



ENKADRAIN[®] RETAIN&DRAIN3211

GREEN ROOF WATER RETENTION & DRAINAGE

PRODUCT DESCRIPTION

Enka[®]Retain&Drain 3211 is a geo-composite composed of a drainage core of fused three-dimensional entangled polypropylene filaments thermally bonded to a non-woven water retention fleece made of 100% mixed recycled synthetic fibers on one side and a non-woven polyester/polyamide filter fabric on the other.

The propylene filaments are molded into a square waffle pattern to form a drainage core with excellent compressive strength. Polypropylene has a low moisture absorption thus maintaining its strength even in wet service environment. It is chemically inert and has excellent resistance to organic solvents, degreasing agents, acids, and alkalines.

The water retention fleece is a lightweight non-woven that can capture and store more than 7.5 times its own weight in water. Unlike reservoir drains where water is stored in segregated small "cups", Enka[®]Retain&Drain 3211 provides a uniform supply of water in direct contact with the growing medium that is readily accessible by the plants.

The filter fabric is a spun-laid non-woven that offers excellent filtering performance through its uniform open structure. Because of the proprietary bi-component filaments, it is dimensionally and thermally stable and exhibits high tensile strength per unit weight. It is thin and flexible yet possess excellent tear and puncture resistances.

Enka[®]Retain&Drain 3211 comes in convenient roll format. It is water vapor permeable and therefore suitable for installation on conventional and protected membrane roofs. It is an environmental conscious green roof drain that contains 64% by weight of post-industrial recycled materials.

APPLICATIONS

- ▶ Extensive, semi-intensive and intensive green roofs
- ▶ Exterior and interior planters
- ▶ Enhance water retention and stormwater management capacity of green roofs
- ▶ Suitable for conventional and protected membrane roofs (PMR)

FEATURES & BENEFITS

- ▶ Protects waterproofing during and after green roof installation
- ▶ High compressive strength to maintain good drainage under loads
- ▶ Superior water holding capacity reduces runoff and contributes to stormwater management
- ▶ 3D open core provides a high drainage rate with minimal resistance
- ▶ Drainage core is resilient to transient loads and maintains flow
- ▶ Additional filter fabric for extra filtration and membrane protection
- ▶ Lightweight, flexible, easy and quick to install
- ▶ Conforms to irregular or curved roof surface
- ▶ Easy to cut and meet complicated landscape design requirements
- ▶ Durable, excellent chemical and biological resistances
- ▶ Recycled contents contributes towards LEED credits

INSTALLATION

Install Enka[®]Retain&Drain 3211 with the water retention fleece facing up and entangled filaments down. Butt rolls and cover joint with adjacent roll using the built-in 4in. (100mm) side lap to achieve a continuous fleece coverage. Butt ends of rolls together. Stagger adjacent rolls by at least 40 in. (1m) so end joints are not aligned. Cover Enka[®]Retain&Drain 3211 immediately after installation to prevent wind uplift and degradation by ultra-violet radiation.



800.747.6095
760.747.6095



Inquiries@americover.com
www.americover.com



2067 Wineridge Place, Suite F · Escondido, CA 92029



PACKAGING

Property	Imperial	Metric
Core Width	39.0 in	99.1 cm
Length	61.5 ft	18.8 m
Area	22.2 yd ²	18.6 m ²
Area	200.0 ft ²	18.6 m ²
Roll Diameter	29.0 in	73.7 cm
Gross Roll Weight	50.6 lb	23.0 kg

PHYSICAL PROPERTIES

Polypropylene has excellent resistance against organic solvents, degreasing agents, acids, and alkalines. It has tensile strength superior to high density polyethylene. It is lightweight and has low moisture absorption.

FABRIC PROPERTIES

PROPERTIES	TEST METHOD	IMPERIAL	METRIC
Polymer		Recycled synthetic fibers	
Fabric Color		Varies	
Weight	ASTM D-6525	17.0 oz yd ²	576 g/m ²
Thickness	ASTM D-5261	0.20 in	5.1 mm
Fabric Width	ASTM D-3775	44.1 in	1.2 m
Water Retention	ASTM E-2397	0.11 g/ft ²	4.48 l/m ²
PROPERTIES	TEST METHOD	IMPERIAL	METRIC
Polymer		PA6 & PET	
Fabric Color		Grey	
Weight	ASTM D-5261	3.54 oz/yd ²	120.0 g/m ²
Grab Strength MD/CD	ASTM D-4632	125.0 lb	556.0 N
Grab Elongation	ASTM D-4632	40%	40%
Trapezoidal Tear	ASTM D-4533	40.0 lb	177.9 N
Puncture Strength	ASTM D-4833	35.0 lb	155.0 N
Flow Rate	ASTM D-4491	185.0 gal/min/ft ²	125.6 l/sec/m ²
Permittivity	ASTM D-4491	2.5 sec ⁻¹	2.5 sec ⁻¹

NOTE: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance, odor transmission, longevity as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. AMERICOVER, INC. MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage. Limited Warranty available at www.Americover.com

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