

GRASS CELL

Base and Infill Materials for Grass Systems

Base Materials

An aggregate layer is typically placed below the Grass Cell units, and must be designed to adequately spread the surface load to prevent subgrade rutting while maintaining porosity to encourage infiltration of rainwater. A suggested blend of materials to achieve these goals includes:

| Material | % by Volume |
|--|-------------|
| Crushed, clean, washed stone graded from 0.25 – 1.5" with void space after compaction >30% (Such as AASHTO #5) | 70% |
| Grass Cell Infill Mix - see below (Not to exceed void space of stone) | 30% |

Base Depth

Required base thickness can be easily calculated based on the bearing capacity of the subgrade and the maximum surface load (usually a tire or outrigger). Typical applications will require a base of 4 – 6".

Base Installation

The base materials must be graded and compacted to conform to the desired finished grade. Prior to placing the Grass Cell units, the base should be scarified to ensure porosity.

Geotextile

Thought should be given to the use of a woven monofilament geotextile to prevent elluviation of fines into the base over time.

Infill Material

The material used to backfill the Grass Cell units provides a growth media for the grass while retaining enough moisture to prevent the grass from drying out. To accomplish this the infill material will need to fall into the following ranges:

| 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 |

All percentages are BY VOLUME, not weight.

These properties are the primary requirement for the infill materials and supercede all information that follows.

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Suggested Infill Blends

There are many ways to blend materials to meet the properties noted and achieve the goals of the infill material. The best blend for your project will vary with the volume of traffic expected to drive over or park on the grass. If the area will be subjected to frequent use such as weekly overflow parking, the sand content must be increased. For areas of less frequent traffic such as fire lanes, topsoil can be added to improve moisture retention. Once a blend has been selected, it is advisable to perform a few basic tests to ensure the porosity and conductivity of the blend as previously noted.

| Suggested Blends for Root Zone Mix | | | |
|---|--------------------------|-----------------------------|--------------|
| Component | Frequent Use (Weekly) | Infrequent Use (Monthly) | |
| | | Sandy Topsoil | Clay Topsoil |
| Sand* (Mixed to the gradation below) | 90% | 40% | 80% |
| Course > 1 mm | 20% | 20% | 20% |
| Medium 0.25 - 1.0 mm | 60% | 60% | 60% |
| Very Fine < 0.15 mm | 20% Max | 20% Max | 20% Max |
| Topsoil | 0% | 50% | 10% |
| Decomposed Bark Mulch | 10% | 10% | 10% |

*The breakdown shown for sand can often be achieved with concrete sand.



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