

Low Runoff Pavement

Copying Nature

New paving techniques imitate the way nature handles rain and snowmelt water. Traditional pavements, including concrete, blacktop, bricks, blocks and paving stones, shed water quickly. They are defined as impervious surfaces, since water cannot pass through them. Virtually all the water falling on these hard surfaces runs off. Too many impervious surfaces in a neighborhood may cause flooding and pollution downstream.

In contrast, grasslands and forests absorb up to six inches of precipitation before water runs off the surface. Rainfall slowly percolates into the soil where it is used by plants, recharges groundwater or slowly drains to streams, rivers or lakes. Nutrients and other pollutants are held in the landscape's soils.

Like natural areas, a low runoff pavement system can reduce flooding and prevent pollution. Installed correctly, water passes through the hard surface into an underground reservoir layer.

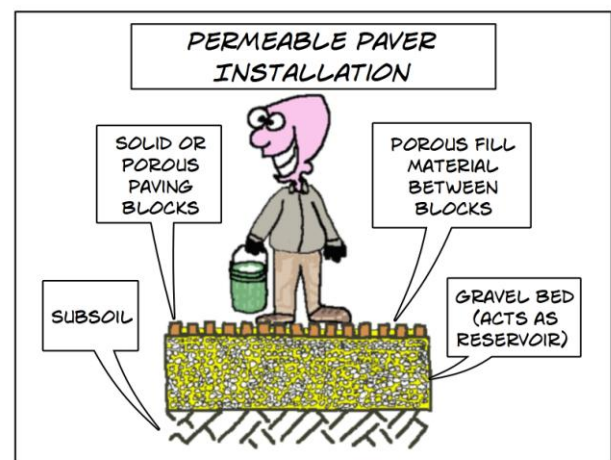
Permeable Pavers

Permeable paving stones, bricks or blocks are shaped to maintain a gap between them after they are installed. Water enters these spaces flowing into a crushed rock or gravel base underneath. The base layer drains into the ground below, or may slowly drain through a pipe connected to a storm sewer.



Porous Concrete and Asphalt

Porous concrete is a special mixture of Portland cement, coarse aggregate and water that leaves pore spaces in the finished product. Porous asphalt is similar to conventional blacktop, but uses fewer small particles in the mix creating air spaces. Both products allow water to pass through them into a gravel or stone layer underneath. Installing porous pavement may be more expensive than traditional pavement. The costs are often offset, however, by the reduced need to install curbs, gutters, catch basins, pipes and ponds to handle runoff.



Installation and Maintenance

The key to installing a low runoff pavement system is creating a stable base layer large enough to store the water draining into it. The thickness of the base needed depends on the materials used, soils present, the size of the area drained, and the slope of the surrounding landscape.

Permeable paver systems may be installed by homeowners following manufacturer's instructions. Porous concrete and asphalt systems need to be designed and installed by experienced contractors.

Depending upon the type of traffic present, low runoff pavement may need to be cleaned regularly to keep fine soil particles from clogging the spaces between blocks or pores in the paving material.