

Turf Pavers

PURPOSE: Turf pavers used in place of traditional impervious paving materials reduce the total amount of impervious surface area, promote infiltration of runoff into the ground, and can aid with reducing peak runoff velocity and volume.

Turf pavers are an innovative alternative to conventional impervious paving, which contributes a significant amount of runoff to storm sewers and waterways, especially in urban areas. This type of paver is a matrix of polymer, concrete or cement blocks designed to form a void space that is filled with grass, sand, or gravel, which allows runoff to infiltrate into the soil. The material used for the paver itself is resistant to weathering and the effects of prolonged sunlight.

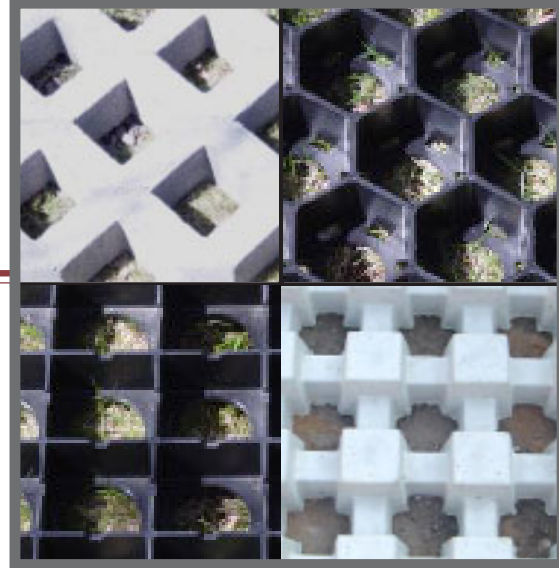
Turf pavers are well-suited for areas that receive pedestrian and light vehicular traffic, such as walkways, bike paths, overflow parking lots, fire lanes and golf cart paths. The paver grid provides extra support to prevent vegetated areas from being destroyed by tires.

Installation of pavers begins with a level base of existing soil. A layer of crushed gravel may be spread over the soil base to provide a reservoir for holding runoff prior to infiltration. Incorporating a gravel base will add the benefits of reducing peak runoff velocity and volume. Next, a layer of sand or sand/gravel mix is placed and compacted to the required depth. The pavers are laid in place, then filled with another layer of compacted concrete sand or sand/soil mix to the depth called for in the paver manufacturer's specifications. Finally, a cover of turf or grass seed is spread on top of the paver cells. *Manufacturer's specifications should be followed as to the materials used for the base and surface.*

NOTE: Sand-filled openings provide greater infiltration rates than grass openings. Some turf pavers are designed for use on sloped areas; consult the product specifications to determine the type of paver suitable for sloped site conditions.

General Design Considerations

- Use in areas with soil permeability between 0.5 and 3.0 inches per hour
- Existing soil and/or stone reservoir base must be graded flat
- Install at least two to five feet above seasonal high groundwater table to prevent contamination of groundwater
- Location should be at least 100 feet from drinking water wells to avoid contamination
- Thickness of gravel base may vary according to designated use of area (ex. a thicker base may be required to sustain weight of fire trucks)
- Design should include overflow drainage to remove excess stormwater
- Gravel used in sand/gravel mix should be no larger than 3/4 inch in diameter
- Follow manufacturer's specifications for depth of sand underneath pavers
- Pavers should be swept clean of fill prior to adding grass seed or turf
- Remove any invasive vegetation, including small tree seedlings, from paver grids
- Maintenance includes regular mowing
- Use snow plows, sand and salt with caution during snow removal
- Installation in areas of high traffic or heavy contamination not recommended (ex. service stations)



Benefits and Uses

- Reduces total amount of impervious cover
- Enhances aesthetics of local landscape
- Recharges groundwater supply
- Reduces peak velocity and volume of stormwater runoff delivered to storm sewer system
- Alleviates flooding and erosion downstream
- Prevents soil compaction by vehicle weight and promotes healthy root growth
- Applicable to all types of sites

Additional Resources

PA Department of Environmental Protection
- www.dep.state.pa.us
- Pennsylvania Stormwater Best Management Practices Manual

US Environmental Protection Agency
www.epa.gov

Cahill Associates
www.thcahill.com - click on "Technologies" for project examples and general information

Low Impact Development Center
www.lid-stormwater.net - click on Site Map and select Permeable Paving

Metropolitan Council Environmental Services
www.metrocouncil.org - click on "Environmental Services" to find the link to the *Urban Small Sites BMP Manual*

Stormwater Manager's Resource Center
www.stormwatercenter.net