



Etera® Green Roof Plugs

Product Specifications

Etera® *Green Roof Plants*

14113 River Bend Road

Mt. Vernon, WA 98273

877-694-7613 p

360-395-3318 f

www.etera.com



SECTION XXXXXX Green Roof Plugs

PART 1 GENERAL

1.1 SCOPE

Provide all labor, material, tools, and equipment to unload, convey to roof, and install Etera® Green Roof Plugs.

1.2 RELATED SECTIONS

- A. Membrane Roofing
- B. Irrigation

1.3 QUALITY ASSURANCE

- A. Source Responsibility: The vegetated roof plant material shall be (*edit to requirements 24-cell, 72-cell, or 128-cell*) green roof plugs as provided by Etera® Green Roof Plants.

- B. Contact:
 - Etera® Green Roof Plants
 - 14113 River Bend Road
 - Mt. Vernon, WA 98273
 - 877-694-7613 phone
 - sales@etera.com

- C. Installer:

- 1. Company specializing in work of this section with documented experience of comparable scope.
 - 2. Accepted by Architect as qualified for installing work of this Section prior to Bid Date.

1.4 PROJECT CONDITIONS

- A. Environmental Conditions:

- 1. Green Roof Plugs should be installed after the anticipated date of last frost in the spring or before the anticipated date of first frost in the fall in the site area. See [Climatology of the US No. 20](#) at www.ncdc.noaa.gov/oa/climate/freezefrost/freezefrost.pdf for statistical interpretation of date of last frost/date of first frost.
 - 2. Green Roof Plugs should not be installed in waterlogged media.
 - 3. Green Roof Plugs should not be installed during prolonged periods of drought unless irrigation is available.

- B. Existing Conditions:

- 1. It is the responsibility of the installer to verify load limits for the roof structure prior to installation of the green roof elements.
 - 2. It is the responsibility of the installer to inspect or verify inspection of a new or existing roof for watertight conditions prior to installation of the green roof elements.



PART 2 PRODUCTS

2.1 Etera® Green Roof Plant Plugs:

- A. Plugs shall be healthy, vigorous, well rooted and established in the container in which they are growing. They shall have tops of good quality and be in a healthy growing condition. They shall have a well-established root system reaching the sides of the container and maintain a firm, complete root ball upon removal from the container.
- B. Plugs shall be grown and delivered in a continuous plug tray and conform to the following cell count and plug size.

(edit to requirements)

- 1. 24-cell plugs 2 5/8" w x 2 1/2" d
- 2. 72-cell plugs 1 1/2' w x 2" d
- 3. 128-cell plugs 1 1/8" d x 1 7/8" d

- C. Plugs shall be provided according to the landscaping plan.
- D. Plugs shall be provided in the following varieties and plug counts.
 - 1. *Note: List plug varieties, size and counts if no landscape plan exists.*

Note: Contact Etera® Green Roof Plants as shown above for available varieties.

2.2 IRRIGATION

- A. Irrigation must be applied until the roots are established in the growing media on the roof (6-8 weeks after installation).
 - 1. Thoroughly water entire roof surface immediately after installation.
 - 2. Deliver $\geq \frac{1}{4}$ " water, 2 times per week for the first 2 weeks.
 - 3. Deliver $\geq \frac{1}{4}$ " water, 1 time per week for the next 4-6 weeks.
- B. Extended irrigation requirements are dependent upon project location, conditions, and plant selection. It is recommended that if a permanent irrigation system is not installed, that a backup system (such as hose bibs located on the roof) be available for use during prolonged periods of drought (>4 weeks with less than a total of $\frac{1}{4}$ " precipitation).

PART 3 EXECUTION

3.1 GENERAL

- A. Plugs shall be installed by qualified contractors with demonstrated experience and project references. The plugs shall be installed in such a manner as to not damage or disturb any previously installed roofing components.

3.2 DELIVERY, STORAGE, AND HANDLING

- A. Plugs shall be delivered in such a manner as to preserve the quality of the plants. Truck delivery will be conducted in a manner as to protect the plugs from temperature or wind

damage. For transport times less than 1 day, a closed or open trailer may be used. For longer duration transport times, the plugs shall be delivered in a climate controlled trailer (e.g. refrigerated container).

- B. Upon arrival, the plugs shall be immediately off-loaded and moved to a protected area. Ideally, the plugs are to be installed within 48 hours of arrival.
- C. If installation is not possible in this time frame, then a holding area shall be reserved to store the plugs until they can be installed.
 - 1. Protect the plugs from weather extremes.
 - a. If it is hot, move them to a shady location.
 - b. If harsh winter conditions exist, set them out of the wind and protect them from frost.
 - 2. Store the plugs outside if possible. Plugs can be stored indoors for 1-2 days as long as they are kept cool. Do not store in a closed, hot storage container.
 - 3. Two day's storage in the pallet shipper trays is acceptable while waiting for installation.
 - a. If more than two days are needed, the plugs shall be unpacked and exposed to air and light.
 - b. Once the plugs are unpacked, water them thoroughly once each day until they can be installed.

3.3 EXAMINATION

- A. Underlying roof components shall be installed and tested according to manufacturer guidelines.
- B. Plugs shall be examined for count and any damage that may be present. Any damage or discrepancy in plug count should be duly noted and photos taken of the damaged material. Etera shall be notified immediately with a complete description of any damage or missing plugs. Failure to notify Etera within 24 hours of delivery may result in a denial of any claim for damaged or missing plugs.

3.4 PREPARATION AND INSTALLATION

- A. Growth Media:
 - 1. Spread a minimum of (*edit to requirements*) 3 inches of growing media over the green roof system.
 - 2. Level growing media with a large rake.
 - 3. If very dry, the growing media shall be moistened to the point where dust is not generated when disturbed before planting the plugs.
- B. *Optional if an erosion control blanket is to be installed*
 - 1. Roll out erosion control blanket over moist growing media in a manner that complies with manufacturer's recommendations for overlapping the edges.

2. Secure blanket with supplied stakes or pins in accordance with manufacturer's recommendations.
3. Cut openings in the erosion control blanket with a sharp knife creating an "X" cut opening in the erosion control blanket to allow planting of the plugs in the manner described below in Section 3.4C.

C. Etera® Green Roof Plugs:

1. Install plugs to a depth where the top of the plug root ball corresponds to the surface of the growing media.
2. Install plugs at the specified spacing of (*edit to requirements*) xx inches on center in staggered rows (to resemble a "5" as on dice).
3. Distribute varieties as shown on landscape plan.

D. The newly installed plugs must be immediately and thoroughly watered.

3.5 WARRANTY

- A. Etera® warrants that our products will conform to the description or pictures presented and will be viable when received. Since we have no control of plant growth once delivered, we give no other warranty, expressed or implied. Claims will be limited to the amount of the purchase price of the product and any applicable freight and royalty. Etera will not be held liable for consequential or incidental damages resulting from a shipment, such as: lost revenue, profit, commission, contamination, legal fees or any other damage

3.6 MAINTENANCE

- A. System installer shall maintain the vegetated roof for a period of at least [XXX] (*edit to requirements*) days after essential completion.
- B. Maintenance activities shall include:
1. Water the vegetated roof system twice a week for the first two (2) weeks and once a week for the next 4-6 weeks to aid in root establishment. Water the system more frequently during extended periods of hot, dry weather conditions.
 2. Provide hand weeding as necessary.
 3. Replace areas of damaged plants or dead plants using additional sedum plugs or cuttings.

END OF SECTION