Permeable Pavement


Kellogg Park Green Lot

Background

Permeable pavement is a type of outdoor surfacing that allows runoff to seep into the ground or into an underlying reservoir layer where it can be directed to an underdrain conveyance system. A wide variety of permeable pavement types are available that offer a range of utility, strength and permeability and can be incorporated into rights-of-way, sidewalks, parking lots and driveways. Permeable pavement is an alternative to conventional concrete and asphalt paving and can help enhance design aesthetics.

Permeable pavement is effective for removing:

- Sediment
- Trash
- Oil and grease
- Metals
- Bacteria

Site Assessment

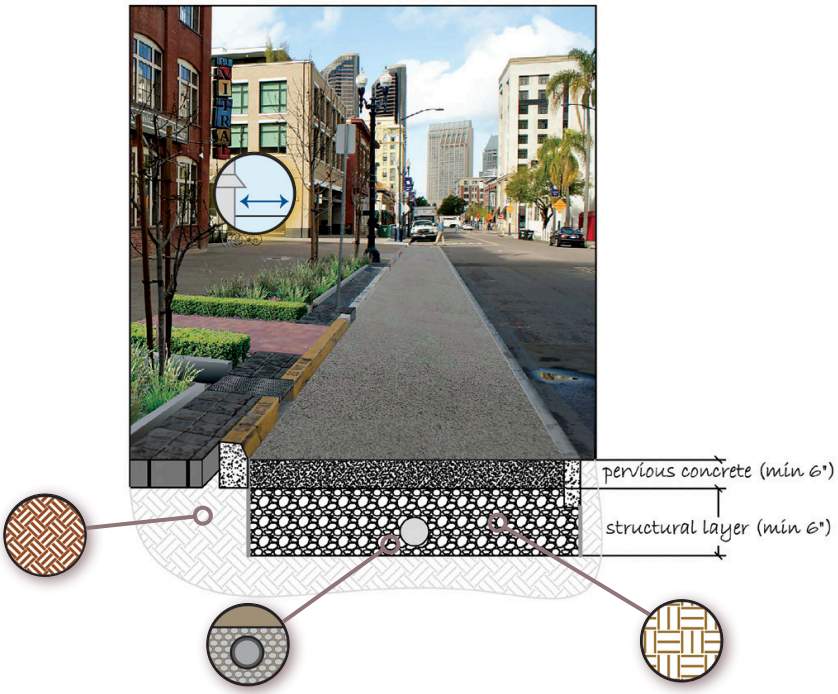
The use of permeable pavement is encouraged for sites such as parking lots, driveways, rights-of-way, and other lightly traveled areas. Permeable pavement must be designed to support the maximum anticipated traffic load but should not be used in highly trafficked areas because pavers can wear and break down. For designs that encourage runoff to seep directly into the ground, ensure the surrounding soils will allow for adequate infiltration. In addition, precautions should be taken to protect soils from compaction during construction.

Drainage area	Soil infiltration rate	Water table separation	Depth to bedrock	Facility slope	Inflow rate
N/A	> 0.5 in/hr *(if < 0.5 in/hr, install UD*)*	> 10 ft *(if > 2 but < 10 ft, install UD*)*	> 10 ft *(if > 2 but < 10 ft, install UD*)*	< 0.5%	3 cfs

Pollutant Removal			Runoff volume reduction	Groundwater recharge
	Sediments: High Trash: High Bacteria: Medium Organics: Low	Nutrients: Low Metals: Medium Oil and Grease: Medium	High no UD*; Medium with UD*	Medium no UD*; Low with UD*

**UD = Underdrain system*

Permeable Pavement



Existing Buildings: Assess building effects on the site. Permeable pavement must be set away from building foundations at least 10 feet and 50 feet from steep slopes.

Media layers: Permeable pavement consists of a surface pavement layer, an underlying stone aggregate reservoir layer and a filter layer or fabric. In general, the open-graded subbase is designed to have a 40 percent void space and a depth of at least 6 inches.

Soil Type: Examine site compaction and soil characteristics. Minimize compaction during construction; do not place the bed bottom on compacted fill. Determine site-specific permeability; it is ideal to have well-drained soils.

Underdrain system: Below the media (aggregate stone) layers, an underdrain system can be used to route infiltrated stormwater. The pipe can either connect to the structural storm drain system, or route to surface conveyance or other storm water treatment BMPs. The underdrain pipe should be at least 6 inches in diameter and installed at a 0.5 percent minimum slope.

think BLUE SAN DIEGO
thinkblue.org

To access the complete San Diego Low Impact Development Design Manual, visit: sandiego.gov/stormwater/pdf/lidmanual.pdf

To access the Storm Water Design Standards Manual, visit: sandiego.gov/development-services/news/pdf/stormwatermanual.pdf

To report storm water pollution, call (619) 235-1000