

MATERIAL PROPERTY DATA SHEET

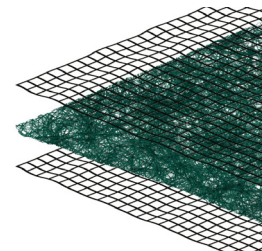


EXCEL PP5-12™

Permanent • Double Net • Poly-Fiber Matrix •
Turf Reinforcement Mat

DESCRIPTION

Excel PP5-12 Turf Reinforcement Mat (TRM) is composed of 100% synthetic green fibers mechanically (stitch) bound between two UV stabilized, synthetic nets. Stitching is secured on two-inch centers using UV stabilized, synthetic thread. Excel PP5-12 is a permanent, three-dimensional TRM that provides immediate erosion protection and long-term turf reinforcement and is intended for applications requiring erosion protection for greater than thirty-six months. Each roll of Excel PP5-12 is made in the USA and manufactured under Western Green's Quality Assurance Program to ensure a continuous distribution of fibers and consistent thickness.



Material Content

Matrix	Synthetic Fibers
Netting	Top Net: Mediumweight, UV stable Bottom Net: Mediumweight, UV stable
Thread	Synthetic, UV Stable

Standard Roll Sizes

Width	8 ft (2.4 m)	16 ft (4.9 m)
Length	112 ft (34.0 m)	112 ft (34.0 m)
Weight ± 10%	75 lb (34.0 kg)	150 lb (68.0 kg)
Area	100 sy (83.6 m ²)	200 SY (167.0 m ²)

Material available in custom roll sizes

Approvals & Classification

Classification	FHWA: Type 5.C / ECTC: 5.D
TTI Approvals	Class 2 Type H
NTPEP Number	ECP-2020-01-009

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Index Property Test Method Typical

Thickness	ASTM D6525	0.40 in. (10 mm)
Mass/Unit Area	ASTM D6566	12.0 oz/sy (400 g/sm)
Tensile Strength – MD	ASTM D6818	325 lbs/ft (4.7 kN/m)
Tensile Strength – TD	ASTM D6818	225lbs/ft (3.3 kN/m)
Elongation - MD	ASTM D6818	25%
Elongation – TD	ASTM D6818	30%
UV Stability	ASTM D4355	80% @1000 hr
Light Penetration	ASTM D6567	20%
Biomass Improvement	ASTM D7322	400%
Specific Gravity	ASTM D792	57.4 lb/ft ³ (0.92 g/cm ³)
Porosity	ECTC	96%

Design Parameters

Property	Unvegetated	Vegetated ³
RUSLE C Factor ²	0.03	N/A
Slope Maximum Gradient ¹	0.5H:1V	0.5H:1V
Permissible Shear Stress ²	2.8 psf (135 Pa)	12.0 psf (575 Pa)
Permissible Velocity ²	9.0 fps (2.7 m/s)	18.0 fps (5.5 m/s)
τ_{veg} / τ_{TRM} (HEC-15)	N/A	0.55

Manning's n Roughness (HEC-15)

τ_{lower}	τ_{mid}	τ_{upper}
0.041	0.033	0.028

1 Maximum Gradient a recommendation for typical installations.

2 Hydraulic thresholds compliant with ASTM D6459/D6460 but generalized for typical applications.

3 Vegetated values dependent on established stand of vegetation

Rev. 4.2023

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