



Product Evaluation and Test Results



Test Methods

A variety of test methods are utilized to determine performance and conformance values for Rolled Erosion Control Products (RECPs). Information within this document is presented to provide conformance values and recommended design values. Test results obtained for the Excel PP5-10 Turf Reinforcement Mat (TRM) and general design values are presented in Tables 1-4. For specific information detailing testing protocols, results and application of design values, refer to document number WE_EXCEL_PERF_GEN.

Test Results

Table 1 - Bench Scale Testing (NTPEP)

Test Method	Test Condition	Results	Units
ECTC Test Method 2 - Rainfall	2 in. per hour	4.84	Soil Loss Ratio
	4 in. per hour	6.15	
	6 in. per hour	7.82	
ECTC Test Method 3 - Shear Resistance	2.70 psf	0.5	Soil Loss (in.)
ECTC Test Method 4 - Germination	Top Soil, Fescue, 21 day Incubation	363	% Improvement

Table 2 - Texas Transportation Institute (TTI)

Rainfall Testing				Channelized Testing			
Class	Slope Gradient	Soil Type	Result	Class	90 Day Partially Vegetated Shear Stress Threshold	Result	
A	< 3H : 1V	Clay	Approved	E	2.0 lb/ft ²	Approved	
B	< 3H : 1V	Sand	Approved		F	4.0 lb/ft ²	Approved
C	> 3H : 1V	Clay	Approved		G	6.0 lb/ft ²	Approved
D	> 3H : 1V	Sand	Approved		H	8.0 lb/ft ²	Approved
					I	10.0 lb/ft ²	Approved
					J	12.0 lb/ft ²	N/A

Recommended Design Values

Table 3 - Unvegetated Design Values

Maximum Permissible Velocity*	Soil Loss
7.0 ft/s	0.5 inches
Maximum Permissible Shear Stress*	Soil Loss
2.3 lb/ft ²	0.5 inches
Resistance to Flow*	
HEC 15 Shear Relationship	Manning's n
0.6 lb/ft ² (Tau _{lower})	0.035
1.2 lb/ft ² (Tau _{mid})	0.028
2.3 lb/ft ² (Tau _{upper})	0.027
RUSLE Cover Factor*	Slope Gradient*
0.03	1 H : 1V

Table 4 - Vegetated Design Values

Maximum Permissible Shear Stress (lb/ft ²)	8.0
Maximum Permissible Velocity (ft/s)	12.0
C _{Fveg} /C _{FTRM} (Test Conditions)	0.32

*Recommended Design Values provided herein are based on results of standardized industry testing and may not be applicable for all field conditions. Values provided herein are intended for use with the state of the practice design procedures.

Document # WE_EXCEL_PP510_PERF. This document has been developed to provide information regarding the bench scale and/or performance testing conducted on the Excel PP5-10 TRM. For questions or installation recommendations, contact Western Excelsior Technical Services Division at 800-967-4009 or wexcotech@westernexcelsior.com. Updated 06/07.