

Material and Performance Specification P300LW Turf Reinforcement Mat

Description
<p>The permanent turf reinforcement mat shall be a machine-produced mat of 100% UV stable polypropylene fiber. The matting shall be of consistent thickness with the synthetic fibers evenly distributed over the entire area of the mat. The matting shall be covered on the top side with black heavyweight UV stabilized polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.50 x 0.50 inch (1.27 x 1.27 cm) mesh. The bottom net shall also be UV stabilized polypropylene with a 0.63 x 0.63 (1.57 x 1.57 cm) mesh size. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with nondegradable thread. All mats shall be manufactured with a colored thread stitched along both outer edges as an overlap guide for adjacent mats.</p> <p>The P300LW shall meet Type 5A, 5B, specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) <i>FP-03 Section 713.18</i></p>

Material Content		
Matrix	100% UV stabilized Polypropylene fiber	0.5 lbs/yd ² (0.27 kg/m ²)
Netting	Top and Bottom, UV stabilized Polypropylene	3 lb/1000 ft ² (1.47 kg/100m ²)
Thread	Polypropylene, UV stable	

Standard Roll Sizes		
Width	6.5 ft (2.0 m)	8 ft (2.44 m)
Length	108 ft (32.92 m)	112 ft (34.14 m)
Weight ± 10%	45.0 lbs (20.4 kg)	56.25 lbs (25.5 kg)
Area	80 yd ² (66.9 m ²)	100 yd ² (83.61 m ²)

Bench Scale Testing (NTPEP)		
Test Method	Parameters	Results
ECTC 2 Rainfall	50 mm (2 in)/hr-30 min 100mm (4 in)/hr-30 min 150 mm (6 in)/hr-30 min	SLR** = 7.87 SLR** = 7.84 SLR** = 7.81
ECTC 3 Shear Res.	Shear at 0.50 inch soil loss	2.2 lbs/ft ²
ECTC 4 Germination	Top Soil, Fescue, 21 day incubation	471% improvement of biomass

* Bench Scale tests should not be used for design purposes
 ** Soil Loss Ratio = Soil Loss Bare Soil/Soil Loss with RECP

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.30 in (7.68 mm)
Density	ASTM D792	0.917 oz/in ³
Mass/Unit Area	ASTM 6566	8.92 oz/yd ² (300 g/m ²)
UV Stability	ASTM D4355 /1000 hr	90%
Light Penetration	ECTC Guidelines	27.6%
Tensile Strength –MD	ASTM D6818	430 lbs/ft (6.38 kN/m)
Elongation – MD	ASTM D6818	37%
Tensile Strength – TD	ASTM D6818	150lbs/ft (2.22 kN/m)
Elongation – TD	ASTM D6818	28%

Maximum Permissible Shear Stress		
	Short Duration	Long Duration
Phase 1 Unvegetated	2.0 lbs/ft ² (96 Pa)	2.0 lbs/ft ² (96 Pa)
Phase 2 Partially Veg.	6.0 lbs/ ft ² (287 Pa)	4.0 lbs/ft ² (191 Pa)
Phase 3 Fully Veg.	8.0 lbs/ft ² (383 Pa)	6.0 lbs/ ft ² (287 Pa)

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.082
20-50 ft	0.036	0.060	0.086
≥ 50 ft (15.2 m)	0.070	0.090	0.110

Roughness Coefficients- Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.030
0.50 – 2.0 ft	0.030-0.018
≥ 2.0 ft (0.60 m)	0.018

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