

# MATERIAL PROPERTY DATA SHEET

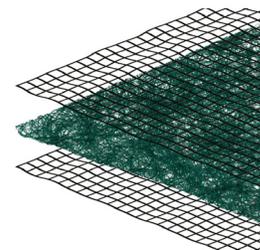


## EXCEL PP5-12™

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 <sup>2</sup> )	200 SY (167.0 m <sup>2</sup> )

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

Disclaimer: The information contained herein may represent product index data, performance ratings, bench scale testing or other material utility quantifications. Each representation may have unique utility and limitations. Every effort has been made to ensure accuracy, however, no warranty is claimed and no liability shall be assumed by Western Green or its affiliates regarding the completeness, accuracy or fitness of these values for any particular application or interpretation. While testing methods are provided for reference, values shown may be derived from interpolation or adjustment to be representative of intended use. For further information, please feel free to contact Western Green.

©2022, Western Excelsior is a registered trademark from Western Green. Certain products and/or applications described or illustrated herein are protected under one or more U.S. patents. Other U.S. patents are pending, and certain foreign patents and patent applications may also exist. Trademark rights also apply as indicated herein. Final determination of the suitability of any information or material for the use contemplated, and its manner of use, is the sole responsibility of the user. Printed in the U.S.A.

### 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 <sup>3</sup> (0.92 g/cm <sup>3</sup> )
Porosity	ECTC	96%

### Design Parameters

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

### Manning's n Roughness (HEC-15)

$\tau_{lower}$	$\tau_{mid}$	$\tau_{upper}$
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

Scan for additional and updated product information, or [click here](#).

