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### Porous Asphalt Pavement for Stormwater Management

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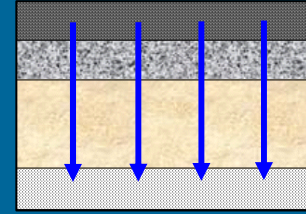
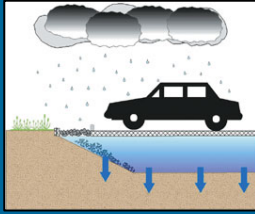
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# Porous Asphalt Pavement for Stormwater Management

The UNH Stormwater Center

Web: [www.unh.edu/erg/cstev/](http://www.unh.edu/erg/cstev/)



<p><b>Benefits and Uses</b></p>	<p>Porous Asphalt can be used in replace of traditional stormwater management measures given the proper conditions. Porous Asphalt's primary advantages are:</p> <ol style="list-style-type: none"> <li>1. Quantity and Flood Control</li> <li>2. Water Quality Treatment</li> <li>3. Recharges Groundwater to Underlying Aquifers</li> <li>4. Allows for Reduction of Stormwater Infrastructure (Piping, Catch-Basins, Retention Ponds, Curbing, etc.)</li> <li>5. Suitable for Cold-Climate Applications, Maintains Recharge Capacity When Frozen</li> <li>6. Allows for Reduced Salt and Sand Usage Due to Low/No Black Ice Development</li> <li>7. Maintains Traction While Wet</li> <li>8. Reduced Spray from Traveling Vehicles, Reduced Roadway Noise</li> <li>9. Extended Pavement Life Due to Well Drained Base and Reduced Freeze-Thaw</li> </ol>
<p><b>Disadvantages</b></p>	<ul style="list-style-type: none"> <li>• Requires Routine (Quarterly) Vacuum Sweeping (Vac-Assisted Dry Sweeper Only)</li> <li>• Proper Construction Stabilization and Erosion Control are Required to Prevent Clogging</li> <li>• Quality Control for Material Production and Installation are Essential for Success</li> <li>• Accidental Seal-Coating or Similar Surface Treatment Will Cause Failure</li> </ul>
<p><b>Cost &amp; Maintenance</b></p>	<ul style="list-style-type: none"> <li>• Total Project Cost is Comparable for Porous Asphalt with Reduced Stormwater Infrastructure VS. Standard Pavement Applications where Stormwater Infrastructure is Required</li> <li>• Materials Cost is ~20-25% More Than Traditional Asphalt</li> <li>• Long-term Maintenance is Required by Routine Quarterly Vacuum Sweeping</li> <li>• Sweeping Cost May Be Off-set by Reduced Deicing Costs</li> <li>• Repairs Can be Made with Standard Asphalt Not to Exceed 10% of Surface Area</li> </ul>
<p><b>Design Criteria</b></p>	<ul style="list-style-type: none"> <li>• Soil Permeability is Recommended Between 0.25-3.0 Inches Per Hour</li> <li>• Recommended Drainage Time of 24-48 Hours</li> <li>• Sub-Drains Should be Used Where Proper Drainage May be an Issue to Minimize Frost Damage</li> <li>• Most Appropriate for use with Low-Use Roadways and Parking Lots – Without a Modified Asphalt Binder</li> <li>• 3-5 Feet of Vertical Separation is Needed from Seasonal High Groundwater</li> </ul> <p><b>TYPICAL POROUS ASPHALT CROSS-SECTION</b></p>
<p><b>Additional Resources</b></p>	<ul style="list-style-type: none"> <li>• The UNH Stormwater Center, Porous Asphalt Specs - General Porous Bituminous Paving and Groundwater Infiltration Beds, <a href="http://www.unh.edu/erg/cstev/">http://www.unh.edu/erg/cstev/</a></li> <li>• Federal Highway Administration (2006) Porous Pavement Fact Sheet <a href="http://www.fhwa.dot.gov/environment/ultraurb/3fs15.htm">http://www.fhwa.dot.gov/environment/ultraurb/3fs15.htm</a></li> <li>• Ferguson, B. (2005), Porous Pavements, CRC Press.</li> <li>• Porous Asphalt Pavements (2004) Information Series 131. The National Asphalt Pavement Association, Lanham, MD.</li> </ul>