SECTION 07 55 63

VEGETATED ROOFING – N-VIRE™ MAT 040

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PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ventilation and drainage mat for green roof systems.
2. Root reinforcement and soil stabilization mat.

B. Related Sections:

1. Section 07 14 00 – Fluid-Applied Waterproofing.
2. Section 07 92 00 – Joint Sealants.
3. Section 32 93 00 – Plants.

1.2 REFERENCES

A. ASTM D5261 – Standard Test Method for Measuring Mass per Unit Area of Geotextiles.
B. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
C. ASTM D4533 – Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
D. ASTM D4716 – Standard Test Method for Constant Head Hydraulic Transmissivity of Geosynthetics.

1.3 SUBMITTALS

A. Product Data: Manufacturer's technical data sheets, installation instructions, and recommendations.
B. Shop Drawings: Layout drawings showing seam overlaps, drainage pathways, and transitions at penetrations.
C. Verification Samples: 12" x 12" minimum sample of mat with fabric attached.
D. Warranty: Manufacturer's standard limited warranty.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 years' experience producing entangled net drainage/ventilation products.

B. Installer Qualifications: Minimum 2 years' documented experience installing green roof systems of similar scope.
C. Mock-Up: Provide 100 sq. ft. area of typical installation for evaluation. Approved mock-up may remain as part of Work.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Deliver materials in manufacturer's original packaging, with identification labels intact.
B. Store rolls on flat surface, elevated off ground, protected from sunlight and weather.
C. Do not store vertically or under compressive loads.

1.6 PROJECT CONDITIONS
A. Do not install when ambient temperature is outside manufacturer's recommended limits.
B. Ensure waterproofing and root barrier membranes are properly installed prior to mat installation.

1.7 WARRANTY
A. Manufacturer's standard one-year limited warranty against defects in materials and workmanship.

PART 2 – PRODUCTS

2.1 MANUFACTURER
A. Keene Building Products
2926 Chester Avenue, Cleveland, OH 44114
Toll Free: (877) 514-5336
Phone: (440) 605-1020
Website: www.keenebuilding.com

2.2 PRODUCT DESCRIPTION
A. Product: N-VIRE™ Mat 040

1. Thickness: 0.40 inch (10 mm).
2. Composition: Cuspated geometric patterned extruded polymeric monofilament core, heat-welded at junctions, with attached nonwoven geotextile filter fabric.
3. Color: Charcoal fabric.
4. Function: Provides ventilation, drainage, soil separation, and root reinforcement.

B. Features and Benefits:

1. High water flow capacity (>10 gpm).

2. Class A fire-rated for roofing applications.
3. Carbon black added for UV stability.
4. Lightweight and easy to install.
5. Enhances root growth and soil stabilization.
6. Promotes optimal growing conditions.

2.3 PERFORMANCE REQUIREMENTS

A. Flow Rate (ASTM D4716):

- At 250 psf load: 22.50 gpm/ft width @ 1.0 gradient.
- At 500 psf load: 20.78 gpm/ft width @ 1.0 gradient.
- At 1,000 psf load: 19.80 gpm/ft width @ 1.0 gradient.
  B. Fabric Properties:
- Weight: 1.4 oz/yd² (136 g/m²).
- Grab Tensile Strength: 57 lbs (254 N).
- Trapezoid Tear: 31 lbs (139 N).

2.4 ACCESSORIES

A. Root barrier (as required by design).
B. Flashing tape for seam overlaps (optional).
C. Compatible waterproofing membranes and adhesives.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify waterproofing membrane is installed, tested, and approved prior to placement of mat.
B. Ensure roof surfaces are clean and free of debris.

3.2 INSTALLATION

A. General: Install N-VIRE™ Mat 040 in accordance with manufacturer's written installation guidelines.

B. **Root Reinforcement Configuration (Filament Side Up):**

1. Unroll mat filament side up over waterproofing/root barrier.
2. Overlap seams minimum 4 inches.
3. Cut to fit around penetrations.

4. Spread growing medium evenly across mat.
5. Plant vegetation; water thoroughly.

C. **Drainage and Ventilation Configuration (Fabric Side Up):**

1. Unroll mat fabric side up over waterproofing/root barrier.
2. Overlap seams minimum 4 inches.
3. Ensure access to drainage outlets and weep holes.
4. Spread growing medium evenly.
5. Plant vegetation; water thoroughly.

3.3 FIELD QUALITY CONTROL

A. Inspect installation to ensure seams are overlapped correctly and mats are lying flat without wrinkles.
B. Verify drainage pathways remain unobstructed.

3.4 CLEANING AND PROTECTION

A. Protect completed installation from damage due to construction activities.
B. Replace damaged mats prior to placement of soil and vegetation.