

# MATERIAL PROPERTY DATA SHEET

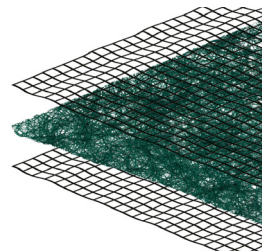


## EXCEL PP5-12™

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
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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

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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 <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

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





**Bowman**  
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Supply Inc.



**Quick**  
Supply Co.



**Cascade**  
GEOSYNTHETICS

## LOCATIONS & CONTACT INFO

### ASP ENTERPRISES

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**Des Moines, IA**  
515.289.1271

**Portland, OR**  
971.339.1020

## SOLUTIONS WE SUPPLY

### GEOSYNTHETICS

Filter Fabrics

Stabilization Fabrics

Geogrids

- Road Grids
- Wall Grids
- Slope Stabilization

Specialty Fabrics

Composite Geomembranes

- GCLs, PVC, HDPE, LLDPE, EPDM, Granular Bentonite

### SEDIMENT CONTROL

Inlet Protection

- Grated Inlet, Curb Inlet, Area Inlet Protection

Ditch Checks

- Triangle Silt Dike
- GeoRidge

Perimeter Protection

- High and Low-Porosity Silt Fence, Straw Wattles, Silt Socks
- Safety Fence

Flocculants & Water Treatment

- Polymer-Based & Natural Flocculants

Sediment Basin Skimmers

Dewatering Bags

Trackout Control

- FODS
- Rumble Grates

Turbidity Curtains

### EROSION CONTROL

Basic Hydraulically Applied Mulches

- Wood
- Paper
- Blends
- Straw

High-Performance Hydraulically

Applied Products

- BFM
- FGM
- Additives & Tackifiers

Temporary Erosion Control Blankets

- Coir & Jute Mat/Nettings
- Short-Term ECBs
- Extended-Term ECBs

Permanent Erosion Control Blankets

- Turf Reinforcement Mats
- HP-TRMs
- Anchor Reinforced Vegetation System

Structural BMPs

- Transition Mats
- Geoweb Cellular Confinement
- Composite Vegetated Armor System
- Flex MSE Vegetated Wall System
- Articulated Concrete Block
- Gabions
- Grout-Filled Geotextile Mats

Vegetation Establishment

- Native Seed & Turf Seed
- Fertilizers
- Organic Soil Additives
- Stratavault Soil Cells

### STORMWATER MANAGEMENT

Water Quality

- Inlet Filter Boxes
- Pre-Treatment Chamber
- Nutrient Separating Baffle Boxes
- High-Flow Biofiltration Media
- Hydrodynamic Separators
- Stratavault

Water Quantity

- Modular Underground Storage Systems
- Chamber Detention Systems

Drainage

- HDPE Swale Liner
- Pipe & Fittings
- Drainage Composites
- Strip Drain

Inlet Structures

- PVC
- Drain Basins, In-Line Drains
- Landscape

Permeable Pavers

- Permeable Articulating Concrete Block
- Grass Pavers
- Gravel Pavers
- Concrete Pavers

### SPECIALTY

Natural & Synthetic Coir Fiber Logs

Vegetated Reinforced Soil Slopes

Soil Anchors

Root Barrier System

AquaBlok

Muscle Wall

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