

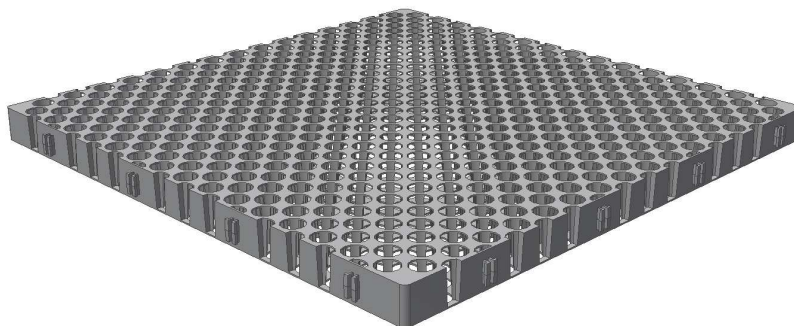
VersiCell® Drainage Panels Installation Instructions



This instruction is a guide for the installation of the VersiCell drainage panels on roof-deck installations, under plantings, or under pavers.

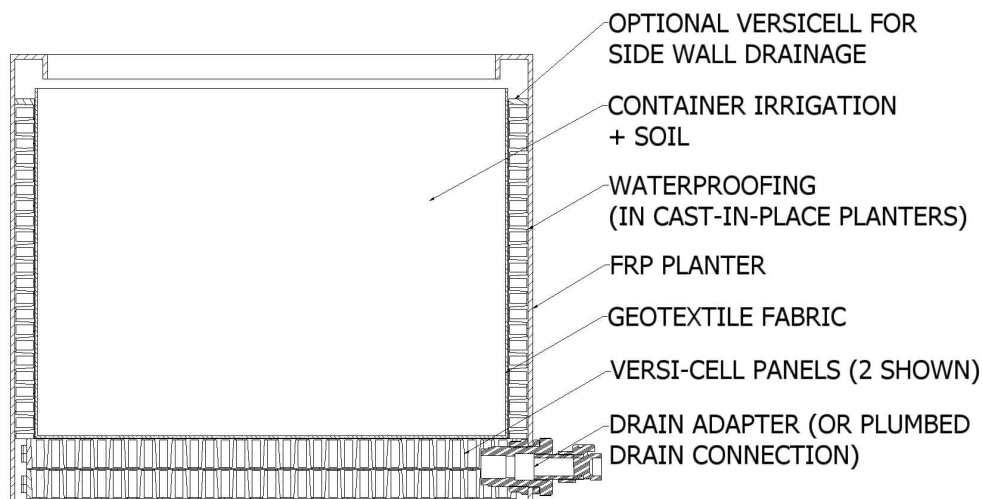
<u>PARTS/HARDWARE LIST</u>		
VersiCell 30	VersiCell 20	VersiCell 35 Flex
<u>Accessories</u>		
Waterproof Membrane	Geotextile Filter Fabric	

Tools Required: No tools are required for assembly. Cutters for trimming panels to fit and zip-tie tools may be required depending on your particular installation.



VersiCell Panel
(EVC-30 shown above)

Planter Installation



1a) Typical planter drainage installation

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STEPS

1) Planter Preparation

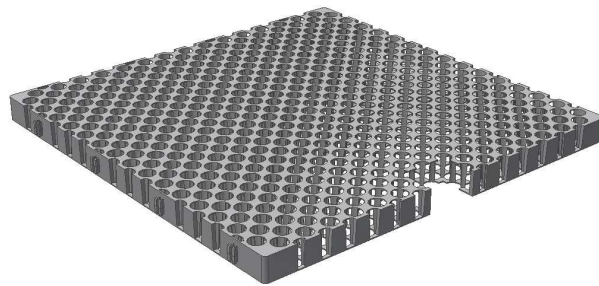
A planter may typically require 2"-3" of rock at the bottom to allow drainage. Using two stacked EVC-30 or three stacked EVC-20 VersiCell panels will provide better drainage and less weight.

A drain should be positioned so that it is below the top level of the stacked modules (no more than 1-1/2" above the FRP planter base). Drill the drain hole and install a drain adapter with plug or ball valve. For cast-in-place planters, a plumbed drain or connection should be used.

2) Drainage Installation

Measure the interior space of the planter base. Assemble one or multiple panels using the interlocking edges for larger areas, and trim to closely match the planter interior dimensions.

Measure the location of the drain adapter and the interior of the planter. Transfer these measurements to the EVC panels and trim to fit around the drain when a protruding drain is used. The EC panels should cover drains of cast-in-place planters.



1b) VersiCell panel with drain clearance cut

With the panels trimmed to fit the drain, place them inside the planter. Depending on the size of panel (EVC-30, EVC-20) place the appropriate number of stacks to get the drainage depth. A protection sheet may be required on top of waterproof membranes to keep panels from damaging the membranes.

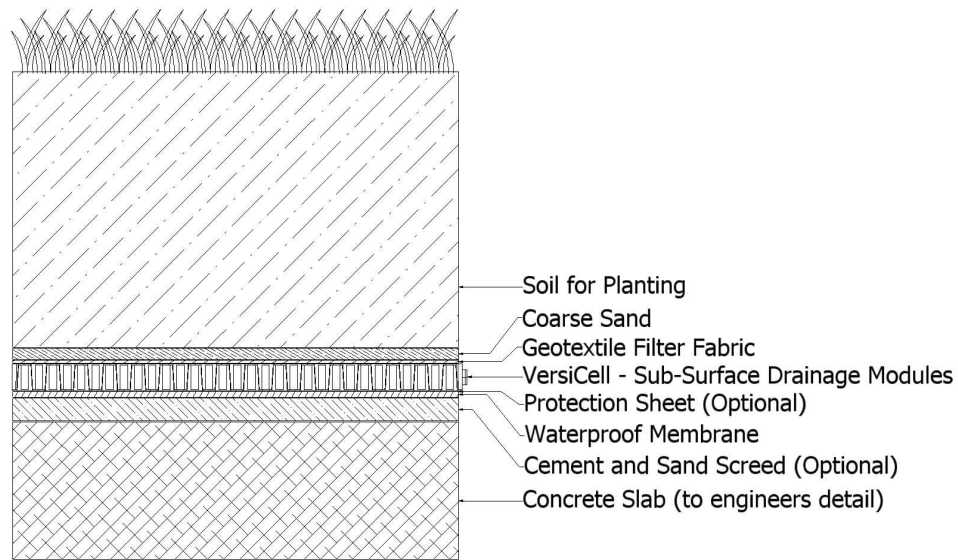
3) Place Filter Fabric

Cover the VersiCell modules with a geotextile filter material. Overlap any adjacent geotextile sheets at least 8 inches. Make certain that the ends of all the installed drainage modules are properly sealed with geotextile material to ensure sand and soil particles do not enter the drainage modules. The geotextile material could wrap up the remaining interior walls, again making certain that adjacent overlaps are at least 8 inches.

4) Place Soil

Inspect module and geotextile installation prior to any in-filling. Clay material should not be used as an in-fill over the geotextile. In-fill with appropriate planting soil.

Landscape Roof Deck (Green Roof) Installation



2a) Typical cross-section for green roof installation

STEPS

1) System/Surface Preparation

In a new roof application, ensure that root-resistant waterproof membrane is installed. If existing roof waterproofing is not root resistant, install root barrier membrane. Verify waterproofing integrity by conducting ponding test for at least 24 hours. Ensure fall is towards drainage outlet(s). Provide adequate protection for waterproofing system during installation.



2b) Root-resistant waterproof membrane

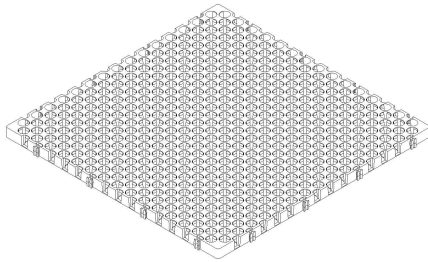
2) Installing Sub-Surface Drainage Modules

Protect the VersiCell panels from excessive UV exposure by storing them underneath tarps, under a fully-shaded cover, or within a storage module if the time between delivery and installation exceeds one week.

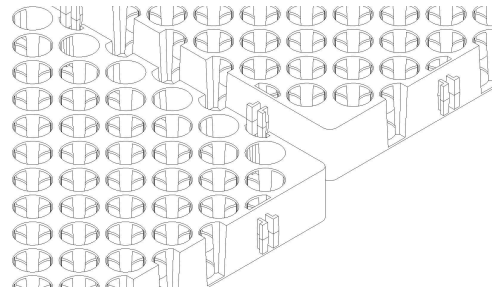
Position the drainage modules directly over waterproof membrane with a protective sheet (optional) between them.

Install directly over drain outlets.

Interlock adjacent modules along connecting edges.



2c) VersiCell Sub-Surface Drainage Module



2d) Interlocking of adjacent modules edges

Form large stable mats for large areas.

Cut modules to size or to fit into corners, at drainage gully, plinths, or curved areas, as necessary.

Protect drainage modules from construction traffic and ensure that they are free from silt, debris, or other foreign materials.



2e) Modules placed directly over waterproofing membrane



2f) Large, stable mats formed for larger areas



2g) Cut panels to size or fit



2h) Panels cut to fit plinths.

3) Installing Geotextile Filter

Cover the VersiCell modules with a geotextile filter material. Overlap any adjacent geotextile sheets at least 8 inches. Make certain that ends of all the installed drainage modules are properly sealed with geotextile material to ensure sand and soil particles do not enter the drainage modules.

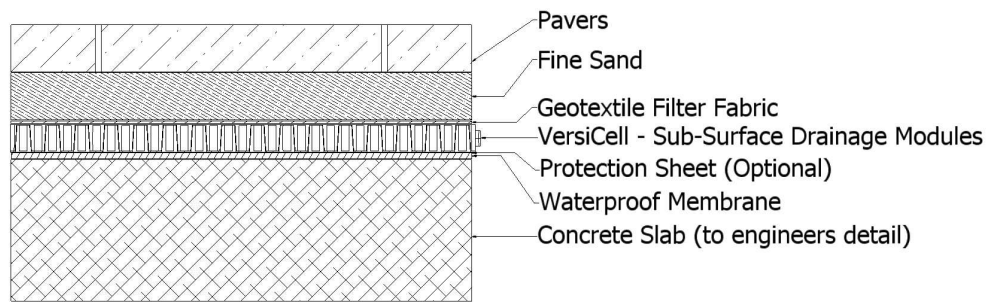
4) Placing Coarse Sand and Planting Soil

Inspect module and geotextile installation prior to any in-filling. Clay material should not be used as an in-fill over the geotextile. Spread 2 inches of coarse sand evenly over the geotextile material. Make sure that the material is not damaged during the in-filling process. In-fill regular planting soil (depth according to project requirements or as required), over the layer of coarse sand, depending on plant species selected and depth limitations of the planting area.



2i) Coarse sand placement awaiting soil

Paver Deck Installation



STEPS

1) System/Surface Preparation

In a new roof application, ensure that waterproof membrane is installed. Verify waterproofing integrity by conducting ponding test for at least 24 hours. Ensure fall is towards drainage outlet(s). Provide adequate protection for waterproofing system during installation.

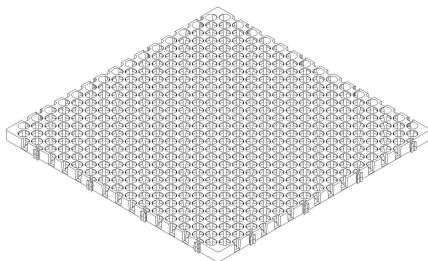
2) Installing Sub-Surface Drainage Modules

Protect the VersiCell panels from excessive UV exposure by storing them underneath tarps, under a fully-shaded cover, or within a storage module if the time between delivery and installation exceeds one week.

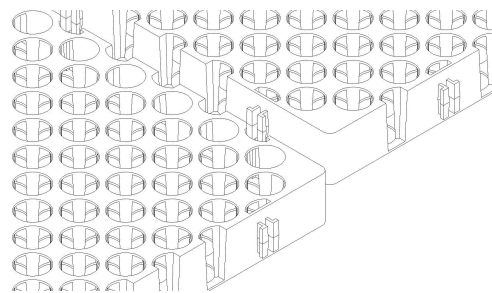
Position the drainage modules directly over waterproof membrane with a protective sheet (optional) between them.

Install directly over drain outlets.

Interlock adjacent modules along connecting edges.



2c) VersiCell Sub-Surface Drainage Module



2d) Interlocking of adjacent modules edges

Form large stable mats for large areas.

Cut modules to size or to fit into corners, at drainage gully, plinths, or curved areas, as necessary.

Protect drainage modules from construction traffic and ensure that they are free from silt, debris, or other foreign materials.

3) Installing Geotextile Filter

Cover the VersiCell modules with a geotextile filter material. Overlap any adjacent geotextile sheets at least 8 inches. Make certain that ends of all the installed drainage modules are properly sealed with geotextile material to ensure sand and soil particles do not enter the drainage modules.

4) Placing Fine Sand

Inspect module and geotextile installation prior to any in-filling. Clay material should not be used as an in-fill over the geotextile. Spread 2 inches of fine sand evenly over the geotextile material. Make sure that the material is not damaged during the in-filling process. Level the sand for placement of pavers.

5) Place Pavers

Place pavers in the order and pattern for the installation design.