

# MATERIAL PROPERTY DATA SHEET

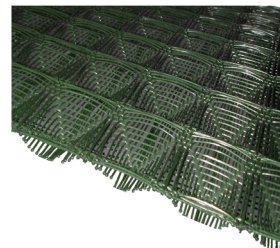


## EXCEL PP5-Xtreme™

Permanent • 3-D Woven • UV Stable •  
High Performance Turf Reinforcement Mat

### DESCRIPTION

PP5-Xtreme is a High-Performance Turf Reinforcement Mat (HP-TRM) produced by weaving 100% UV-stabilized, high denier synthetic mono-filament yarns woven into permanent, high-strength, three-dimensional structure. The optimized properties of the material provide immediate erosion control with excellent vegetation establishment and class-leading long-term turf reinforcement. Additionally, the high strength at low elongation is ideal for slope stability applications (when paired with deep-seated, high strength anchors) and is unique compared to other HPTRMs. The design life of PP5-Xtreme is rated at fifty years in typical installations, however, can vary based on conditions. PP5-Xtreme is made in the USA and monitored by quality assurance testing at a GAI-LAP accredited laboratory.



Material Content			
Woven , Single Layer		Green or Tan	

Standard Roll Sizes				
Width	8 ft	(2.4 m)	15 ft	(4.5 m)
Length	135 ft	(40.5 m)	150 ft	(45 m)
Weight ± 10%	90 lb	(42.0 kg)	113 lb	( 51.0 kg)
Area	120 sy	(100 m <sup>2</sup> )	250 SY	( 209 m <sup>2</sup> )

Material available in custom roll sizes

Approvals & Classification	
Classification	FHWA: Type 5.C / ECTC: 5.F
TTI Approvals	N/A
NTPEP Number	ECP-2022-01-014

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Index Property	Test Method	MARV	
Thickness	ASTM D6525	0.3 in.	(7 mm)
Mass/Unit Area	ASTM D6566	9.0 oz/sy	(300 g/sm)
Tensile Strength – MD	ASTM D6818	4,000 lbs/ft	(58.4 kN/m)
Tensile Strength – TD	ASTM D6818	3,000 lbs/ft	(43.8 kN/m)
Elongation - MD	ASTM D6818	25%	
Elongation – TD	ASTM D6818	20%	
UV Stability	ASTM D4355	90% @6000 hr	
UV Stability	ASTM D7238	90% @6000 hr	
Resiliency	ASTM D6524	75%	
Light Penetration	ASTM D6567	30%	
Biomass Improvement	ASTM D7322	325%	
Specific Gravity	ASTM D792	57.4 lb/ft <sup>3</sup>	(0.92 g/cm <sup>3</sup> )
Porosity	ECTC	95%	
Carbon Footprint	GHG*	1.6 kg CO <sub>2</sub> e/m <sup>2</sup>	

Design Parameters		
Property	Unvegetated	Vegetated <sup>3</sup>
RUSLE C Factor <sup>2</sup>	N/A	N/A
Slope Maximum Gradient <sup>1</sup>	0.5H:1V	0.5H:1V
Permissible Shear Stress <sup>2</sup>	2.3 psf	17.0 psf (815 Pa)
Permissible Velocity <sup>2</sup>	8.0 fps	25.0 fps (7.6 m/s)
$\tau_{veg} / \tau_{TRM}$ (HEC-15)	N/A	0.26

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

$\tau_{lower}$	$\tau_{mid}$	$\tau_{upper}$
0.027	0.027	0.025

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

\*WRI/WBCSD Greenhouse Gas Protocol: Product Life Cycle Accounting and Reporting Standard, 2013.



**Bowman**  
Construction  
Supply Inc.



**Quick**  
Supply Co.



**Cascade**  
GEOSYNTHETICS

## LOCATIONS & CONTACT INFO

### ASP ENTERPRISES

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**Des Moines, IA**  
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**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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**SEDIMENT CONTROL | REVEGETATION & SOIL AMENDMENTS**