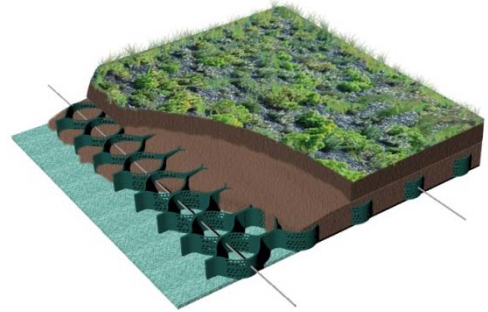


Sloped Layered System

Description

The Sloped Layered green roof system is a layered vegetative system consisting of a protective sacrificial layer, capillary layer, drainage layer, filtration layer, retention layer, and media retention layer. This built-in-place system is specifically designed to be used on sloped roofs between 2:12 and 6:12 pitched. These layers provide a viable foundation for the growing medium and plants on sloped roofing assemblies. It can be used in areas that do not have a rectangular shape, since the multilayer system can be cut and shaped to fit any perimeter condition.

The Sloped Layered System is designed to detain and retain rain and irrigation water, allow hydration of plants, prevent root rot, allow airflow under and up through the layered system, allow phyto-remediation (removal of contaminants) from the growing media de-energize wind flow under the multilayer reducing chance of wind uplift, protect the roof with a sacrificial layer under the system and above the waterproof membrane.



When the Sloped Layered System is not covered with growing media and plants, decorative rock may be placed within the media retention layer. Available growth media depths are 3.5", 4.5", 6.5", and 8.5". Depths are based on available Media Retention Layer cell depths.

** Engineering and design of tendon connections and anchorage points for media retention layer are by others. Load requirements and frequency of tendon spacing will be provided by manufacture.*

Layers:

1. Media Retention Layer with Tendons:
 - Description: A three dimensional recycled polyethylene cellular confinement system / flexible geo-cell with tendons for permanent retention of growing medias on inclined roof slopes.
 - Installation: Following placement of tendon through collapsed cells (spacing of tendon as specified), expand cell across slope. Connect tendon to specified anchorage points. Place cells such that tendon runs parallel to slope. Tie sections together with approved connectors.
2. Retention Layer:
 - Description: Highly durable polyester blanket with anchorage points for promoting solid root structures
 - Installation: Do not overlap material. Install perpendicular to slope.
3. Filter Layer:
 - Description: Non-woven polypropylene
 - Installation: Overlap approximately 3" at all seams. Pre-attached to Drainage Layer
4. Drainage Layer:
 - Description: Polypropylene woven into an entangled matrix.
 - Installation: Do not overlap material. Install parallel to slope.
5. Capillary Layer:
 - Description: Recycled polyester nonwoven composite geotextile that is mechanically bonded to a layer of synthetic hydrophilic (water) absorbent matte.
 - Installation: Do not overlap material. Install perpendicular to slope.
6. Sacrificial Layer:
 - Description: 0.45" thickness membrane
 - Installation: Unroll membrane. Allow to relax. Loose laid and overlap approximately 3" at all seams.

Storage:

- Store components in a dry area.
- Store away from sources of ignition and extremely high temperatures.

Precautions:

- Avoid heat, sparks and open flames.
- Wash exposed skin prior to eating, drinking or smoking and at the end of each shift.
- Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.
- Refer to Material Safety Data Sheet for further information.

LEED Compliance:

Post Consumer Recycled Content:

- Drainage Layer 40%
- Media Retention Layer 70%
- Capillary Layer 45%

Pre Consumer Recycled Content:

- Water Retention Layer 100%
- Capillary Layer 10%

Packaging/Component Size:

Media Retention Layers			
3" Media Retention Layer:		6" Media Retention Layer	
Thickness:	3"	Thickness:	6"
Dimension:	13' x 13'	Dimension:	29'L. x 8'W.
Coverage:	170 ft ²	Coverage:	232 ft ²
Weight:	38 lbs.	Weight:	85 lbs.
Packaging:	24 sections per pallet	Packaging:	12 sections per pallet
4" Media Retention Layer:		8" Media Retention Layer	
Thickness:	4"	Thickness:	8"
Dimension:	29'L. x 8'W.	Dimension:	29'L. x 8'W.
Coverage:	232 ft ²	Coverage:	232 ft ²
Weight:	55 lbs.	Weight:	100 lbs.
Packaging:	18 sections per pallet	Packaging:	10 sections per pallet

Packaging/Component Size:

1.0 Water Retention Layer:	
Thickness:	1"
Dimension:	8'W. x 50'L.
Coverage:	400 ft ²
Weight:	12 oz./yd ² (1.33 oz./ft ²)
Packaging:	24" ± dia. roll

Filter Layer: pre-attached to drainage	
Weight:	3 oz./yd ² (0.33 oz./ft ²)

0.375 Drainage Layer	
Thickness:	0.40"
Dimension:	48"W. x 100'L.
Coverage:	400 ft ²
Weight:	17 oz./yd ² (1.88 oz./ft ²)
Packaging:	24" ± dia. roll

Capillary Layer	
Thickness:	0.165" / 165mils
Dimension:	8'W. x 150'L.
Coverage:	1200 ft ²
Weight:	18 oz./yd ² (2.11 oz./ft ²)
Packaging:	28" ± dia. roll

Media Retention Layer

A three dimensional cellular confinement system of ultrasonically welded recycled polyethylene strips which create a flexible geo-cell in which growing media is placed. Tendons (fiber, polymer, or steel) placed through the cells allow for permanent retention of growing medias on inclined roof slopes ranging from 2:12 to 6:12 max.

3" Media Retention Layer	
Property	Value
Weight	0.224 lbs./ft ²
Cell Length	10.2 in.
Cell Width	8.8 in.
Cell Area	44.9 in ²
Cell Depth	3 in.
Section Length	13 ft.
Section Width	13 ft.
Section Area	170 ft ²
Section Depth	3 in.

4" Media Retention Layer	
Property	Value
Weight	0.237 lbs./ft ²
Cell Length	12.4 in.
Cell Width	10.7 in.
Cell Area	66 in ²
Cell Depth	4 in.
Section Length	29 ft.
Section Width	8 ft.
Section Area	232 ft ²
Section Depth	4 in.

6" Media Retention Layer	
Property	Value
Weight	0.366 lbs./ft ²
Cell Length	12.4 in.
Cell Width	10.7 in.
Cell Area	66 in ²
Cell Depth	6 in.
Section Length	29 ft.
Section Width	8 ft.
Section Area	232 ft ²
Section Depth	6 in.

8" Retention Layer	
Property	Value
Weight	0.431 lbs./ft ²
Cell Length	12.4 in.
Cell Width	10.7 in.
Cell Area	66 in ²
Cell Depth	8 in.
Section Length	29 ft.
Section Width	8 ft.
Section Area	232 ft ²
Section Depth	6 in.

Capillary Layer

Composite geotextile that consists of a top 8 oz. /yd² post-consumer recycled polyester nonwoven that is mechanically bonded to a 10 oz. /yd² layer of synthetic hydrophilic (water) absorbent matte. The matte composite is inert to biological degradation and naturally encountered chemicals, alkalies, and acids.

Property	Value
Dry Weight	0.125 psf / 18 oz./yd ²
Saturated Weight	0.83 - 1.24 psf
Thickness	0.165" / 165mils
Water Holding	0.10 - 0.15 gal./ft ²
Roll Width	8 ft. / 96 in.
Roll Length	150 ft.