Advanced Vegetative Roof System

The new standard in green roofing technology

Sustainable Roofing Solutions

WWW.MALARKEYROOFING.COM
Green roof technology is not new. In Europe, green roofs have been applied successfully for more than 20 years but only recently introduced in North America. Because of their many energy-saving and environmental benefits, green roofs are a promising technology for energy-efficient buildings:

- Green roofs significantly contribute to energy and water saving goals.
- By shadowing the surfaces of a roof, they reduce heat gain through it by nearly 100%.
- In addition, a green roof’s soil and vegetation layer absorbs and filters rain, preventing it from quickly becoming runoff from the roof’s surface.
- Green roof technology is an effective, practical way to increase the energy performance of buildings and limit storm water runoff.*

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Benefits of the AVRS® Solution

EASY ASSEMBLY

AVRS® quick lock fasteners enable easy assembly and removal for roof maintenance.

AVRS® TRAYS

Durable, recycled, 100-mil-high, molecular weight polypropylene ensures a strong, long-lasting green roof system.

HARDY PLANTS

AVRS® utilizes a wide variety of weather resistant succulents to ensure healthy, attractive growth with low maintenance.

WATER RETENTIVE SOIL

Zeba®, a starch-based super-absorbent additive, is pre-blended into the soil with every AVRS® system. This high performance combination retains water and provides nutrients to succulents during dry conditions.

FULLY INTEGRATED BUILDING SYSTEM

This patent pending AVRS® green roof system is a fully interlocking, tray-to-tray assembly and integrates with the building system to prevent movement and wind damage. The system has been exposed to high winds with no failures.

LIGHTWEIGHT

The AVRS® solution includes a regionally-specific, lightweight, engineered growing medium.

BUILT-IN RESERVOIRS

Water retention troughs in AVRS® trays store rainwater and release excess moisture.

ROOT BARRIER

AVRS® incorporates a built-in root barrier to confine roots and plants to the tray.

GROWTH MEDIA – SOIL

The growth media consists of a regionally-specific, engineered, lightweight blend of inorganic and organic components. The AVRS® soil mix includes Zeba™, a unique super-absorbent polymer based on natural cornstarch, making it biodegradable, nontoxic, and odorless.

IRRIGATION

The AVRS® solution has an integrated drip watering system. AVRS® trays have an irrigation slot that allows the drip line to pass from tray to tray. The drip line is installed prior to the growing medium installation.

INSTALLATION

As mentioned, AVRS® is only installed by Malarkey-approved and certified roofing contractors. AVRS® installations are generally scheduled between April 1 and November 1, and not when the weather is below 35°F or above 95°F.

MAINTENANCE

Initial maintenance includes watering, spot weeding and application of fertilizers (if necessary) until a uniform stand is achieved. Periodic watering of the plant media is highly recommended for the first year to ensure proper root development. Watering cycles should be determined on an as-needed basis. The AVRS® applicator can assist with this process for an additional fee.

Inside the AVRS® Solution

SCOPE

Malarkey’s AVRS® green roof system is designed to be a turn-key solution that is easily installed and maintained. This patent pending system provides a green roof solution that can integrate with multiple roofing materials and deliver long-term, economical performance. Malarkey combines all materials to complete a successful installation of the AVRS® green roof system.

AVRS® TRAYS

AVRS® trays are manufactured from 100% recycled, 100-mil-high, molecular weight polypropylene. Each tray utilizes an engineered overlapping edge and removable vinyl rivets to securely join the trays – creating an interlocked system.

QUALITY ASSURANCE

The AVRS® solution is only installed by Malarkey-approved and certified contractors. AVRS® is to be installed over high-quality roof membrane systems. The roof systems must be inspected and approved by the membrane manufacturer prior to installation. Based on regionally-specific, engineered growing mediums, the AVRS® tray weight may be 15-20 lbs per square foot Field Moisture Capacity (FMC). As a result, the owner is responsible for determining the structural weight capacity of the building and roof structure prior to installing AVRS®.

PLANTS

A design mixture of fibrous sedums that thrive in a non-irrigated, extensive rooftop environment and meet USDA hardiness zone classifications will be recommended for each installation. Plants should be a minimum size of 1.5” wide plugs and planted with nine (9) plants per tray. Plants will be installed in accordance with the landscape design. Hydro seeding is also an effective planting alternative.

Temperature (°F)

-22º 14º 32º 50º 68º 86º 104º 122º 140º 153º

Average Temperatures Summer July 31 and Winter December 31

Conventional Roof Summer

Conventional Roof Winter

Green roofs reduce temperature fluctuations in summer and winter.

Average Water Retention Capacity

<table>
<thead>
<tr>
<th>Soil Depth</th>
<th>Water Retention</th>
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<tbody>
<tr>
<td>1”</td>
<td>58%</td>
</tr>
<tr>
<td>2.5”</td>
<td>67%</td>
</tr>
<tr>
<td>4”</td>
<td>71%</td>
</tr>
</tbody>
</table>

WATER RETENTION GRAPHS

AVRS® incorporates a built-in root barrier to confine roots and plants to the tray.

Zeba™, a starch-based super-absorbent additive, is pre-blended into the soil with every AVRS® system. This pre-blended mixture retains water and provides nutrients to succulents during dry conditions.

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ADVANTAGES OF THE AVRS®

- Provides year round energy savings
- Extends life of the roof membrane
- Improves storm water management
- Improves air quality
- Reduces urban heat-island effect
- Provides noise reduction
- Increases aesthetics