

MATERIAL PROPERTY DATA SHEET

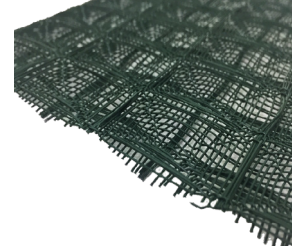


EXCEL PP5-Pro™

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

DESCRIPTION

Excel PP5-Pro™ 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 long-term turf reinforcement. The strength, resiliency, and durability of PP5-Pro provides a decades long design life and suitability for harsh environments including debris flow and light vehicle traffic. When incorporated with high-load anchors, PP5-Pro can add strength to sub-surface soil and improve slope stability.



PP5-Pro is compliant and/or exempt with the Build America, Buy America Act, §§ 70901–70927 of the Investment and Jobs Act (Pub L. 117-58), 2 CFR Part 184 – Buy America Preferences for Infrastructure Projects and OMB Memorandum M-22-11.

Material Content				
Woven, Single Layer		Green or Tan		
Standard Roll Sizes				
Width	11.5 ft	(3.5 m)	8 ft	(2.4 m)
Length	78 ft	(24.0 m)	135 ft	(40.5 m)
Weight ± 10%	72 lb	(33.0 kg)	86 lb	(40 kg)
Area	100 sy	(83.6 m²)	120 SY	(100 m²)
Part Number	PP5-PRO-11.5X78		PP5-PRO-8X135	

Material available in custom roll sizes

Approvals & Classification	
Classification	FHWA: Type 5.C / ECTC: 5.F
TTI Approvals	Class 2 Type H
NTPEP Number	ECP-2022-01-011

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Index Property	Test Method	Typical	
Thickness	ASTM D6525	0.3 in.	(6 mm)
Mass/Unit Area	ASTM D6566	7.5 oz/sy	(250 g/sm)
Tensile Strength – MD	ASTM D6818	3,000 lbs/ft	(43.8 kN/m)
Tensile Strength – TD	ASTM D6818	3,000 lbs/ft	(43.8 kN/m)
Elongation - MD	ASTM D6818	25%	
Elongation – TD	ASTM D6818	25%	
UV Stability	ASTM D4355	90% @3000 hr	
UV Stability	ASTM D7238	90% @3000 hr	
Resiliency	ASTM D6524	70%	
Light Penetration	ASTM D6567	35%	
Biomass Improvement	ASTM D7322	300%	
Specific Gravity	ASTM D792	57.4 lb/ft ³	(0.92 g/cm ³)
Porosity	ECTC	96%	
Carbon Footprint	GHG*	1.3 kg CO ₂ e/m ²	

Design Parameters		
Property	Unvegetated	Vegetated ³
RUSLE C Factor ²	N/A	N/A
Slope Maximum Gradient ¹	0.5H:1V	0.5H:1V
Permissible Shear Stress ²	2.3 psf	14.0 psf (670 Pa)
Permissible Velocity ²	8.0 fps	20.0 fps (6.1 m/s)
τ_{veg} / τ_{TRM} (HEC-15)	N/A	0.35
Manning's n Roughness (HEC-15)		
τ_{lower}	τ_{mid}	τ_{upper}
0.033	0.030	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

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

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