porous pavement solutions

RIGID PAVERS

GEOBLOCK®
grass pavers

GEOPAVE®
aggregate pavers
**RIGID PAVERS DELIVER PERFORMANCE.**

Environmental regulations that control and limit stormwater runoff, reduce impervious surface, and increase green space have resulted in the growth of permeable pavements for traffic areas. Presto manufactures two high-quality rigid pavers that offer numerous environmental and performance benefits over hard surface pavements.

**POROUS PAVEMENT OPTIONS**

Presto’s GEOBLOCK® and GEOPAVE® systems are both rigid porous pavements designed to handle the most demanding load support requirements while promoting natural stormwater infiltration, reducing runoff, and reducing the need for detention or retention ponds.

**GEOBLOCK® GRASS PAVERS**

Robust design delivers exceptional protection to turf, resistance to torsional loading stresses and support for optimal growing medium.

**GEOPAVE® AGGREGATE PAVERS**

Molded mesh bottom design spreads loads and keeps highly-permeable aggregate confined for maximum stormwater infiltration and on-site storage. Shown with SNAP delineators.
COMMON POROUS PAVEMENT APPLICATIONS

- Access Roads: Emergency, Maintenance & Utility Vehicles
- Roadways: Shoulders, Pull-off Areas
- Parking Areas: Daily, Overflow
- Trails & Walkways: Pedestrian Trails, Greenways, Barrier-Free Access
- Golf Courses: Cart Pathways & Edging, Tee Areas
- Residential: Driveways, Parking Areas, Camper & Boat Bays
- General: Event Areas, Pedestrian

AREAS OF USE:

- Condominiums & Housing Complexes
- Commercial Buildings
- Educational Campuses
- Parks & Nature Preserves
- Hospitals & Medical Centers
- Shopping Centers
- Sports Facilities
- Golf Courses
- Churches
- Residential
GEOBLOCK® & GEOBLOCK®5150
GRASS PAVERS FOR OCCASIONAL TRAFFIC

The industry’s strongest and most proven, high-performance turf protection systems address all vehicle loading and stormwater requirements. The GEOBLOCK® & GEOBLOCK®5150 systems’ engineered base material supports loading up to H-20, is highly permeable to maximize stormwater percolation and, with topsoil infill, offers an optimal growing medium for vegetation.
**GEOBLOCK® & GEOBLOCK®5150 PERFORMANCE POINTS**

**High Load Transfer & Flexural Strength**
The large, rigid surface area with interconnected cell walls and strong interlocking connections offers the highest load transfer and flexural strength in the industry.

**Resistance to Torsional Loads**
The rigid design with shared walls and strong interlocking connections resists movement or breakage from vehicle turning stresses and torsional loading.

**Resistance to Rutting**
Interconnected cell walls spread point loads across the paver system with minimal ‘flexing’, eliminating potential for concentrated drive lane rutting.

**Turf Performance**
Deep, interconnected cells protect topsoil and grass from damage caused by repeated loading. Topsoil infill supports healthy grass that establishes faster, remains harder, and performs better than systems with sand infill. The engineered base material contributes to good percolation, healthy grass growth, and long-term performance.

**Low Base Requirements**
Strong unit strength lowers installation costs by requiring less base depth than lighter-weight or rolled systems to achieve H-20 loading.

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**GEOBLOCK® & GEOBLOCK®5150 PERFORMANCE COMPARISON TO ROLLED PRODUCTS**

<table>
<thead>
<tr>
<th>Performance Point</th>
<th>GEOBLOCK® Rigid Pavers</th>
<th>Flexible Rolled Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Distribution &amp; Resistance to Torsional Loads</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Base Requirements</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Medium for Vegetative Growth</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Turf Protection</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Turf Performance</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Stormwater Infiltration</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

- **Contiguous pavement with shared walls offers highest load distribution and resistance to vehicle loading stresses.**
- **Interconnected cell walls spread point loads across the paver system for a high resistance to concentrated rutting.**
- **Higher paver strength results in higher performance with less base material. Less base = less excavation cost and less land disturbance. Paver units can even be driven on unfilled.**
- **Engineered base mix of clear stone/topsoil offers high percolation rate and an ideal medium for vegetative root growth. Grass establishes faster and remains harder without additives.**
- **Deep, interconnected cell walls encapsulate and protect topsoil and grass from damage caused by repeated loading for optimal turf protection.**
- **Good turf protection, and topsoil infill and engineered base offer high percolation to support healthy grass. Grass establishes faster, remains harder, requires less maintenance and performs better long term.**
- **Topsoil infill and engineered base offer a 5-10X faster percolation rate and better water storage capacity.**
GEOPAVE®
AGGREGATE PAVERS FOR EVERYDAY TRAFFIC

The industry’s only aggregate paver system designed from the ground up for aggregate infill. The GEOPAVE® system’s structural framework holds highly-permeable, open-graded base course in place through a unique herringbone cell pattern and monolithic mesh bottom. Strong connections create one contiguous pavement that is highly resistant to traffic loading and torsional stresses. The herringbone surface offers a paver-stone aesthetic and allows colored stone for design options and area differentiation. GEOPAVE® pavements are a natural way to infiltrate and store stormwater on-site.
GEOPAVE®

PERFORMANCE POINTS

High Load Distribution
A shared wall system, strong connection clips and load-spreading mesh bottom (snow-shoe effect) offers an industry-high load transfer capability.

Resistance to Torsional Loads
A shared wall system and strong connection clips create a contiguous framework that resists movement or breakage from vehicle turning stresses and torsional loads.

Resistance to Rutting
Interconnected cell walls spread point loads across the paver system with minimal ‘flexing’, eliminating potential for concentrated drive lane rutting.

Aggregate Containment
A monolithic mesh bottom design keeps aggregate infill contained and prevents the ‘lifting’ effect from granular fill downward migration.

Low Base Requirements
Strong paver strength lowers installation costs by requiring less base depth than lighter-weight or rolled systems to achieve H-20 loading.

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GEOPAVE® RIGID aggregate pavers offer SUPERIOR PERFORMANCE BENEFITS

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GEOPAVE®

PERFORMANCE COMPARISON TO ROLLED PRODUCTS

<table>
<thead>
<tr>
<th>Performance Point</th>
<th>Load Distribution</th>
<th>Resistance to Torsional Loading</th>
<th>Resistance to Concentrated Rutting</th>
<th>Aggregate Containment</th>
<th>Base Requirements</th>
<th>Storm water Infiltration</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOPAVE® Rigid Pavers</td>
<td>✓ Contiguous pavement with shared walls, strong connection clips, and load-spreading mesh bottom offers high distribution of vehicle loads.</td>
<td>✓ A shared wall system and strong connections create a framework highly resistant to movement or breakage from vehicle turning stresses and torsional loads.</td>
<td>✓ A shared wall system and strong connections distribute point loads laterally and is highly resistant to concentrated rutting even in high traffic areas.</td>
<td>✓ An integral mesh bottom keeps aggregate contained, preventing the ‘lifting’ effect from granular fill downward migration.</td>
<td>✓ Interconnected cell walls and strong connections create a robust paver structure with low base requirements for structural strength.</td>
<td>✓ Highly-permeable open-graded aggregate infill infiltrates stormwater exceptionally fast.</td>
</tr>
<tr>
<td>Flexible Rolled System</td>
<td>Disjointed cell walls that ‘flex’ and shallow cells do not effectively spread loading across the pavement surface.</td>
<td>Disjointed cell walls and weak connection points are susceptible to movement and breakage under vehicle torsional loads.</td>
<td>Disjointed cell walls that ‘flex’ under loading allow for deep rutting over time in wheel lanes.</td>
<td>Flexible rolled systems are typical with glued-on fabric bottoms, which are susceptible to tearing, allowing aggregate to push through the bottom.</td>
<td>Shallow cell walls and cell wall gaps have lower load-spreading capability, creating need for higher base requirements for structural strength.</td>
<td>Rolled systems with glued fabric bottoms clog and percolate much more slowly.</td>
</tr>
</tbody>
</table>
STORMWATER & ENVIRONMENTAL BENEFITS

Achieve your green building and stormwater goals by incorporating the proven GEOBLOCK® & GEOPAVE® porous pavements in your landscape plans.

HIGH PERMEABILITY
Highly permeable systems increase groundwater recharge and decrease surface runoff associated with stormwater discharge from paved areas.

Our systems minimize site disruption and the development footprint by reducing or eliminating the need for larger, on-site stormwater ponds.

STORMWATER STORAGE
GEOPAVE® pavements function as a stormwater detention/retention layer storage ‘basin’ and can complement underground storage systems. Depth of base can be increased when additional stormwater storage is required.

IMPROVES STORMWATER QUALITY
Both pavements increase natural water infiltration, filter contaminants and reduce non-point source pollution.

RECYCLED MATERIAL CONTENT
GEOBLOCK® and GEOPAVE® pavers are manufactured from up to 97% recycled polyethylene.

COOLER SURFACE
Grass and aggregate are cooler pavements that reduce the heat island effect associated with traditional hard pavements.

CONTRIBUTIONS TO GREEN INFRASTRUCTURE (GI) & LOW IMPACT DEVELOPMENT (LID) DESIGN

GEOBLOCK® and GEOPAVE® solutions are suitable for green infrastructure (GI) and low impact development (LID) land planning. Both systems promote stormwater infiltration and reduce environmental impact through their permeable pavement surfaces to effectively manage stormwater runoff at its source.

Contributions to U.S. Green Building LEED® Credits
Both the GEOBLOCK® and GEOPAVE® systems offer contributions to USGBC LEED® credits in these categories:

• Reduced Site Disturbance
• Stormwater Management
• Reduced Heat Island Effect
• Recycled Content

Many prestigious LEED® projects have included GEOBLOCK® and GEOPAVE® porous pavements because of their numerous credit contributions and the systems’ sustainability and performance.
### Design Resources

**Specification & Planning Tools**

Presto offers comprehensive and easy-to-use resources and tools for designing GEOBLOCK®, GEOBLOCK®5150 and GEOPAVE® porous pavements. CSI-specifications, CAD details, design resources and videos are available for each product.

**Presto SPECMake® Specification Tool**

Our online SPECMaker® specification program lets designers build custom 3-part CSI specifications in 5 minutes or less.

**Industry Standard Resources**

Presto’s product specifications, CAD details and BIM models are available in industry-standard formats on ARCAT.com and CADDetails.com, leading providers of manufacturer-specific building product information for architects, engineers and contractors.

### Depth of Engineered BASE Recommendation

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>GEOBLOCK®</th>
<th>GEOBLOCK®5150</th>
<th>GEOPAVE®</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VEGETATED SURFACES</strong></td>
<td>Topsoil Infill</td>
<td>Topsoil Infill</td>
<td>Aggregate Infill</td>
</tr>
<tr>
<td></td>
<td>Topsoil/Aggregate Base</td>
<td>Topsoil/Aggregate Base</td>
<td>Aggregate Base</td>
</tr>
<tr>
<td>CBR&lt;2-4</td>
<td>CBR &gt;4</td>
<td>CBR&lt;2-4</td>
<td>CBR &gt;4</td>
</tr>
<tr>
<td>Heavy Fire Truck &amp; H-20 Loading</td>
<td>14 in (350 mm)</td>
<td>10 in (250 mm)</td>
<td>6 in (150 mm)</td>
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<tr>
<td>Typical 110 psi, 80,000 lb</td>
<td></td>
<td></td>
<td>Infrequent Passes</td>
</tr>
<tr>
<td>Single axle loading of 32 kips, tandem axle loading of 48 kips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light Fire Truck &amp; H-15 Loading</td>
<td>10 in (250 mm)</td>
<td>6-10 in (150-250 mm)</td>
<td>4 in (100 mm)</td>
</tr>
<tr>
<td>Typical 85 psi, 60,000 lb</td>
<td></td>
<td></td>
<td>Infrequent Passes</td>
</tr>
<tr>
<td>Single axle loading of 24 kips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility/Delivery Truck &amp; H-10 Loading</td>
<td>6-10 in (150-250 mm)</td>
<td>4-8 in (100-200 mm)</td>
<td>2 in (50 mm)</td>
</tr>
<tr>
<td>Typical 60 psi, 40,000 lb</td>
<td></td>
<td></td>
<td>Infrequent Passes</td>
</tr>
<tr>
<td>Single axle loading of 16 kips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cars &amp; Pickup Truck Access</td>
<td>4-8 in (100-200 mm)</td>
<td>2-4 in (50-100 mm)</td>
<td>None</td>
</tr>
<tr>
<td>Typical 45 psi, 8,000 lb</td>
<td></td>
<td></td>
<td>Occasional Passes</td>
</tr>
<tr>
<td>Single axle loading of 4 kips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trail Use: Surface Stabilization</td>
<td>2-4 in (50-100 mm)</td>
<td>0-2 in (0-50 mm)</td>
<td>None</td>
</tr>
<tr>
<td>&lt;1,000 lb</td>
<td></td>
<td></td>
<td>Occasional Passes</td>
</tr>
<tr>
<td>Loading for ATVs, golf carts, campers, boats, equestrian, motorcycle, bicycle, pedestrian, wheelchairs</td>
<td></td>
<td></td>
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</tbody>
</table>

¹ For CBR<2, contact Presto Products Company for recommendations. CBR is the abbreviation for California Bearing Ratio.

² A minimum of 2 inches of aggregate base should be placed below the GEOPAVE units as a drainage layer and an infiltration storage area. Greater depth may be required depending upon design rainfall requirements and subbase permeability.

The Engineer of Record shall be responsible for the design and stability of the open graded base course.
SITE PLANNING & DESIGN

CREATE YOUR DESIGN VISION

Enhance your site plans with two unique porous pavement solutions that will define your design vision. Include GEOBLOCK® and GEOPAVE® systems in your landscape plan for optimal performance and stormwater benefits—as well as to make unique aesthetic design statements.
CONSTRUCTION RESOURCES

INSTALLATION TOOLS

GEOBLOCK® and GEOPAVE® systems are designed for easy installation—requiring less site preparation, less subgrade improvement, less excavation and less structural base than other porous pavement systems.

The paver units are easily cut with ordinary hand or power tools for installing around obstructions and contours, as well as irrigation systems. Their easy-to-handle size minimizes the quantity of units required on a given job, reducing labor and installation costs.

Product is shipped in cubes that allow stacking for maximum shipping efficiency.

GEOBLOCK® and GEOPAVE® pavers can be driven on when unfilled, facilitating construction equipment for installation of the topsoil infill.

Site Evaluation and On-Site Installation Support

A qualified manufacturer’s representative may be contracted to assist with pre-construction site evaluation, construction training or on-site supervision.

Contact Presto GEOSYSTEMS® for details.

PRESTO GEOSYSTEMS® COMMITMENT — To provide the highest quality products and solutions.

Presto GEOSYSTEMS® is committed to helping you apply the best solution to your porous pavement requirements. Rely on the leaders in the industry when you need a solution that is right for your application.

Contact Presto GEOSYSTEMS® or their network of knowledgeable distributors/representatives for assistance with your permeable pavement needs.