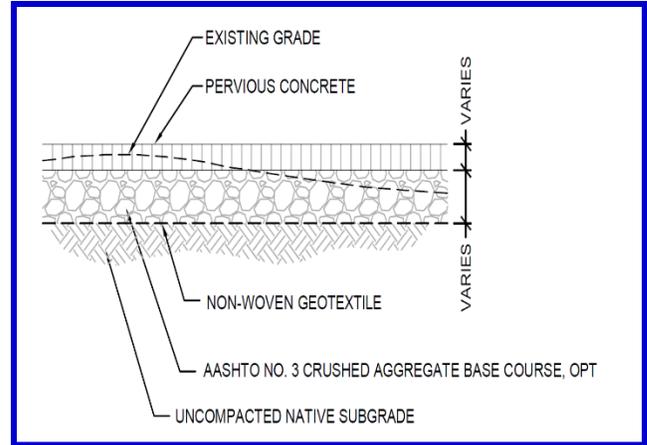


POROUS PAVEMENT STORMWATER MANAGEMENT

What is Porous Pavement?

Porous Pavement is a pavement that allows the movement of water to avoid flooding and weathering of man-made surfaces.

The purpose of porous pavement is to reduce and manage stormwater while encouraging infiltration. Porous pavement accepts only precipitation, not stormwater runoff. It may be used for walkways, patios, plazas, driveways, parking lots, and some portions of streets.



Example porous concrete cross section
Source: Oregon State University Extension



Common scene of a car spraying water along a road. With porous pavement used instead, along with properly managed stormdrains, this drainage issue could be avoided.

Types of Porous Pavement

There are three main types of porous pavement: porous concrete, paving stones, and grass pavers.

Porous Concrete: a mixture of cement, water, and coarse aggregate, allowing up to 5 gal/ft²/min to pass through (*Portland Cement Association*).

Paving Stones: includes steppingstones and flag stones, materials vary.



Paving stones in Portland.
Source: Green Girl

POROUS PAVEMENT

Grass Pavers: also called turf pavers; open cells made of concrete or plastic that allows grass to grow through them.



Grass Pavers in the Willamette.
Source: Green Girl

Benefits of Porous Pavement

There are many benefits of porous pavement:

- **Reduction in surface temperature:** immediate piping ensures reduced sun exposure prior to stream reentry; this is good for the fish and other aquatic life as they depend on cooler temperatures.
- **Reduction in stormwater runoff:** the more precipitation onto impervious surfaces, the more stormwater runoff is carried into ditches and streams. This includes pollutants such as pesticides, oils, and debris. Porous pavement reduces this runoff by allowing immediate water infiltration as the rain falls.
- **Reduction in flooding:** immediate infiltration means water will not pool on top of impervious surfaces. This reduces flood risk, and even property damage.

- **Protection of trees:** tree roots are the tree's life support. When impervious surfaces are constructed, they impede tree roots from growing properly, and can therefore damage or even kill trees. Porous pavement allows roots to continue to grow.
- **Replenishment of water tables:** piping water away from becoming trapped in developed impervious areas increases stream flow and water.

Operations and Maintenance

- Remove leaves, debris, and accumulated sediment from pavement surface. Sweep regularly.
- Keep overflows clear from debris or other obstructions.
- Vegetation and large shrubs/trees that limit access or interfere with porous pavement operation shall be pruned.
- Fallen leaves and debris from deciduous plant foliage shall be raked and removed. Poisonous, nuisance, dead or odor producing vegetation shall be removed immediately.
- Grass shall be mowed to less than four inches and grass clippings shall be bagged and removed.
- Irrigation shall be provided (if needed).