SECTION 07 10 00

DAMPPROOFING AND WATERPROOFING

(Prefabricated Composite Drainage Mat)

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PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Prefabricated composite drainage mats for foundation walls, retaining walls, planters, plaza decks, balconies, tunnels, and green roofs

B. Related Sections:

1. Section 03 30 00 – Cast-in-Place Concrete.
2. Section 07 13 00 – Sheet Waterproofing.
3. Section 07 27 00 – Air Barriers.
4. Section 32 93 00 – Plants.

1.2 REFERENCES

A. ASTM D5261 – Mass per Unit Area of Geotextiles.
B. ASTM D1777 – Thickness of Textile Materials.
C. ASTM D4632 – Grab Breaking Load and Elongation of Geotextiles.
D. ASTM D4533 – Trapezoid Tearing Strength of Geotextiles.
E. ASTM D6241 – CBR Puncture Strength of Geotextiles.
F. ASTM D4751 – Apparent Opening Size (AOS) of Geotextiles.
G. ASTM D4491 – Water Permeability of Geotextiles.
H. ASTM D4355 – Deterioration of Geotextiles by UV Light Exposure.
I. ASTM D4716 – Constant Head Hydraulic Transmissivity of Geosynthetics

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1.3 SUBMITTALS

A. Product Data: Manufacturer’s TDS and installation instructions.
B. Shop Drawings: Indicate seam overlaps, terminations, and connections to drains.
C. Samples: 12" x 12" sample with filter fabric attached.

D. Warranty: Manufacturer's one-year limited warranty

1.4 QUALITY ASSURANCE

A. Manufacturer: Minimum 5 years' experience producing drainage composites.
B. Installer: Minimum 2 years' experience with drainage mat installations of similar scope.
C. Mock-Up: Provide minimum 100 sq. ft. sample installation for review and approval.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver in original, unopened packaging with labels intact.
B. Store flat, off the ground, protected from UV exposure, dirt, and damage.
C. Do not stack more than three rolls high.

1.6 PROJECT CONDITIONS

A. Do not install in standing water or during inclement weather.
B. Verify waterproofing system is installed and approved prior to mat installation.

1.7 WARRANTY

A. Manufacturer's limited one-year warranty against defects in material 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 PREFABRICATED COMPOSITE DRAINAGE MAT

A. Product: **Driwall™ PCD 10/045**

1. Thickness: 0.45 inch (11.4 mm).
2. Core: Extruded polymer matrix of tangled monofilaments, heat-welded at junctions, "zig-zag" geometric pattern.
3. Filter Fabric: Nonwoven geotextile, charcoal polyester.

B. Features and Benefits

1. Eliminates hydrostatic pressure.
2. Protects soft waterproofing membranes.
3. Replaces aggregate backfill.

4. Thin profile for tight assemblies.
5. Lightweight and easy to handle.
6. Resilient structure with minimal deflection, no creep, and no long-term degradation.

2.3 PERFORMANCE REQUIREMENTS

A. Fabric Properties:

- Weight: 3.25 oz/yd² (110 g/m²) ASTM D5261.
- Grab Tensile Strength: 80 lbs (356 N) ASTM D4632.
- Grab Elongation: 50% ASTM D4632.
- Trapezoid Tear Strength: 30 lbs (134 N) ASTM D4533.
- CBR Puncture Strength: 175 lbs (779 N) ASTM D6241.
- Apparent Opening Size (AOS): No. 50 US Sieve (0.30 mm) ASTM D4751.
- Permittivity: 2.1 sec^{-1} ASTM D4491.
- Flow Rate: 155 gpm/ft² ASTM D4491.
- UV Resistance: 70% strength retained at 500 hours ASTM D4355.

B. Flow Rates by Load & Slope (ASTM D4716):

- **Vertical Wall (1.0 gradient):** 24.50 gpm/ft @ 250 psf; 22.63 gpm/ft @ 500 psf; 21.56 gpm/ft @ 1,000 psf.
- **Steep Roof / Balcony (0.5 gradient):** 16.34 gpm/ft @ 250 psf; 15.15 gpm/ft @ 500 psf; 14.45 gpm/ft @ 1,000 psf.
- **Balcony Slope (0.02 gradient):** 2.79 gpm/ft @ 250 psf; 2.68 gpm/ft @ 500 psf; 2.52 gpm/ft @ 1,000 psf.
- **High Load (2,000–5,000 psf):** 0.39–0.12 gpm/ft depending on load.

2.4 PACKAGING

A. Roll Dimensions:

- Width: 48 in (122 cm).
- Length: 100 ft (30.5 m).
- Coverage: 400 ft² (37.2 m²).

- Weight: 55.6 lbs (25.2 kg).

2.5 ACCESSORIES
A. KeeneFlash 4" flashing tape (for seams).
B. KeeneSeal 100 sealant (for terminations).
C. Termination bars and mechanical fasteners.

PART 3 – EXECUTION

3.1 EXAMINATION
A. Verify substrate is clean, smooth, and waterproofing membrane installed and approved.
B. Confirm slope to drains or drainage tile system.

3.2 INSTALLATION *(per Keene Installation Guidelines)*
A. Cut mats with utility knife or scissors.
B. Butt seams tightly; tape with KeeneFlash 4".
C. Overlap selvage edges in shiplap manner.
D. On vertical walls, secure with termination bar; seal with KeeneSeal 100.
E. Ensure mats lap into drainage tile system at base of walls.
F. Place overburden (soil, pavers, or concrete) or free-draining gravel backfill.

3.3 FIELD QUALITY CONTROL
A. Inspect seams, overlaps, and termination details.
B. Replace damaged sections prior to covering.

3.4 PROTECTION
A. Protect mats until covered by backfill or overburden.
B. Do not expose mats to prolonged UV light.