

Siplast Paragreen Pre-Grown Vegetated Roof Systems

Benefits and Features - Comparisons with Modular Systems



The Siplast approach to general roof design is focused on three basic principles: simplicity, practicality, and conservatism. This design philosophy has extended to our vegetated roof systems offering. For extensive roof design, our emphasis is on pre-grown, vegetated mat systems. While modular or tray systems are very popular in the United States, their use in European countries, where green roofing is a more established and mature market, is relatively small.

The following are summary points that highlight the benefits of a Siplast pre-grown vegetated roof system, and compare pre-grown vegetated blanket systems with modular systems.

Features and Benefits

Siplast Paragreen Pre-Grown Vegetated Mat Systems

Pre-selected sedum blend. The Paragreen Pre-grown Vegetated Mat is typically grown with a mixture of 10-11 species of sedum that will naturally evolve to match the local climate. Paragreen mats are 85% covered with living vegetation upon delivery and installation. There is no need to contract a landscape designer for plant selection.

Lightweight. Paragreen Pre-Grown Vegetated Mats weigh a minimum 3-4 lb/sf; the total green roof assembly (including waterproofing system) weighs approximately 10-25 lb/sf, depending on the particular system components used.

Easy to install. The roofing contractor can be trained to install the pre-grown vegetated mats. Quite simply, placement of the pre-grown roof system is similar to installing sod on grade. A crew of size can install approximately 5,000 sf to 10,000 sf per day. (See photos 1-2.)

Nominal maintenance. Irrigation is typically required for approximately one month following installation of the Paragreen Pre-Grown Vegetated Mats. During the first year supplemental watering may be necessary during long periods of little to no rainfall. After the initial establishment, Paragreen sedums should be fertilized every spring and fall.

Sloped roof applications. Paragreen Pre-Grown Vegetated Mats can be installed on virtually any roof slope or roof shape, including barrel roofs and special "hills & valleys" type configurations. (See photos 3-4.)

Wind resistance performance. Paragreen Pre-Grown Vegetated Systems meet the wind design requirements of



Photo 1 - Ease of Application



Photo 2 - Ease of Application



Photo 3 - Sloped Roof Application



Photo 4 - Sloped Roof

ANSI/SPRI RP-14.

Fire resistance. Meets guidelines for resistance to ignition or fire hazard according to ANSI/SPRI VF-1.

Bird hazard. No additional bird risk for airport installations.

Weed resistant. Although some weeding is required initially, the vegetated systems have a natural resistance to weed encroachment.

United States Green Building Council LEED Credits.

Paragreen Pre-Grown Vegetated Systems contribute toward the following USGBC LEED credit points:

- LEED 2009 NC Sustainable Sites SS Credit 5.2 Site Development: Maximize Open Space. 1 Point.

- LEED 2009 NC Sustainable Sites SS Credit 6.1 Stormwater Design, Quantity Control. 1 Point.

- LEED 2009 NC Sustainable Sites SS Credit 7.2 Landscape & Exterior Design to Reduce Heat Island Effect. 1 Point. An exemplary point is awarded when 100% of the total roof area (excluding HVAC and skylights) is covered with a pre-grown green roof system.

- LEED 2009 EBOM Sustainable Sites: SS Credit 6.2 Landscape & Exterior Design to Reduce Heat Island Effect – Option B. 1 Point. An exemplary point is awarded when 100% of the total roof area (excluding HVAC and skylights) is covered with a pre-grown green roof system.

Guarantee. A Siplast Paragreen Roof Systems addendum is offered for all Paragreen systems provided, which includes vegetated cover, root barrier, drainage systems, and Paraguard Green Roof Perimeter Components.

Track Record. Teranap has a track record of over 30 years of successful waterproofing beneath green roof systems. Pre-grown vegetated roof systems have a track record of over 20 years of successful green roof installations in Europe.

Paragreen Pre-Grown Vegetated Mat Comparisons to Modular or Tray Systems

Continuous green roof covering. The roof network of Paragreen Pre-Grown Vegetated Mats grows together shortly after installation. (See photos 5-8.)

Conversely, modular systems are not a continuous green cover. The root network is constrained by the boundaries of the tray, making each module a separate green roof in itself, and consequently more susceptible to extreme plant stress. (See photo 9.)

- The edges of plastic trays often are visible, especially during periods of dormancy, greatly affecting the overall aesthetic of the green roof cover. The plastic trays can often be exposed to degrading UV over time, resulting in aging. (See photo 10.)



Photo 5 - First Day of Installation



Photo 6 - Four Months After Installation



Photo 7 - Eight Months After Installation



Photo 8 - One Year After Installation

Easy access to the waterproofing membrane. The Paragreen Pre-Grown Vegetated Mats and root network can be cut open and simply rolled back for access and then placed back into position. The root network regrows together within a very short timeframe.

- Removing modular systems to access the roof membrane or other building components is a more tedious process, requiring the removal of plastic tubs that have to be placed somewhere other than directly over other trays. Often weight restrictions do not allow for double and triple stacking of trays.

Irrigation. Once firmly established, Paragreen Pre-grown Vegetated Systems with growing medium greater than 3 inches do not need supplemental irrigation in most climates. Growing medium less than 3 inches may require only simple base drip irrigation methods within the soil layer, since the continuous mat system allows for free-flowing water throughout the root network.

Conversely, modular systems require either less effective above-surface spray irrigation, or each tray must be irrigated. (See photos 11-12.)

Contact Siplast for more information regarding Paragreen Vegetated Roof Systems and specifications.



Photo 10 - Tray System Edges



Photo 11 - Topside Irrigation Trays



Photo 9 - Tray System Overview



Photo 12 - Topside Irrigation for Trays



Siplast

1000 E. Rochelle Blvd.,
Irving, Texas 75062
469-995-2200
Facsimile: 469-995-2205

In Canada:

201 Bewicke Ave., Suite 210
North Vancouver, BC, Canada V7M 3M7
604-929-7687

Customer Service in North America:

Toll Free 1-800-922-8800

www.siplast.com

www.siplastgreen.com



An Icopal Group Company