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Pervious Concrete Pavement for Stormwater Management

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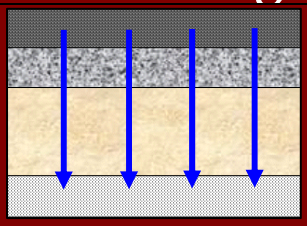


Benefits and Uses

Pervious Concrete Can Be Used In Place of Traditional Stormwater Management Measures Given The Proper Site Conditions. The Primary Advantages Include:

- Quantity and Flood Control
- Water Quality Treatment
- Recharges Groundwater
- Reduction in Stormwater Infrastructure (Piping, Catch-Basins, Ponds, Curbing, etc.)
- Suitable for Cold-Climate Applications, Maintains Recharge Capacity When Frozen
- No Standing Water or Black Ice Development During Winter Weather Conditions
- Maintains Traction While Wet
- Reduced Surface Temperatures; Minimizes the Urban Heat Island Effect
- Extended Pavement Life Due to Well Drained Base and Reduced Freeze-Thaw
- Less Lighting Needed Due to Highly Reflective Pavement Surface

Limitations

- Requires Routine (Quarterly) Vacuum Sweeping (Vacuum-Assisted Dry Sweeper Only)
- Requires a Certified Pervious Concrete Craftsman On-site During Installation
- Proper Soil Stabilization and Erosion Control are Required to Prevent Clogging
- Quality Control for Material Production and Installation are Essential for Success
- Concrete Must Cure Under Plastic for 7-Days After Installation

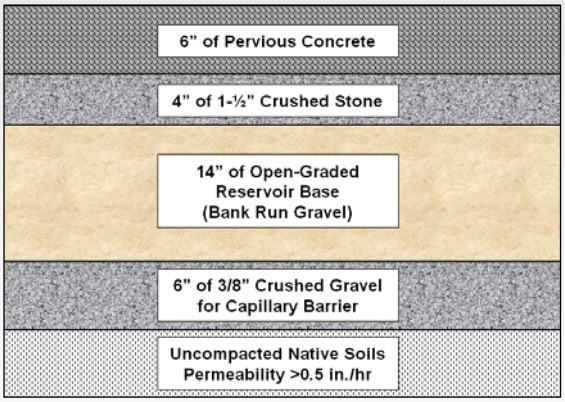
Cost & Maintenance

Total Project Cost is Comparable for Pervious Concrete with Reduced Stormwater Infrastructure VS. Standard Pavement Applications where Stormwater Infrastructure is Required

- Materials Cost is ~25% More Than Traditional Concrete
- Need for Skilled Craftsman Increases Installation Costs
- Long-term Maintenance is Required by Routine Quarterly Vacuum Sweeping
- Sweeping Cost May Be Off-set by Possible Reduction in Deicing Costs
- Repairs Can be Made with Standard Concrete (Not to Exceed 10% of Surface Area)

Design Criteria

- Soil Permeability is Recommended Between 0.25 - 3.0 Inches Per Hour
- Recommended Drainage Time of 24-48 Hours
- Sub-Drains Should be Used Where Proper Drainage May be an Issue to Minimize Frost Damage
- Most Appropriate for Use with Parking Lots, Low-Use Roadways, and Sidewalks
- 3-5 Feet of Vertical Separation is Needed from Seasonal High Groundwater



TYPICAL CROSS-SECTION

Additional Resources

- The UNH Stormwater Center, Pervious Concrete Specs, http://www.unh.edu/erg/cstev/
- American Concrete Institute (2006). Technical Document 522R-06: Pervious Concrete.
- NNECPA (2007): http://www.nnecpa.org/
- Federal Highway Administration (2006) Porous Pavement Fact Sheet http://www.fhwa.dot.gov/environment/ultraurb/3fs15.htm