

BLU-GARDEN

System 1800: Agricultural Applications



SUSTAINABLU

ON STRUCTURE STORMWATER MANAGEMENT SYSTEMS

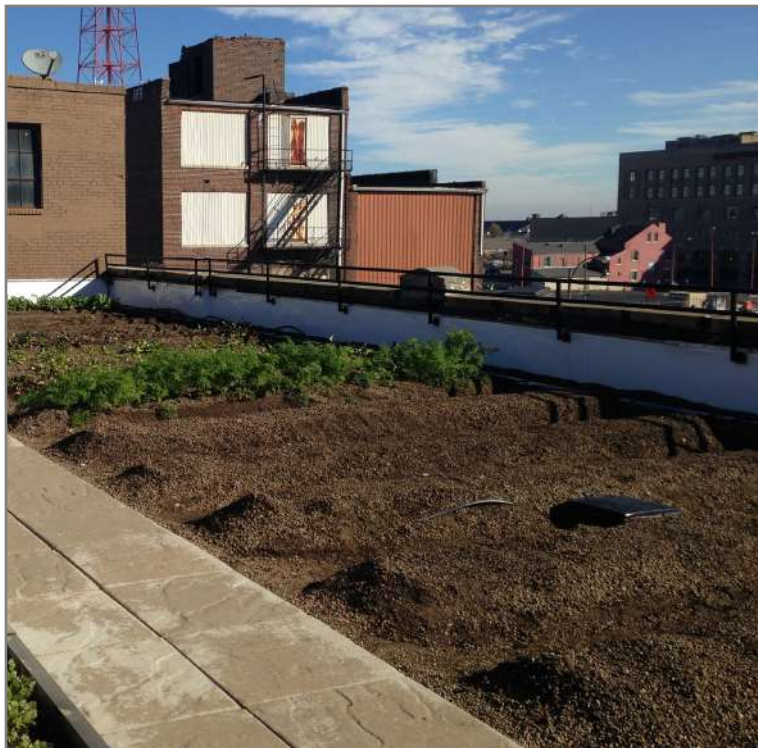


TABLE OF CONTENTS

System Assembly & Typical Details

[1800 Class] Blu-Garden Agricultural System	1800
Blu-Garden to Roof Drain Detail	1800-TP-D1
Blu-Garden to Wall Detail	1800-TP-W1

Product Data Sheets

Root Barrier Seam Tape	421-RBS-20
40 Mil HDPE Root Barrier	2421-RBR-40
Intensive Protection Fleece - 27 oz	1822-PFC-900
Standard Inspection Chamber	431-ISC-FUA
Pedestrian Paving Drainage Mat	433-DRM-10J
Intensive 2.4" Drainage/Retention Board	2434-DRB-60
Standard Filter Fleece	424-FFC-105
Structural Edge Elements	2445-EDG
Agricultural Growth Media	1863-GAG
Drainage Aggregate	465-GDA

Specifications

[07 33 63] 1800-Class Blu-Garden Roof System CSI Specification
--

Installation Guides

[PFC] Protective Fleeces	322-PFC
[PPE] SpiralJack Pedestals	311-PPE
[PPC] SpiralJack Components	312-PPC

Operations & Maintenance (O&M)

[1800-Class] Blu-Garden Maintenance Guidelines
--

Warranty

[1800-Class] Blu-Garden Materials Limited Warranty
--

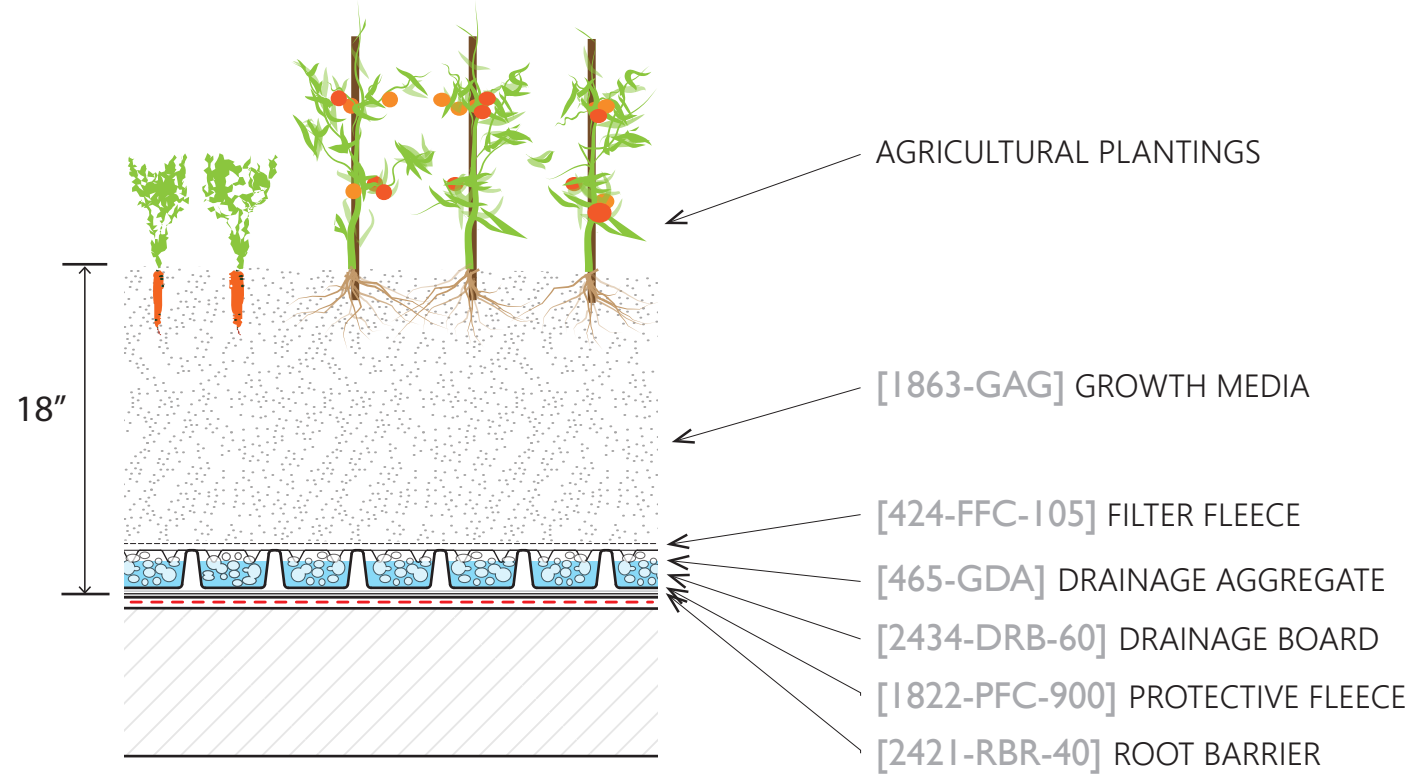
Product Pricing

[RBR] Root Barriers	421-RBR
[PFC] Protective Fleeces	1822-PFC
[ISC] Inspection Chambers / [DRM] Drainage	431-ISC / 433-DRM
[DRB] Drainage / Retention Boards	1834-DRB
[FFC] Filter Fleeces	424-FFC
[EDG] Edge Elements	1840-EDG
[GRM] TerraPor Hydrological Growth Media	1860-GRM

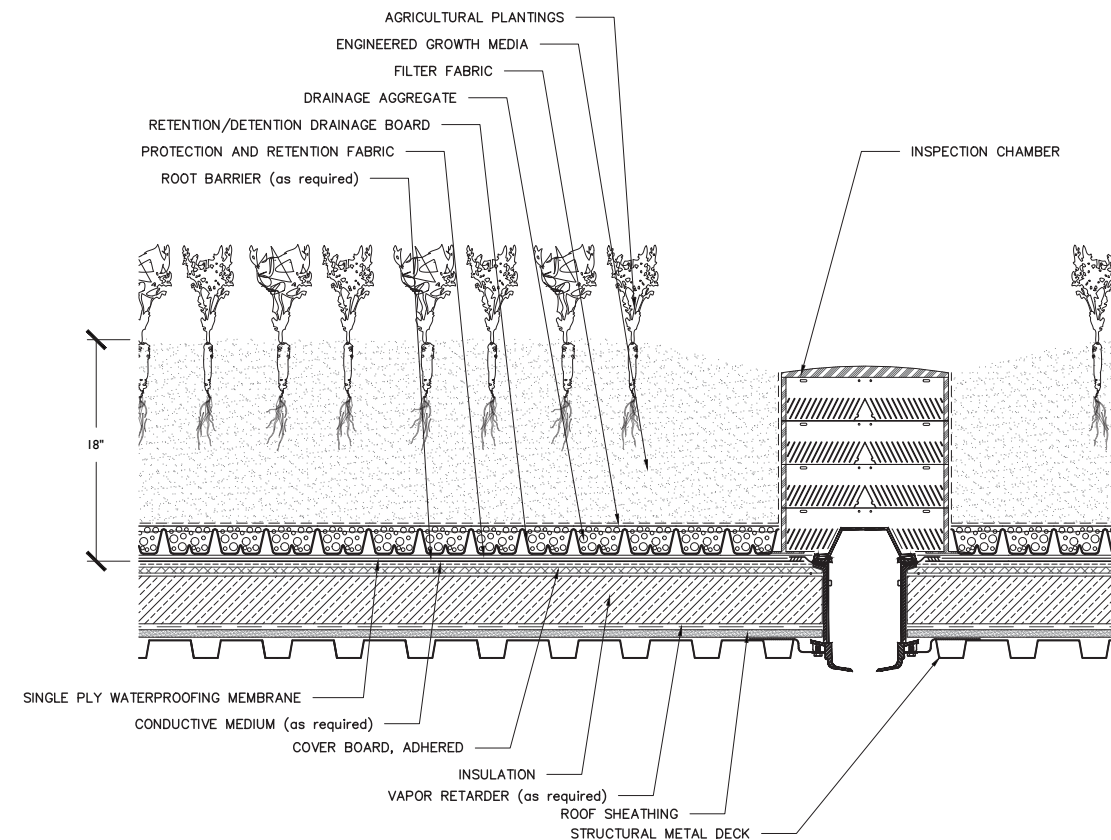
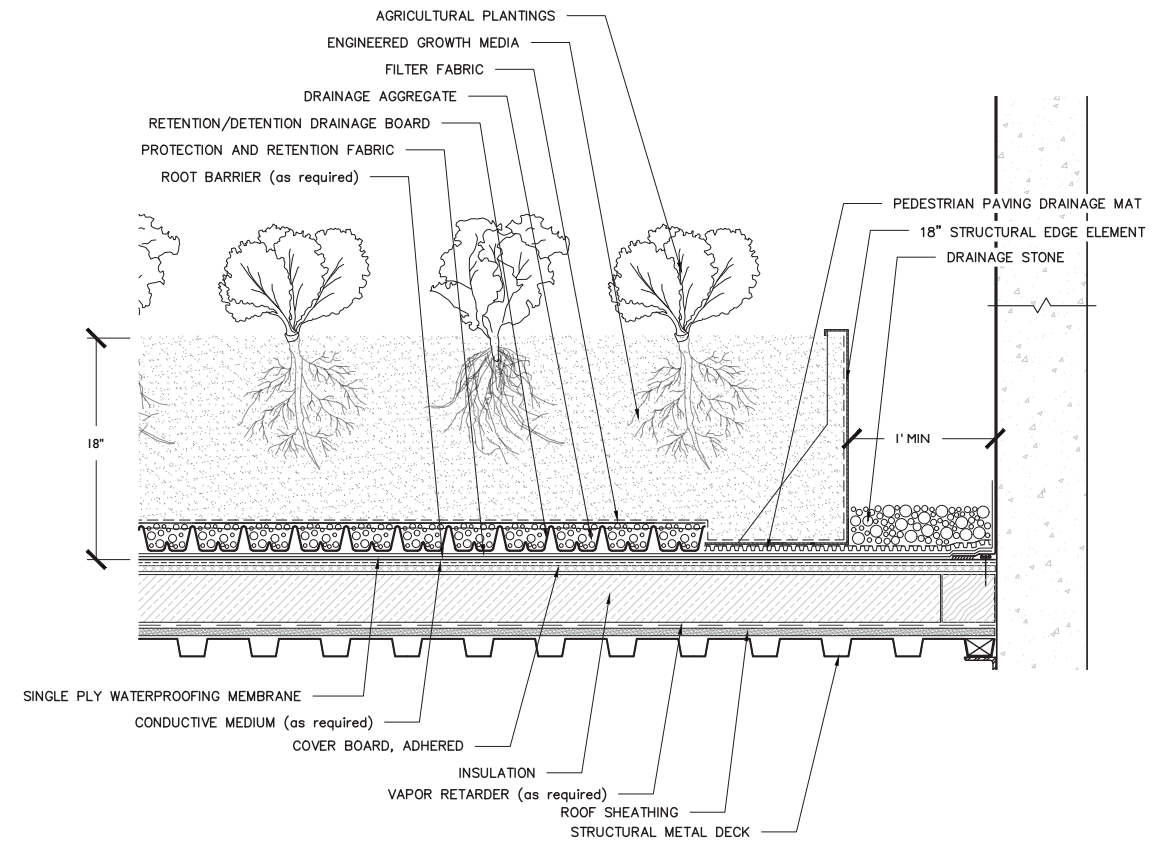
BLU-GARDEN ASSEMBLY - AGRICULTURAL

STORMWATER RETENTION
• 4.80 - 5.67 gallons / ft²

SATURATED WEIGHT
• 90 - 118 pounds / ft²



TYPICAL WALL & DRAIN DETAILS



ROOT BARRIER SEAM TAPE

Root Barrier Seam Tape is an elastomeric single-sided adhesive tape used to seal the seams of our root barriers. Specific to this product, it:

- has a black polymer backing and a very **sturdy adhesive** that is specifically formulated to provide maximum performance in a green roof environment
- has a **poly release liner** which provides ease of installation
- helps assure that aggressive roots stay where they belong
- reduces the amount of root barrier overlap required



* • Special order product

\$ • Individual Roll
• Full Carton

■ • 100 LF per Roll
• 6 Rolls per Carton (600 LF)

TECHNICAL DATA

Materials:
• Recycled LLDPE

Material Thickness:
• 0.025"

Roll Dimensions (W x L):
• 4" x 100'

Roll Weight:
• 0.15 lbs. / ft²

Tensile Strength:
• 4,500 lbs. / in²

Peel Adhesion (ASTM D 1000):
• 20 lbs. / in

Elongation:
• 700%

Vegetated Roofing Use:
• To seal seams of root barriers

Installation Requirements:
• Root barrier surface must be dry and free from dust or any substance that could interfere with the adhesion of the tape

40 MIL HDPE ROOT BARRIER

Our 40 Mil Root Barrier is a heavy duty, high density polyethylene (HDPE) sheet which is suggested for use over hot applied asphaltic, modified bitumen, cold tar pitch / built-up roofs, & EPDM Roof Membranes. Specific to this product, it:

- **directs root growth away** from waterproofing membrane, preventing it from root damage
- **withstands heavy construction traffic**
- provides **excellent protection from UV exposure** and harsh weather conditions
- features a **high tensile strength, high puncture and tear resistance**, and excellent chemical resistance
- has the strength to be able to **protect the membrane from tree roots**



* • Special order product

\$ • Individual Roll
• Full Pallet

■ • 1,017 ft² per Roll
• 12 Rolls per Pallet (12,204 ft²)



LEED Credits available for:
• Materials & Resources (MR)

TECHNICAL DATA

Materials:
• Recycled HDPE

Material Thickness (ASTM D 751):
• 0.04" (40 mils)

Roll Dimensions (W x L):
• 10.167' x 100'

Roll Weight (ASTM D 461):
• 192 lbs. / Roll (0.189 lbs. / ft²)

Tensile Strength (ASTM D 6693):
• 154 lbf / in. width

Mullen Burst (ASTM D 751):
• 220 lbs. / in²

Elongation (ASTM D 882):
• 800%

Tear Resistance (ASTM D 1004):
• 22 lbf

Hydrostatic Resistance (ASTM D 751):
• 250 lbs. / in²

Vegetated Roofing Use:
• Intensive vegetated roofs with semi-aggressive root systems

Installation Requirements:
• Overlap seams by 6"
• Tape joints with HG 3210 Seam Tape if not utilizing Leak Detection

INTENSIVE PROTECTIVE FLEECE - 27 OZ

Our Intensive Protective Fleece is designed specifically for use within Intensive green roofing systems. Specific to this product, it:

- **protects the roof membrane** and/or root barrier against damage from high mechanical demands
- **separates materials** of incompatible substrates from one another
- **stores water** & nutrients, depending on its function
- has a mass/structure and water holding capacity designed with the dead load weight and plant palettes of the Intensive roof system in mind to give the perfect **balance of water holding capacity and protection**



Protection and Storage Fleece RMS 900 by



LEED Credits available for:
• Materials & Resources (MR)



• Special order product



• Individual Roll
• Full Pallet



• 538 ft² per Roll
• 6 Rolls per Pallet (3,228 ft²)

TECHNICAL DATA

Materials:

- Polypropylene, Polyester & Recycled Acrylic Thread

Material Thickness:

- 0.24", 27 oz.

Roll Dimensions (W x L):

- 6' 6 3/4" x 82' 1/4"

Roll Diameter:

- 1' 4 1/2"

Roll Weight:

- 99 lbs.

Total Saturated Weight:

- 1.41 lbs. / ft²

Water Holding Capacity:

- 0.24 in³ / in² (0.147 gal / ft²)

Rot & Pathogen Resistant:

- Yes

Puncture Resistant:

- Yes

Vegetated Roofing Use:

- Intensive vegetative roofs

Installation Requirements:

- Overlap fabric by 6"

STANDARD INSPECTION CHAMBER

The Triangle Water Conduit System is designed for vegetative roofs requiring rapid water drainage and distribution. The Triangle Water Conduit System consists of:

- **ISC-FUA** - Standard Inspection Chamber
- **TWC-WLP** - Triangle Water Conduit Profile

Specific to this product, it:

- has **connection options** for one Triangle Water Conduit Profile on each side of the Standard Inspection Chamber
- **protects the outlets** from severe external effects
- incorporates **drainage slots on all sides** that retain growth media while allowing water to flow freely through
- is capped by an **easily removable cover** to allow access for inspection and for simple maintenance to remove any excess debris
- is also available with a **custom slotted aluminum cover**



Combi Inspection Chamber TKS Plus by



LEED Credits available for:
• Materials & Resources (MR)



- Individual Unit
- Full Carton
- Full Pallet



- 6 Units per Carton
- 16 Cartons per Pallet (96 Units)

TECHNICAL DATA

Materials:

- UV Resistant Recycled ABS Plastic

Inspection Chamber Dimensions (W x L):

- 14.5" x 14.5" (shaft)
- 18.5" x 18.5" (base)

Inspection Chamber Height:

- 4.33" minimum
- Height adjustable in 4" segments
- Maximum Height of 32"

Inspection Chamber Weight:

- 5.3 lbs. / unit

Shaft Floor Opening:

- 11 3/4"

Water Discharge Capacity (each system):

- at 0% Slope = 17.91 gallons / minute
- at 2% Slope = 19.65 gallons / minute
- at 3% Slope = 19.81 gallons / minute

*dependent on media type

Compressive Strength:

- 330 lbs.

Vegetated Roofing Use:

- Ancillary drainage component for use as a roof outlet inspection on vegetated roofs

Installation Requirements (Per 2,000 ft² area):

- (1) ISC-FUA Standard Inspection Chamber
- (30) TWC-WLP Triangle Water Conduit Profiles

PEDESTRIAN PAVING DRAINAGE MAT

Our Pedestrian Paving Drainage Mat is designed for drainage beneath accessible areas that do not need water storage and on vertical building components. Specific to this product, it:

- is a **composite drainage layer** consisting of a three-dimensional drainage core and a filter fabric
- includes a **filter fabric bonded to the core**, preventing intrusion of the overburden into the drainage channels
- **retains soil or sand particles** as well as freshly placed concrete allowing filtered water to pass through to the drainage core
- is typically used in areas necessitating a **moderate compressive strength material for drainage**, specifically for low load pedestrian accessibility for pavers, concrete or asphalt walkways, and patios



LEED Credits available for:
• Materials & Resources (MR)



• Special order product



• Individual Roll
• Full Pallet



• 200 ft² per Roll
• 7 Rolls per Pallet (1,400 ft²)

TECHNICAL DATA

Materials:

- Recycled HDPE, Polypropylene Thread

Material Thickness:

- 0.40"

Roll Dimensions (W x L):

- 4' x 50'

Roll Weight:

- 39 lbs.

Compressive Strength (ASTM D 1621):

- 15,000 lbs. / ft²

Drainage Core Flow (ASTM D 4716):

- 21 gal / min / ft

Filter Fabric Flow Rate (ASTM D 4491):

- 140 gal / min / ft²

CBR Puncture (ASTM D 6241):

- 250 lbs.

Grab Tensile (ASTM D 4632):

- 100 lbs.

Vegetated Roofing Use:

- Pedestrian compressive strength grade drainage used below pathways or vegetated areas that do not need water storage

Installation Requirements:

- Peel fabric back two dimples and overlap two rows of dimples, snap in place.
- Fold fabric back over joint.
- Cover boards with overburden immediately to protect from UV rays & wind uplift

INTENSIVE 2.4" DRAINAGE / RETENTION BOARD

Our Intensive 2.4" Drainage / Retention (DR) Board provides water storage for intensive roofs with large plant palettes. Specific to this product, it:

- is a plastic panel that **retains water within pockets** on the upper side, making water available to vegetation
- has **drill holes to drainage channels** for diffusion and irrigation
- channels surplus water through its **bottom-sided canal system** for secure drainage
- allows for the incorporation of a complete array of zone appropriate **plantings, including shrubs & trees**; in a greater than 12" depth assembly
- **transfers loads uniformly** to the substructure via large contact areas



Protection and Drainage Board FKD 60BU by

OPTIGRÜN[®]
ROOF GREENING



LEED Credits available for:
• Materials & Resources (MR)



- Individual Unit
- Full Section
- Full Pallet



- 25.28 ft² per Unit
- 30 Units per Section (758 ft²)
- 6 Sections per Pallet (4,550 ft²)

TECHNICAL DATA

Materials:

- Recycled HDPE

Material Thickness:

- 2.36"

Board Dimensions (W x L):

- 3' 3 1/2" x 7' 8 1/8"

Board Area:

- 25.28 ft²

Board Weight:

- 0.47 lbs. / ft²

Compressive Strength:

- 100.8 lbs. / in² (filled)

Water Holding Capacity:

- 0.91 in³ / in² (0.564 gal / ft²) (filled)

Drainage Performance (fully saturated):

- at 2% Slope = 15.49 in³ / ft / sec

Vegetated Roofing Use:

- High load capacity systems that harvest stormwater and cool buildings

Installation Requirements:

- Butt boards tight together
- Cover boards with overburden immediately to protect from UV rays & wind uplift

STANDARD FILTER FLEECE

Our Standard Filter Fleece is used when the drainage system needs to be protected from fine particles entering from the substrate layer. Specific to this product, it:

- acts as a separation between vegetation areas and vegetation-free zones
- **separates drainage and substrate layers** in multi-layered structures
- is designed with the perfect elasticity to **allow the fibrous root structures of extensive plant species** to penetrate it
- **enables plants to uptake water** from the drainage / retention board without deteriorating the fleece's filtration capacity



Filter Fleece FIL 105 by



- Individual Roll
- Full Pallet



- 2,153 ft² per Roll
- 11 Rolls per Pallet (23,683 ft²)

TECHNICAL DATA

Materials:

- Polypropylene Thread

Material Thickness:

- 0.04", 3 oz.

Roll Dimensions (W x L):

- 6' 6 3/4" x 328' 1"

Roll Diameter:

- 11"

Filtration Capability:

- Up to No. 140 Sieve

Total Saturated Weight:

- 0.02 lbs. / ft²

Tensile Strength (CBR Test):

- 1.08 lbs. / in²

Puncture Resistance:

- 269.7 lbs.

Rot & Pathogen Resistance:

- Yes

Vegetated Roofing Use:

- Vegetative roofs with either a drainage/retention board or dual-media system

Installation Requirements:

- Overlap seams by 6"
- Cover with growth media

STRUCTURAL EDGE ELEMENTS

Our Structural Edge Elements are designed as a definite boundary between gravel / paver and growth media, providing the structural stability for heavy traffic and wear that highly accessible intensive green roofs or roof gardens encounter. Specific to this product, it:

- is **structurally stabilized** with L-support gusset plates, reinforcing the vertical wall at regular intervals dependent on the height of the edge
- utilizes a **"smooth slide" design** to make secure, invisible connections
- has **pre-fabricated inside and outside corners** for ease of installation
- is **water retardant & weather resistant**, applicable with temperatures between -58°F up to 176°F
- is **lightweight combined with high stiffness** and dimensional stability
- has a black polyethylene core that offers **UV protection**, material stability, and **long term application outdoors**



Edge Elements by
OPTIGRÜN
ROOF GREENING



• Special order product



• System (Lengths, Clips, & Corners)



• Configuration of packaging is dependent on the size of the order. Bulk pallets of materials are available for larger jobs.



1845-ESF-18 18" Female Profile:
Dimensions (H x W x L): 18" x 16" x 48"
Weight: 2.41 lbs. / LF



1845-ESM-18 18" Male Connector:
Dimensions (H x W x L): 17.70" x 11.82" x 30"
Weight: 2.97 lbs. / LF



1845-ES9-18 18" Male Corner:
Dimensions (H x W x L): 17.70" x 12" x 12"
Weight: 2.23 lbs. / LF

TECHNICAL DATA

System Type:

- Monolithic / Contiguous / Modular

Materials:

- 0.3 mm Aluminum surface layers (both sides)
- Polyethylene core

Material Thickness:

- 3 mm

Roof / Deck Slope Constraint:

- Up to 5° slope or 1:12 roof pitch

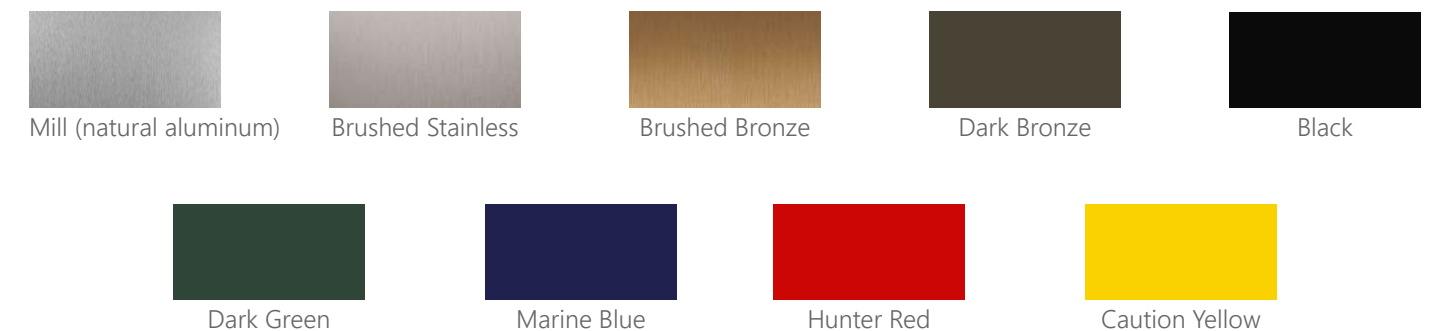
Vegetated Roofing Use:

- High traffic intensive vegetated roofs / plaza decks

Installation Requirements:

- Lay edge profile sections end to end on top of drainage mat, with foot of restraint toward vegetative portion of roof
- Slide Male Clips into Female Lengths
- Connect all components as shown on edging plan

Material Finishes:




*Structural Aluminum Edge profiles are also available in 15" & 24" heights.


TERRAPOR AG - AGRICULTURAL GROWTH MEDIA


Our Agricultural Blend is mixed for vegetated roofs with numerous varieties of crop palettes. We custom blend per a project's crop palette. Agricultural Blend growth media offers many advantages:

- a precisely blended growth media designed for agricultural green roof systems with a **media depth of 6-18 inches**
- designed to be **lightweight**, Agricultural Blend growth media uses porous materials designed to **retain maximum amounts of water** while simultaneously **promoting drainage**
- optimized for farming and the production of **agricultural crops**
- blended to strict **FLL-compliant** guidelines



 • Special order product

 • 1 ft³ Bag
• 2 yd³ Supersack
• Bulk

 • 1 ft³ Bag
• 2 yd³ Supersack
• Bulk



LEED Credits available for:
• Materials & Resources (MR)

QUICK REFERENCE & SHIPPING DATA

Vegetated Roofing Use:

- Standard agricultural vegetated roofs

Coverage (1 yd³):

- at 9" = 36 ft²
- at 12" = 27 ft²
- at 18" = 18 ft²

Dry Weight (approximate):

- 43 lbs. / ft³

Saturated Weight (approximate):

- 74 lbs. / ft³
 - at 9" = 55.5 lbs. / ft²
 - at 12" = 74.0 lbs. / ft²
 - at 18" = 111.0 lbs. / ft²

Bulk Shipping Data:

- Bulk material weighs approximately 1,425 lbs. / yd³
- 32 - 34 yd³ in dump trailer, 22 - 24 yd³ in a tri-axle

2 yd³ Super Sacks:

- 2 yd³ Super Sacks weigh approximately 2,850 lbs.
- 15 - 16 2 yd³ Super Sacks / flatbed trailer

1 ft³ Bags:

- 1 ft³ Bag weighs approximately 52.4 lbs.
- 60 Bags / pallet
- 14 - 15 pallets / flatbed trailer

TECHNICAL DATA

*Third party growth media analysis & testing completed by an authorized FLL Laboratory.

<u>Grain Size Distribution:</u>	<u>mm</u>	<u>Inches</u>	<u>% of Dry Weight</u>
Passing 1/2" Sieve	12.50	0.50	100
Passing 3/8" Sieve	9.53	0.375	80 - 100
Passing 1/8" Sieve	3.18	0.125	50 - 85
Passing #18 Sieve	1.00	0.039	30 - 55
Passing #60 Sieve	0.25	0.010	20 - 35
Passing #230 Sieve	0.06	0.002	10 - 25
Silt & Clay Fraction	< 0.06	< 0.002	< 10
<u>Density:</u>	<u>g / cm³</u>	<u>lbs. / ft³</u>	
Application Density	0.61 - 0.78	38 - 49	
Saturated Density	1.01 - 1.25	63 - 78	
Dry Media			<u>% of Total Weight</u>
			31 - 62
<u>Water & Air Management:</u>	<u>% by Volume</u>	<u>in³ / ft³</u>	
Saturated Water Capacity	40 - 70	690 - 1205	
Saturated Air Capacity	> 10	> 173	
	<u>cm / hour</u>	<u>inches / hour</u>	
Saturated Hydraulic Conductivity	> 5.0	> 1.7	
<u>pH, Lime, & Salt Content:</u>	<u>units</u>	<u>% as CaCO₃</u>	<u>mmhos / cm</u>
pH (saturated paste)	6.0 - 7.5	-	-
Carbonate Content	-	< 2.5	-
Electrical Conductivity	-	-	< 2.5
<u>Organics:</u>	<u>% of Dry Weight</u>		
Organic Matter	8.0 - 10.0		
C/N Ratio	< 25:1		
<u>Nutrients:</u>	<u>mg / l Saturated Extract</u>	<u>lbs. / 1,000 ft³</u>	<u>FLL Parameters lbs. / 1,000 ft³</u>
Nitrogen (NO ₃ + NH ₄ as N)	351 - 417	12 - 14	3 - 15
Phosphorous (as P ₂ O ₅)	135 - 189	6 - 7	1 - 7
Potassium (K ₂ O)	324 - 340	14 - 15	6 - 15
Calcium (Ca)	702 - 1134	27 - 44	19 - 65
Magnesium (Mg)	162 - 216	6 - 9	3 - 15
Sulfur (as SO ₄ -S)	81 - 97	3.0 - 3.5	1 - 3.5
Copper (Cu)	7 - 14	0.25 - 0.50	0.25 - 0.50
Zinc (Zn)	0.28 - 0.83	0.01 - 0.03	0.01 - 0.03
Iron (Fe)	27 - 54	1 - 2.5	1 - 3
Manganese (Mn)	27 - 81	1 - 3	1 - 3
Boron (Water Soluble B)	7 - 14	0.25 - 0.50	0.25 - 0.50
<u>Cation Exchange Capacity:</u>	<u>meg / 100g dw</u>		
CE _{cap}	> 6		

TERRAPOR DR - DRAINAGE AGGREGATE

Our Drainage Aggregate is a granular drainage medium specifically designed for use as a filler substrate beneath our multi-layer green roof systems. We provide extensive, semi-intensive, & intensive blends of our Drainage Aggregate. Drainage Aggregate offers many advantages:

- most commonly used as a **pressure-resistant fill** within drainage boards
- an **excellent bedding material** for pavers as a maintenance path or patio
- **embedded drainage channels** may be used to transfer excess water quickly to roof drains or scuppers



LEED Credits available for:

- Materials & Resources (MR)



- 1 ft³ Bag
- 2 yd³ Supersack
- Bulk



- 1 ft³ Bag
- 2 yd³ Supersack
- Bulk

QUICK REFERENCE & SHIPPING DATA

Vegetated Roofing Use:

- Granular drainage layer

Coverage (1 yd³):

- at 3" = 108 ft²
- at 4" = 81 ft²
- at 6" = 54 ft²

Dry Weight (approximate):

- 40 lbs. / ft³

Saturated Weight (approximate):

- 52 lbs. / ft³
 - at 3" = 14.0 lbs. / ft²
 - at 4" = 17.33 lbs. / ft²
 - at 6" = 26.0 lbs. / ft²

Bulk Shipping Data:

- Bulk material weighs approximately 1,080 lbs. / yd³
- 32 - 34 yd³ in dump trailer, 22 - 24 yd³ in a tri-axle

2 yd³ Super Sacks:

- 2 yd³ Super Sacks weigh approximately 2,160 lbs.
- 15 - 16 2 yd³ Super Sacks / flatbed trailer

1.5 yd³ Super Sacks:

- 1.5 yd³ Super Sacks weigh approximately 1,620 lbs.
- 21 - 22 1.5 yd³ Super Sacks / flatbed trailer

1 ft³ Bags:

- 1 ft³ Bag weighs approximately 40.0 lbs.
- 60 Bags / pallet
- 14 - 15 pallets / flatbed trailer

TECHNICAL DATA

Grain Size Distribution:

	mm	Inches	% of Dry Weight
Passing 1/2" Sieve	12.50	0.50	95 - 100
Passing 3/8" Sieve	9.53	0.375	75 - 90
Passing 1/4" Sieve	6.35	0.25	30 - 45
Passing 1/8" Sieve	3.18	0.125	10 - 25
Passing #18 Sieve	1.00	0.039	0 - 15
Passing #60 Sieve	0.25	0.010	0 - 10
Passing #230 Sieve	0.06	0.002	0 - 5

Density:

	g / cm ³	lbs. / ft ³
Application Density	0.55 - 0.72	35 - 45
Saturated Density	0.70 - 0.95	44 - 60

Water & Air Management:

	% by Volume	in ³ / ft ³
Saturated Water Capacity	15 - 25	260 - 432
Saturated Air Capacity	35 - 45	605 - 778

Pore Volume:

	% by Volume
Total	50 - 75

pH, Lime, & Salt Content:

	units	% as CaCO ₃	mmhos / cm
pH (in CaCl ₂)	6.0 - 8.5	-	-
Carbonate Content	-	< 2.5	-
Electrical Conductivity	-	-	< 2.5

[RBR] ROOT BARRIERS

Product #	Product Description	Suggested Market Price
421-RBS-20*	Root Barrier Seam Tape Size Available: 4" x 100' (33.3 SF/Roll) 6 Rolls/Carton	Individual Roll Price \$114.10/Roll Full Carton Price \$109.44/Roll
2421-RBR-40*	40 Mil HDPE Root Barrier Size Available: 10.17' x 100' (1,017 SF/Roll) 12 Rolls/Pallet	Individual Roll Price \$0.89/SF Full Pallet Price \$0.79/SF

FULL LOAD PRICING AVAILABLE FOR DISTRIBUTORS AND LARGE PROJECT CUSTOMERS



Seam Tape



40 Mil
Root Barrier

* ALL ROOT BARRIERS ARE SPECIAL ORDER ITEMS - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 1-2 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.

[PFC] PROTECTIVE FLEECES

Product #	Product Description	Suggested Market Price
1822-PFC-900*	Intensive Protective Fleece - 27 oz Size Available: 6'-6 3/4" x 82'-1/4" (538 SF/Roll) 6 Rolls/Pallet	Individual Roll Price Full Pallet Price
		\$0.39/SF \$0.37/SF

FULL LOAD PRICING AVAILABLE FOR DISTRIBUTORS AND LARGE PROJECT CUSTOMERS



Intensive Protective Fleece

* DENOTES SPECIAL ORDER ITEM - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 6-9 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.

[ISC] INSPECTION CHAMBERS / [DRM] DRAINAGE

Product #	Product Description		Suggested Market Price
433-DRM-10J*	Pedestrian Paving Drainage Mat Size Available: 4' x 50' (200 SF/Roll) 7 Rolls/Pallet	Individual Roll Price Full Pallet Price	\$0.75/SF \$0.68/SF
431-ISC-FUA	Standard Inspection Chamber Size Available: 14-1/2" x 14-1/2" x 4" 6 Drainboxes/Carton 16 Cartons/Pallet	Individual Unit Price Full Carton Price Full Pallet Price	\$105.36EA \$81.94/EA \$73.75/EA
431-ISC-SID	Standard Inspection Chamber Extenders Size Available: 4" Extender 22 4" Extenders/Carton 12 Cartons/Pallet	Individual Unit Price Full Carton Price Full Pallet Price	\$43.03/EA \$33.47/EA \$30.12/EA

FULL LOAD PRICING AVAILABLE FOR DISTRIBUTORS AND LARGE PROJECT CUSTOMERS



Pedestrian Paving
Drainage Mat



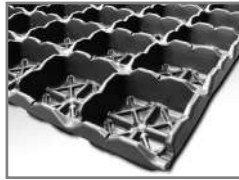
Standard Inspection
Chamber and
Accessories

* DENOTES A SPECIAL ORDER ITEM - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 6-9 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.

[DRB] DRAINAGE / RETENTION BOARDS

Product #	Product Description	Suggested Market Price
2434-DRB-60	Intensive 2.4" Drainage / Retention Board Size Available: 7'-8 1/8" x 3' 3-1/2" x 2.4" 30 Boards/Section 6 Sections/Pallet	Individual Unit Price \$2.48/SF Full Section Price \$2.17/SF Full Pallet Price \$1.79/SF

FULL LOAD PRICING AVAILABLE FOR DISTRIBUTORS AND LARGE PROJECT CUSTOMERS



Intensive 2.4"
DR Board

* DENOTES A SPECIAL ORDER ITEM - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 6-9 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.

[FFC] FILTER FLEECES

Product #	Product Description	Suggested Market Price
424-FFC-105	Standard Filter Fleece Size Available: 6'-6 3/4" x 328' 1" (2,153 SF/Roll) 11 Rolls/Pallet	Individual Roll Price Full Pallet Price
		\$0.15/SF \$0.13/SF

FULL LOAD PRICING AVAILABLE FOR DISTRIBUTORS AND LARGE PROJECT CUSTOMERS



Standard Filter Fleece

* DENOTES A SPECIAL ORDER ITEM - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 6-9 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.

[EDG] EDGE ELEMENTS

Product #	Product Description	Suggested Market Price
2445-EDG*	Structural Edge Elements (AVAILABLE IN RAL COLORS) Size Available: 15" Lengths, Clips & Corners 18" Lengths, Clips & Corners 24" Lengths, Clips & Corners	System Price \$63.17/LF System Price \$72.51/LF System Price \$96.27/EA

FULL LOAD PRICING AVAILABLE FOR DISTRIBUTORS AND LARGE PROJECT CUSTOMERS



Structural Edge Elements

* DENOTES A SPECIAL ORDER ITEM - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 6-9 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.

[GRM] TERRAPOR HYDROLOGICAL GROWTH MEDIA

Product #	Product Description	East Coast Suggested Market Price	Midwest/South Suggested Market Price	Northwest Suggested Market Price
1863-GAG	TerraPor AG - Agricultural Size Available: 1 Cubic Foot Bags 2 CY Supersacks Bulk	\$212.45/CY \$129.94/CY \$99.81/CY	N/A \$103.57/CY \$81.11/CY	N/A \$109.76/CY \$81.09/CY
1863-GAL	TerraPor AGL - UltraLite Agricultural Size Available: 1 Cubic Foot Bags 2 CY Supersacks Bulk	\$242.23/CY \$159.72/CY \$129.59/CY	N/A \$131.28/CY \$108.82/CY	N/A \$138.17/CY \$109.50/CY
465-GDA	TerraPor DR - Drainage Aggregate Size Available: 1 Cubic Foot Bags 2 CY Supersacks Bulk	\$239.82/CY \$151.17/CY \$119.91/CY	N/A \$129.51/CY \$109.27/CY	N/A \$115.47/CY \$89.57/CY



- EAST COAST INCLUDES: ME, NH, VT, MA, CT, NY, NJ, PA, DE, MD, DC, VA & NC
- MW/SOUTH INCLUDES: OH, KY, TN, GA, MI, IN, AL, WI, IL, MS, MN, IA, MO, AR, LA, ND, SD, NE, KS, OK, TX & CO
- NORTHWEST INCLUDES: ID, WA, OR & CA

PROVIDE 2-3 WEEKS FOR DELIVERY FROM PURCHASE ORDER DATE. PRICE DOES NOT INCLUDE \$15/PALLET PER 2 CY SUPERSACK

* DENOTES A SPECIAL ORDER ITEM - DOWNPAYMENTS REQUIRED ON ALL SPECIAL ORDER ITEMS - PROVIDE 2-3 WEEKS FOR DELIVERY FROM DOWNPAYMENT DATE.



SUSTAINABLU focuses on design integration, project delivery, and products for on-structure stormwater management and green infrastructure. Capabilities range from amenity decks, green roofs, blue roofs, solar roofs and smart leak detection systems, providing the most complete line for effective On-Structure Stormwater Management systems and products available.

With on-staff designers and a network of landscape architects, contractors, architects, engineers, and developers, SUSTAINABLU is the common thread from idea conception to completion. The company provides products from top vendors around the world, tailoring products to each unique design. Product lines offered include paver pedestal, concrete roof pavers, wood deck tiles, procelain tiles, green roofing solutions, smart drains and leak detection systems, with SUSTAINABLU bringing them together with total system warranties supported by numerous roofing manufacturers.

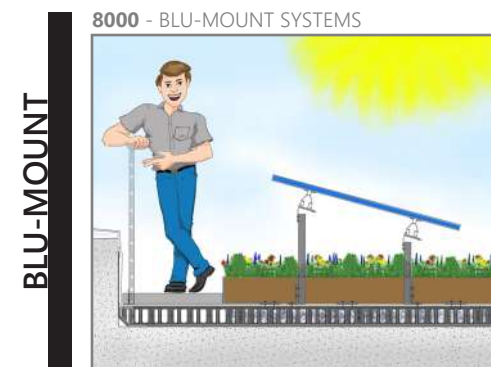
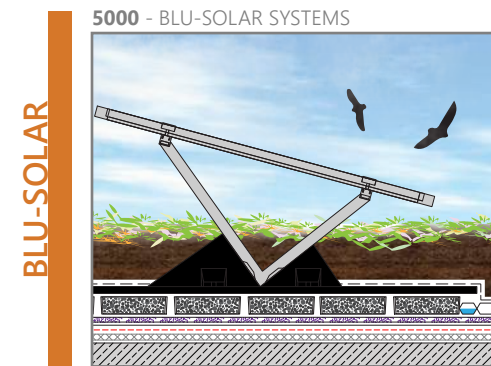
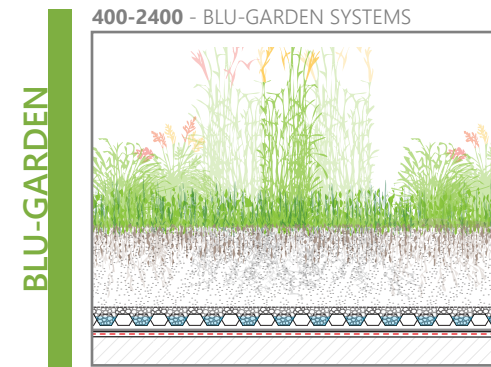
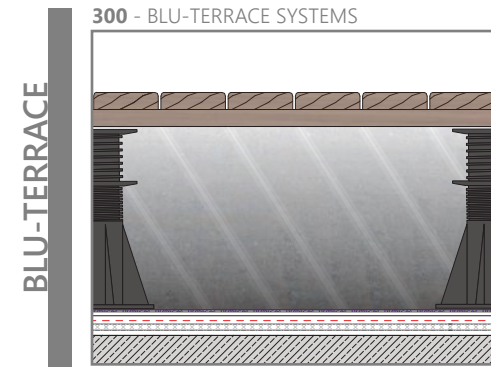
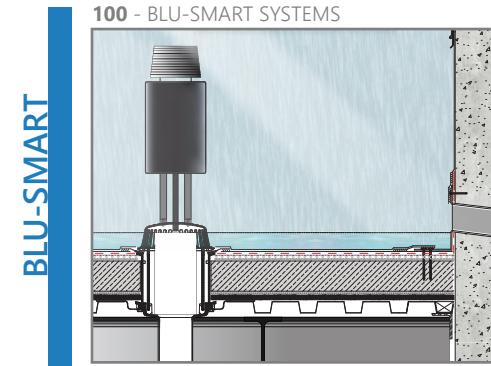
SUSTAINABLU has completed projects in cities across North America and has representation and warehouses throughout the United States.

SUSTAINABLU
800.333.5406

www.SUSTAINABLU.us

Design Integration
technical@SUSTAINABLU.us

Product / Sale Inquiries
sales@SUSTAINABLU.us





INSTALLATION GUIDELINES

- 1** Ensure all roof surfaces are free of dirt, debris and incompatible materials.



- 2** To prevent root damage to the waterproofing membrane, roll out root barrier over the entire green roof area, extending beyond green roof extents a minimum of 12" in all directions.

Install root barrier with a minimum of 12" side and end overlaps.

Turn up root barrier a minimum of 4" above finish elevation line at all vertical perimeters and projections and temporarily hold in place with seam tape.

Tape all seams with seam tape.



- 3** To protect the waterproofing membrane, roll out protection fleece over the entire roof surface.

Install protection fleece with a minimum of 4" side and 12" end overlaps.

Turn up protection fleece a minimum of 4" above finish elevation line at all vertical perimeters and projections.

Wet fabric as necessary to provide short-term ballast. For long-term ballast, use sandbags or paver slabs. Never cut near the roofing membrane for installation. Only cut fabric using industrial shears, and never with a utility knife.



INSTALLATION GUIDELINES

- 4** To separate green roof areas from hardscaping/aggregate areas without restricting roof drainage, install edge elements according to drawings.

Place edge element sections, connectors, and corners end to end on top of protection fleece, with foot of edge element toward vegetative portion of roof.

Slide connectors and corner components into edge profiles.



- 5** Install drainage boards on top of protection fleece (and on top of edge element foot, if applicable) at green roof areas starting at roof drains and working towards higher elevations.

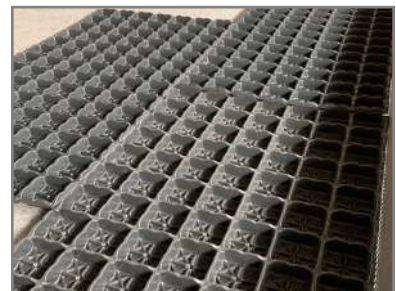
Small corrugation peak must be facing upwards (FKD 40 must be visible from above).

Overlap drainage boards a minimum of 1-2 corrugations on both sides and ends.

If necessary, cut drainage boards with a circular saw for efficient use of material and to ensure crisp edges upon cutting. Always cut along valley between corrugations. Never use a utility knife or cut near the roof surface.

At roof drains, cut out the inside dimension of the inspection chamber in order to ensure optimum water discharge into the roof drain.

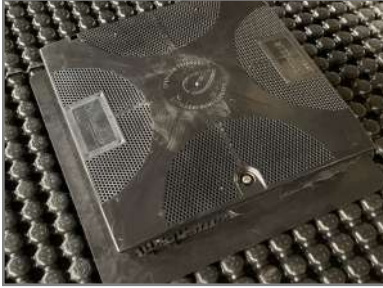
Drainage boards should be filled with overburden immediately after installation to protect from UV rays and wind uplift.



INSTALLATION GUIDELINES

- 6** If drainage board is installed adjacent to roof drains, inspection chamber is to be placed directly on top of drainage board.
If a drainage/ballast stone is to be installed, inspection chamber should be placed directly on the protection fleece, with the drainage/ballast stone abutting the outside walls.

For inverted roof assemblies, inspection chambers are placed on the thermal insulation. A separation ring is then installed and filled with gravel, thus forming the gravel strip surrounding the inspection chamber.



- 7** To separate drainage from substrate layers, roll out filter fleece on top of drainage aggregate.
Install filter fleece with a minimum of 4" side and 12" end overlaps.

Turn up filter fleece a minimum of 4" above finish elevation line at all vertical perimeters and projections.

Wet fabric as necessary to provide short-term ballast. For long-term ballast, use sandbags or paver slabs. Never cut near the roofing membrane for installation. Only cut fabric using industrial shears, and never with a utility knife.



- 8** Spread growth media to depths specified with no more than 1/2" variation.
Growth media is to be placed carefully to avoid damage or displacement of other materials such as edge elements, filter fleece and drainage components.

Only use flat-edge plastic shovels and landscaping rakes for placement, movement, and leveling of growth media. All other tools must be approved by manufacturer for use.

Ensure that growth media does not get under the filter fleece, between filter fleece overlap, or into the drainage board cups. If this does occur, use a portable shop vacuum to make sure the debris is removed and placed appropriately.



INSTALLATION GUIDELINES

- 9** Thoroughly wet growth media and overlay pre-vegetated mats, making sure mats are tight together and maintaining good overall contact with growth media layer.

Pre-vegetated mats should be installed immediately after delivery, ideally on the same day. If that is not possible, they need to be unrolled and stored flat.

After all mats have been installed, thoroughly water entire roof.



- 10** Thoroughly wet growth media and distribute sedum cuttings throughout green roof area according to drawings and specified distribution rate. Unless otherwise noted, the recommended distribution rate shall be 12 lbs/100 SF.

Apply when temperature is between 35° F (2°C) and 89° F (32°C).

If more than 24 hours has elapsed since installing and soaking the growth media, thoroughly re-soak growth media prior to commencing the broadcast distribution of sedum cuttings.



- 11** Set plugs into growth media to their full depth and then press the growth media firmly around the installed plug according to approved landscape design.

If more than 24 hours has elapsed since installing and soaking the growth media, thoroughly re-soak growth media prior to commencing the planting of plugs.

If an erosion/wind netting is required, make cuts in the erosion/wind netting as required to insert the plugs.

At the end of each day of planting, soak those areas that have been newly planted.

