

Step-by-Step Installation Instructions for N-Vire™ Mat 040 and N-Vire™ Mat 075 in Green Roof Systems

General Overview:

N-Vire™ Mat 040 (0.40 inches thick) and N-Vire™ Mat 075 (0.75 inches thick) can be installed in two primary configurations within a green roof system:

1. **For Root Reinforcement and Soil Stabilization** (Filament side up)
2. **For Drainage and Ventilation** (Fabric side up)

Below are detailed installation instructions for both configurations.

A. Installation for Root Reinforcement and Soil Stabilization

When installed **filament-side up**, N-Vire Mat assists with root entanglement, allowing vegetation roots to grow into the 3-dimensional polymeric core, providing added soil reinforcement and facilitating plant transportation.

Materials Needed:

- N-Vire Mat 040 or 075
- Green roof waterproofing membrane
- Root barrier (if required by design)
- Growing medium (soil or other specified material)
- Vegetation
- Utility knife or scissors
- Garden rake or similar tool for spreading soil
- Gloves
- Measuring tape

Step-by-Step Instructions:

1. **Prepare the Roof Surface:**
 - Ensure the roof is clean and free of debris. Confirm that the waterproofing membrane has been properly installed, covering the entire roof area where the green roof system will be applied.
 - If required, install a root barrier layer above the waterproofing membrane according to the manufacturer's specifications.
2. **Unroll the N-Vire Mat:**

- Starting at one end of the roof, unroll the N-Vire Mat 040 or 075 with the **filament side facing up** (this is the textured, 3-dimensional polymeric core side).
 - Ensure the mat is installed flat against the root barrier or waterproofing membrane, avoiding any folds or wrinkles.
3. **Cut the Mat to Size:**
- Use a utility knife or heavy-duty scissors to cut the mat to fit the specific dimensions of your green roof area.
 - Ensure that each piece fits snugly against adjacent pieces without significant gaps.
4. **Overlap the Seams:**
- If installing multiple mats, ensure that each sheet of N-Vire Mat overlaps the adjacent mat by at least 4 inches (10 cm) to maintain proper continuity of the root reinforcement system.
 - You can use flashing tape or appropriate adhesive (if recommended by the manufacturer) to secure the overlaps if necessary.
5. **Check for Proper Filament Placement:**
- Double-check that the filament side is up and evenly distributed across the surface, creating a tangleable structure for plant roots to grow into.
6. **Spread the Growing Medium:**
- Carefully spread the soil or growing medium evenly over the N-Vire Mat using a garden rake or similar tool.
 - Maintain a uniform thickness of the growing medium according to your green roof system's specifications (typically 4–6 inches or more, depending on the design).
7. **Plant the Vegetation:**
- Place your vegetation, such as sedums or other green roof plants, directly into the growing medium.
 - Ensure that the roots are in contact with the growing medium and positioned to grow into the filament side of the N-Vire Mat for entanglement.
8. **Water the Vegetation:**
- Thoroughly water the newly planted vegetation, ensuring the soil and roots are well hydrated.
 - This step will help the roots begin the entanglement process with the polymeric core of the N-Vire Mat.
9. **Final Check:**

- Ensure that the entire area is covered, with no gaps or exposed waterproofing membrane.
 - Perform a final inspection to ensure all mats are properly aligned, soil is spread evenly, and plants are positioned correctly.
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B. Installation for Drainage and Ventilation

When installed **fabric-side up**, the N-Vire Mat creates an airspace that promotes water drainage and ventilation. This is especially beneficial in applications where excess water must be directed away from the vegetation or roof structure.

Materials Needed:

- N-Vire Mat 040 or 075
- Green roof waterproofing membrane
- Root barrier (if required by design)
- Growing medium (soil or other specified material)
- Drainage outlets or weep holes (according to roof design)
- Utility knife or scissors
- Gloves
- Measuring tape

Step-by-Step Instructions:

1. Prepare the Roof Surface:

- As with root reinforcement, ensure the roof is clean and free of debris. The waterproofing membrane should be securely installed and fully cover the intended area.
- If specified, install a root barrier above the waterproofing membrane, especially when dealing with aggressive root systems.

2. Unroll the N-Vire Mat:

- Starting at one edge of the green roof, unroll the N-Vire Mat with the **fabric side facing up**. The fabric side is the smoother surface designed to separate the soil or growing medium from the core while facilitating air and water flow through the mat.
- Make sure the mat lies flat and without wrinkles to ensure an effective drainage pathway.

3. Cut the Mat to Fit the Area:

- Using a utility knife or heavy-duty scissors, cut the N-Vire Mat to the necessary size, ensuring it fits tightly against the edges of the green roof system.
 - If the roof has drainage outlets or weep holes, cut the mat around these areas to ensure water can easily flow into the drainage system.
- 4. Overlap the Seams:**
- Overlap the seams of the N-Vire Mat by at least 4 inches (10 cm) to ensure continuous drainage across the entire surface.
 - As with root reinforcement installation, flashing tape can be used to secure the overlaps, but this is optional based on the specific project requirements.
- 5. Check for Airspace Creation:**
- Verify that the mat is installed with the correct orientation (fabric side up) and that the airspace beneath the fabric will facilitate ventilation and water movement.
- 6. Install Drainage Components (if required):**
- Ensure that any drainage outlets, gutters, or weep holes are accessible and clear of obstructions. This step is vital to the functionality of the drainage layer, as it allows water to exit the green roof assembly efficiently.
- 7. Spread the Growing Medium:**
- Carefully spread the growing medium (soil) evenly over the fabric side of the N-Vire Mat.
 - Ensure the depth of the growing medium aligns with your specific project's design requirements (e.g., 4-6 inches for typical green roof systems).
- 8. Plant the Vegetation:**
- Plant the vegetation into the growing medium as you would in a traditional green roof application. Make sure to plant densely to avoid erosion and allow the plants to establish quickly.
- 9. Final Watering and Inspection:**
- Water the newly installed vegetation to encourage root establishment. The water will percolate through the soil and enter the N-Vire Mat, where it will be efficiently drained away and vented out of the airspace.
 - Conduct a final inspection to ensure the mat is properly secured, the growing medium is evenly distributed, and the plants are properly placed.
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Post-Installation Care:

- **Watering Schedule:** After installation, follow an appropriate watering schedule based on the climate and the type of vegetation. Keep in mind that proper drainage and ventilation should prevent over-saturation of the soil.
- **Inspections:** Periodically check the mat installation for any displacements, especially after heavy rain events. Ensure the drainage system is working as intended and no blockages have occurred.
- **Maintenance:** If necessary, prune the vegetation to prevent excessive root growth that could compromise the mat's function.

These installation steps will ensure that the N-Vire Mat 040 and 075 products are correctly placed in either configuration, providing optimal performance for root reinforcement or drainage and ventilation in green roof systems.