

Grass Cell

Base and Infill Materials for Grass System



Introducing Grass Cell, the latest innovation in porous paving technology. Grass Cell allows occasional use impervious pavements to be converted to pervious, drivable grass surfaces.

But Grass Cell goes a step further. With lateral openings within the structure, Grass Cell not only protects roots against compaction, it allows the roots of rhizomatous grasses to spread through the block within the protected soil layer. This creates a living, self-healing system which is not only resilient, but looks great year round.



Grass Cell grass reinforcement structure allows horizontal and vertical root growth.

Why use Porous Pavements?

- Convert impervious pavements to pervious, drivable surfaces
- Reduce stormwater runoff
- Reduce heat island effect
- Encourage infiltration to improve water quality
- Improve aesthetics

Why is Grass Cell Different?

- Lateral openings within the block allow roots to spread within the protected soil layer

Reducing Runoff as much as 90%

Using the rational method to calculate peak runoff flows:

$$Q = CiA$$

Where:

- Q = Peak Rate of Runoff
- C = Runoff Coefficient
- i = Intensity of the Event
- A = Area of the Contributing Basin



Grass Cell modifies the Runoff Coefficient (C). Typical pavements use a coefficient of .70 - .95, meaning that they shed 70% - 95% of the stormwater that falls on them.

Grass areas use a much lower coefficient, typically between .05 - .35, meaning they only contribute 5% - 35% of their rainfall to runoff. This reduction of 35% - 90% is infiltrated or consumed by the vegetation, and can drastically improve site hydrology.

Physical Properties of Root Zone Mix	
Total Porosity	35-55%
Airfilled Porosity	15-30%
Capillary Porosity	15-25%
Saturated Hydraulic Conductivity	4-8 Inches per Hour

Installation Guide

1. **Excavate** - Excavate area to the proper depth, accounting for the thickness of the base materials (per engineer's specifications, typically +/- 6") and Grass Cell (2.05"). Top of Grass Cell should be at least .25" below any adjacent paved surfaces. Base of excavation should be flat and relatively level (per engineer's specifications, typically < 6%).



2. **Prepare Base** - Use of a woven monofilament geotextile is recommended as a separation layer between the subgrade and base. Although not required, this will help maintain long-term porosity of the pavement. Base materials should be a blend of open-graded stone (AASHTO #5) and topsoil. The topsoil content must not exceed the void space of the stone (typically < 40%). Place base materials into excavation and compact.



3. **Install Grass Cell** - Grass Cell units are palletized in panels of nine blocks. These panels measure 2.56' x 4.73' and are 12.1 sf/panel. Grass Cell panels are joined using a dove tail slip joint. Begin installation at intersection with paved areas to ensure correct elevation (see above). If units do not butt against any paved areas, use a string line to square the area. Working from this line, attach panels and fill-out installation area. Grass Cell units can be cut around obstacles such as light posts and sprinkler heads.

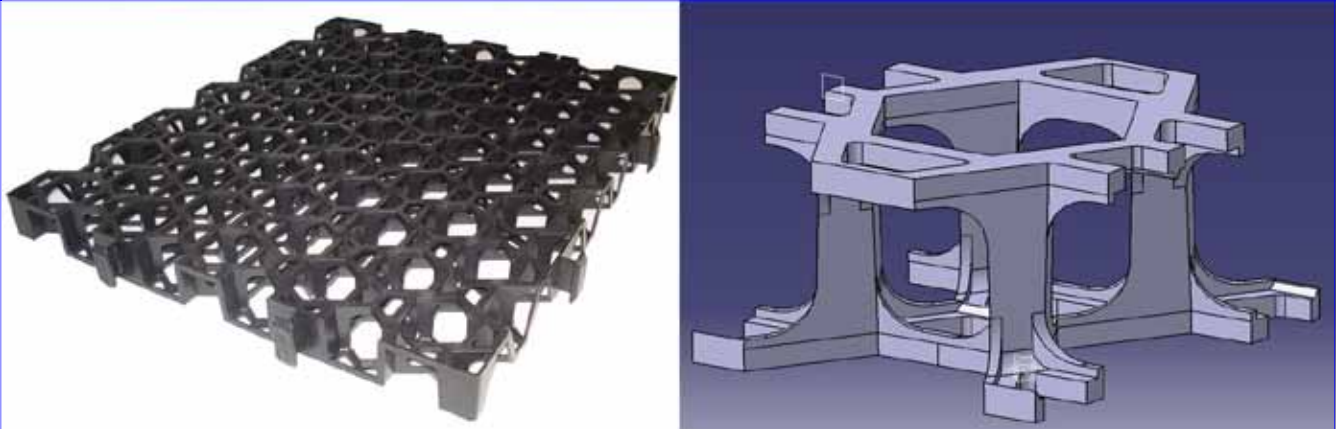


4. **Backfill & Seed/Sod** - Fill Grass Cell units with a mixture of sand & topsoil or compost (per engineer's specifications, typically a 70/30 mix). Lime may be added during mixing to ensure long-term porosity of the system. Equipment to dump or spread infill materials may drive on filled units. Backfill should completely cover Grass Cell units, with an additional 1/2" - 3/4" over the blocks to allow mix to settle. When available, water may be used to encourage backfill to settle into units. Backfilled units may be seeded or sodded (preferably with a rhizomatous variety) in a manner consistent with regional guidelines. Seed or sod must be watered frequently until established. All pedestrian and vehicular traffic must be diverted around the installation until grass is established (typically 4-6 weeks for seed, 3-4 weeks for sod).



Grass Cell Specifications

Product Photo



Specifications

Item	Metric	Unit	English	Unit
Width	500.00	mm	19.68	inches
Length	600.00	mm	23.62	inches
Height	50.00	mm	1.96	inches
Area per Piece	0.30	square meters	3.23	square feet
Unit Weight	6.00	kg / sm	1.24	lbs / sf
Surface Open Area	> 90	%	> 90	%
Internal Void Area	> 95	%	> 95	%
Base Material	100% Recycled Polypropylene			
Biological & Chemical Resistance	Unaffected by mold, algae, soil-born chemicals, bacteria and bitumen			
Service Temperature	-10 to 85	degrees Celcius	-14 to 185	degrees Farhenheit
Compressive Strength (Unfilled)	225.00	t / sm	320.02	psi
Compressive Strength (Filled)	4,465.7	t / sm	6,351.7	psi

Note: GrassCell Product and Systems are Design Registered or Design Registration Pending

Safety Factors: Engineers, designers and geotechnical engineers should design and calculate safety factors to a serviceable limited state to suit specific project requirements.

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