SUSTAINABLE
SOLUTIONS

SITEDRAIN™ VRA SERIES

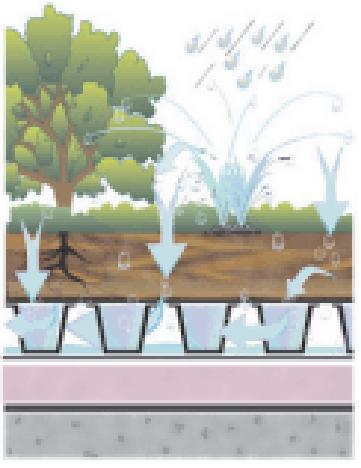
PREFABRICATED DRAINAGE SOLUTIONS

AWD
AMERICAN WICK DRAIN

VEGETATIVE ROOFS & PLANTERS

awd-usa.com

How Vegetative Roof Systems Work



Rain or Sprinkler

Growing Medium

Root Barrier Fabric
Drain Core
Fabric Protection Layer
Insulation Layer
Roof Membrane
Structural Support

Water from rain or irrigation systems enters the growing medium. Excess water flows from the growing medium through a filter fabric into the drain core.

The root barrier fabric is designed to act as a physical barrier to prevent or minimize root penetration by vegetation with low-to-moderately aggressive root structures. The root barrier fabric also acts as a separation layer to prevent or minimize growing medium from entering the core.

Excess water from the growing medium fills the water storage cones in the drainage core. This water is held until it is reabsorbed into the growing medium as needed. Excess water flows through holes in the upper surface of the core and is carried to the drainage outlets. The optimal water content is maintained in the growing medium to promote strong vegetation growth while eliminating root rot due to excess water.

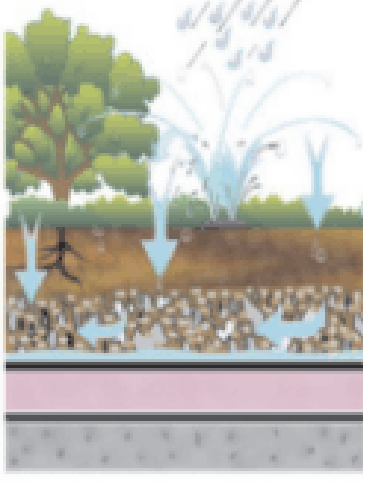
The open drainage channels in the core provide aeration to the roots of the vegetation. A fabric protection layer is provided on the bottom side of the drain core on AWD vegetative roof assembly (VRA) products to prevent or minimize dimples from impeding into softer layers below, such as insulation or softer waterproofing membranes.

AWD SITEDRAIN VRA products provide elements for root penetration protection, drainage, aeration, water storage, and membrane protection in a lightweight, easy to install, long lasting, and cost-effective package.

SITEDRAIN VRA vs. Sand & Gravel

AWD SITEDRAIN VRA Series products have three distinct advantages over sand and gravel:

Weight	SITEDRAIN VRA Series products, available in 0.4" and 1" thickness, weigh less than 8 oz/sf vs. over 30 lbs/sf for a 3"-thick layer of drainage aggregate.
Water Storage	The plastic cones of the prefabricated core provide positive water storage reservoirs. Very little water is stored in a drainage aggregate layer.
Aeration	The open channels in the prefabricated drain core provide air to the plant roots.



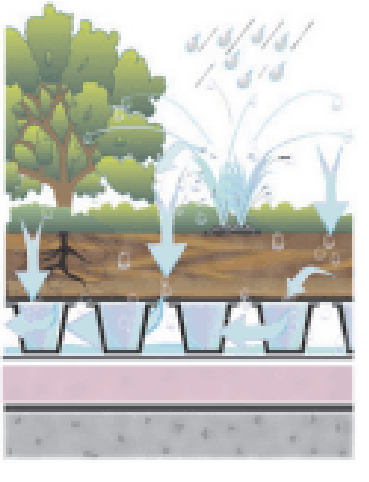
Rain or Sprinkler

Growing Medium

Sand and Gravel

Root Barrier Fabric
Insulation
Roof Membrane

Structural Support



Rain or Sprinkler

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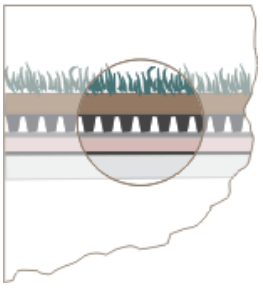
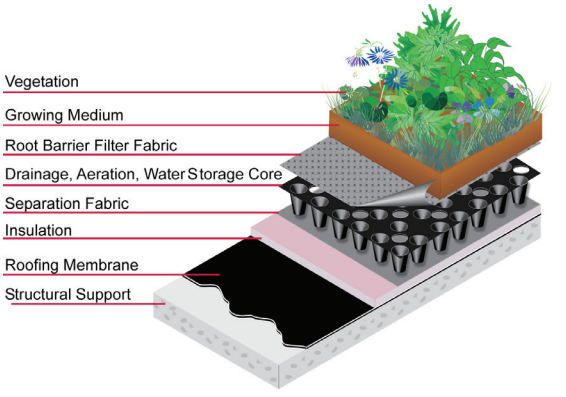


SITEDRAIN™ VRA SERIES

VEGETATIVE ROOF ASSEMBLY

SITEDRAIN VRA products are a key component to a complete vegetative roof assembly system, allowing many flat or gently sloping roofs to be transformed into a beautiful, green paradise. Once barren, vacant, ecologically poor areas can be turned into an esthetically pleasing, ecologically sound, above ground space on new or existing structures.



With the increased emphasis by many Federal, State, and local agencies on "green" initiatives, the sharp increase in number and size of vegetative roofs in recent years has been a natural progression.

Modern vegetative roof assemblies build on centuries of experience. Mankind's earliest structures had sod roofs. New materials provide advances in drainage, aeration, and root barriers to make vegetative roofs a practical and attractive alternative to bare roofs. Vegetative roofs typically utilize < 12"-thick drainage layers comprised of lightweight, low organic content growing medium.

VEGETATIVE ROOF BENEFITS

- Uses recycled components
- Prolongs roof life
- Provides storm water management
- Reduced noise pollution
- Traps airborne dust and dirt
- Converts carbon dioxide into oxygen
- Increases property values
- Provides aesthetic & therapeutic benefits
- Lowers thermal loads on building
- Reduced water runoff
- Stores rainwater for subsequent use
- Eligible for LEED™ Credit Contribution

SITEDRAIN VRA 50 & 100 products provide a physical root barrier to prevent or minimize root penetration by plants with low-to-moderately aggressive root structures.

An additional root barrier layer may be used in conjunction with SITEDRAIN VRA 50 & 100 products to prevent or minimize root penetration by plants with moderate-to-highly aggressive root structures.

SUSTAINABLE SOLUTIONS

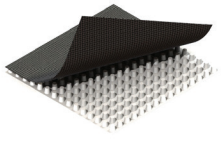
SITEDRAIN MODEL	VRA 50	VRA 100
Root Barrier Filter Fabric	Spunbonded Nonwoven	
Maximum Flow Capacity	18 gpm	80 gpm
Aeration Layer	0.4"	1"
Water Storage	0.05 g/ft^2	0.08 g/ft^2
Protection Fabric	Needle-Punched Nonwoven	
Recycled Content	>65%	>70%
Roll Size	4' x 50"	3' x 50'

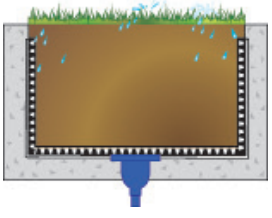
SITEDRAIN™

PREFABRICATED DRAINS FOR PLANTERS

Root rot from excess water is a common cause of dead plants in commercial planter applications. Commercial planters are typically >12" deep and use higher organic content soil that can retain large amounts of water making it necessary to create positive drainage. Planters are restricted containers that typically have one exit point which is located at the bottom of the container. When plants are placed in restricted containers, over time fine soil particles within the organic soil accumulates a layer of sediment that can clog the exit drain at the bottom of the container allowing excess water to saturate the existing roots.

Prefabricated drains for commercial planters are constructed with a formed polymeric core with a filter fabric bonded to one side. The fabric is securely bonded to each dimple which minimizes soil intrusion into the water flow channel. SITEDRAIN prefabricated planter drains provide superior drainage, minimize root rot caused by oversaturated soils, and extend the structural life of the planter. SITEDRAIN products can also contribute to LEED design credits in categories such as stormwater management and use of materials with recycled content.





SITEDRAIN Sheet 184-T uses a spunbonded nonwoven filter fabric to provide excellent filtration of fine soil particles and is recommended for the vast majority of planter box applications.

SITEDRAIN Sheet 186-W is constructed using a woven monofilament filter fabric that provides outstanding filtration in planter box applications with high organic content soils.

PLANTER DRAINS	SITEDRAIN Sheet 184-T	SITEDRAIN Sheet 186-W
Water Filtration Layer	Spunbonded Nonwoven	Woven Monofilament
Drainage Flow Capacity	21 gpm	21 gpm
Compressive Strength	18,000 psf	18,000 psf
Recycled Content	>75%	>70%
Roll Size	4' x 50'	4' x 50'

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