

know where
it goes

take simple
steps to reduce
STORMWATER POLLUTION

Plastic Grid Pavers

Flexible, open-cell designs for a variety of needs

Description

Plastic grid pavers, also called grass pavers, gravel pavers, and reinforced turf, are a type of open-cell unit paver, the cells of which are filled with soil and planted with turf. They distribute the weight of traffic and prevent compression of the underlying soil.¹ They can be filled with either gravel or soil and grass, with the former being a better choice for more frequently used areas. These pavers are constructed primarily from recycled plastic materials. Plastic grid pavers can be found in the form of interlocking blocks or in rolls.



Photo of Grasspave2 showing base course and sod courtesy of Invisible Structures Inc.



Photo of emergency vehicle parked safely on a fire lane paved with Grasspave2 courtesy of Invisible Structures Inc.

Description cont.

Due to their flexibility, plastic grid pavers can be used on sites with uneven terrain, but they do not have as much intrinsic strength as concrete pavers. They do not require drains, detention or retention ponds, or any other associated drainage facility. Grass pavers can improve site appearance by providing vegetation where there would otherwise be only pavement.¹



Grasspave installed as an emergency access road looks just like a lawn on the campus of St. Andrews school in Barrington.

Uses & Benefits

Plastic grid pavers are recommended for use in:

- Parking areas
- Residential driveways
- Fire lanes and emergency access roads
- Golf cart paths
- Sidewalks
- Bike paths

There are also plastic grid paver products that can be used for temporary soil stabilization during construction such as NDS Tuff-track™.

Design Criteria

For grass pavers, chose a lawn grass type that has deep roots that can penetrate the reservoir base course, such as tall fescue.² Irrigation may be required but should be in the form of infrequent soakings so that the turf develops deep root systems. Plastic grid pavers come in rolls or in interlocking blocks and require some subgrade preparation depending on site conditions and the manufacturer guidelines. Information such as percolation rate and frost-heave potential of soil, and the depth to the high water table may be needed. The need for and design of a base course is determined by the maximum traffic load weight anticipated at the site. Plastic grid pavers have been shown to function best with stabilized shoulders in RI.³

Maintenance

Plastic grid pavers will benefit from seasonal inspections to spot-check for issues, and those filled with gravel or stone may need the aggregate replenished at times. Grid pavers planted with turf are to be maintained like a lawn, with regular mowing and watering. Manufacturers usually supply recommendations for product maintenance, but the following maintenance suggestions are generally true:

- Periodically reseed to fill in bare spots of grass pavers
- Periodically add gravel to gravel pavers
- Attach rollers to the bottom edge of a snowplow to prevent catching of edges of plastic grid pavers
- Do not allow large amounts of runoff from adjacent impervious surfaces onto grass or gravel paved areas as this may result in clogging
- Do not aerate turf as this will damage the pavers ⁴



Coventry Center Bike Path, paved with Netpave 50.

Reducing Stormwater Runoff

Impervious surfaces such as rooftops, driveways, roads, and parking lots change the flow of water over the land. Conventional stormwater management focuses on quickly removing runoff from a developed area, most often by using pipes to move water to sewers or directly to nearby waterways. Excessive stormwater runoff entering coastal waters can cause problems including harmful algal blooms and beach closures. Permeable pavement infrastructure provides necessary hard surfaces while simultaneously reducing the amount of stormwater exiting a developed area.



Photo of overflow lot paved with Grasspave2 courtesy of PowellsWood Garden.



Photos showing Gravelpave2 driveway installation courtesy of Seas the Day.

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Limitations

Grass pavers are not suitable for everyday, all-day parking because the grass will get insufficient sunlight. Consider frequency of use before deciding whether to use turf or gravel fill for plastic grid pavers.¹

Estimating Cost

Plastic grid pavers range in cost depending on their application. NDS GrassPave, for medium-duty use such as a residential driveway or emergency vehicle access road, is \$2.30 per square foot. NDS Tufftrack is \$7.88 per square foot and highly versatile. Tufftrack can be used for a light-duty application such as a footpath by forgoing the subbase, or for heavy-duty applications such as construction entrance soil stabilization. Most other plastic grid paver options are under \$4 per square foot and are for light- to medium-duty use. Prices for NDS products found on <https://www.ndspro.com/>. Many of the pictures used in this factsheet feature products by Invisible Structures Inc. To be directed to a local distributor call 800-233-1510.

Sources

- 1 Massachusetts Low Impact Development Toolkit. "Permeable Paving." Fact sheet. Metropolitan Area Planning Council. Boston, MA. n.d. Web.
- 2 Center for Turfgrass Science. "Turfgrass Species for Pennsylvania." PennState College of Agricultural Sciences. State College, PA. 2018.
- 3 Low Impact Development Inventory. "Coventry Center Greenway Bike Path." Rhode Island Stormwater Solutions. Kingston, RI. 2018.
- 4 "Rhode Island Stormwater Designs and Installations Standards Manual." Coastal Resources Management Council & Rhode Island Department of Environmental Management. Rhode Island. 2015, pp. 5-33. Web.