

Permeable Pavement

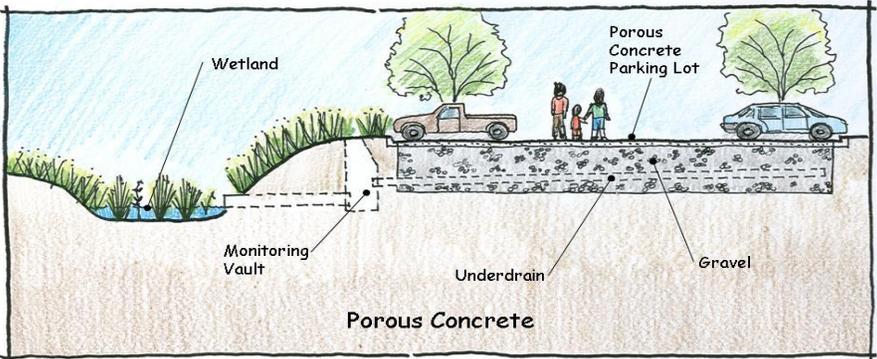
How does permeable pavement help manage stormwater?

Permeable pavements refer to paving materials that promote the absorption of rainfall and snowmelt. There are four main types of permeable pavements: porous concrete, porous asphalt, permeable grid pavers, and permeable pavers. See the table below for a detailed description of each paving system.

TYPES OF PERMEABLE PAVING SYSTEMS	
Type of Paving System	General Description
Porous concrete	Porous concrete looks very similar to regular concrete. Porous concrete typically consists of specialty formulated mixtures of Portland cement, coarse aggregate and water that has been manufactured to have gaps through which water can flow into an infiltration bed of uniformly graded gravel.
Porous asphalt	Porous asphalt looks very similar to regular asphalt. Porous asphalt consisted of coarse aggregate bonded together by asphalt cement with sufficient gaps through which water can flow into an infiltration bed of uniformly graded gravel.
Permeable grid pavers	Permeable grid pavers are modular plastic pavers that fit together with funnel-like openings installed over infiltration bed of gravel. Depending on the site, grass or rock is used to fill in the funnel-like openings. Using plastic for the grids makes them very flexible and they can be used on uneven surfaces.
Permeable pavers	Permeable pavers are modular concrete pavers that fit together with funnel-like openings installed over infiltration bed of uniformly graded gravel. Depending on the site, grass or rock is used to fill in the funnel-like openings.

Each of the four types of permeable pavement systems is constructed with an underdrain and infiltration trench comprised of gravel underneath the paver, porous concrete, or porous asphalt. Rain that falls on the permeable pavement infiltrates into the gravel and then into the soil and/or groundwater below. Once the storage capacity of the infiltration trench has been reached, the underdrain will convey the water into the storm sewer system. By infiltrating the majority of the stormwater that falls onto the permeable pavement, the amount of water and pollution flowing into storm sewers or directly into streams is greatly reduced. Thus, permeable pavement helps maintain a more stable base flow to streams, reduces flood peaks, and reduces stream bank erosion.

Permeable pavement removes suspended solids through filtration. Dissolved pollutants such as nutrients and metals are removed and/or transformed as runoff infiltrates into the soil. Utilizing the Illinois EPA’s Estimating Pollutant Load Reductions for Nonpoint Source Pollution Control BMPs worksheets, the permeable pavement can remove approximately 75% of the total phosphorous, 90% of total suspended solids, and 100% of lead and zinc.



Permeable Pavement

Where and how can Permeable Pavement be located?

Scale Watershed/County Town/Village Neighborhood Lot

Applications

<input checked="" type="checkbox"/> Retrofit	<input checked="" type="checkbox"/> New	<input type="checkbox"/> Ongoing/Maintenance
<input checked="" type="checkbox"/> Preventative	<input checked="" type="checkbox"/> Remedial	<input type="checkbox"/> Driveways
<input checked="" type="checkbox"/> Parking lots	<input checked="" type="checkbox"/> Streets	<input type="checkbox"/> Sensitive Areas
<input type="checkbox"/> Roofs	<input type="checkbox"/> Lawns	

Effectiveness

<input checked="" type="checkbox"/> Runoff Rate Control	<input checked="" type="checkbox"/> Runoff Volume Control	<input type="checkbox"/> Habitat Preservation/ Restoration
<input checked="" type="checkbox"/> Sediment Control	<input checked="" type="checkbox"/> Nutrient Control	<input checked="" type="checkbox"/> BOD/COD Control
<input checked="" type="checkbox"/> Other Pollutant Control		

Additional Benefits of Permeable Pavement

Permeable pavers provide much more than just stormwater management. They also:

- ❖ Permeable pavements are just as stable as conventional methods and provide the same functionality of traditional concrete and asphalt.
- ❖ Snow melts faster on permeable pavements because of the improved drainage
- ❖ Permeable pavements are also effective in reducing the “urban heat island” effect.
- ❖ The use of vegetated pavers improves the aesthetic appeal of paved areas.

Maintenance

Permeable pavements should be inspected annually and after large storms to assure the pavements are still fully functioning. Permeable pavements should also be vacuumed periodically to remove any accumulated sediment and leaves. Vacuum-type street sweeping equipment is the most effect method of vacuuming permeable pavement systems. Snow and ice should be removed via scrapping and shoveling. Avoid the use of chemicals and sand on permeable pavement.



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