



# Design Data and Test Results

## Excel PP5-8™



## Specifications

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 PP5-8 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.

Table 1 - Bench Scale Testing / NTPEP

Test Method	Condition	Result
ASTM D7101 Bench Scale Rainfall and Rainsplash Test	2 in per hour	3.32
	4 in per hour	3.81
	6 in per hour	6.63
ASTM D7207 Bench Scale Shear Resistance Test	2.1 psf (102 PA)	0.5 in (12 mm)
ASTM D7322 Bench Scale Vegetation Establishment Test	Top Soil, Fescue, 21 Day Incubation	599 %
NTPEP Report Number	ECP-2016-03-011	

Table 3 - Recommended Design Values\*

Design Value	Unvegetated	Vegetated
Typical RUSLE Cover Factor (C Factor)**	0.15	N/A
Maximum Slope Gradient (RUSLE)	2H : 1V	N/A
Max Allowable Velocity (0.5 in (12mm) soil loss)***	6.0 ft/s (1.8 m/s)	12.0 ft/s (3.7 m/s)
Max Allowable Shear Stress (0.5 in (12mm) soil loss)***	1.5 psf (72 PA)	8.0 psf (383 PA)
CF <sub>veg</sub> /CF <sub>TRM</sub>	N/A	0.45

\*\*C Factor value compliant with ASTM D6459. \*\*\* Shear Stress and Velocity values compliant with ASTM D6460.

Table 2 - Texas Transportation Institute (TTI) Results

Class	Test Condition	Result
A	< 3H:1 Clay Slope Test	N/A
B	< 3H:1 Sand Slope Test	Approved
C	> 3H:1 Clay Slope Test	N/A
D	> 3H:1 Sand Slope Test	N/A
E	2 psf Partially Vegetated Channel Test	Approved
F	4 psf Partially Vegetated Channel Test	Approved
G	6 psf Partially Vegetated Channel Test	Approved
H	8 psf Partially Vegetated Channel Test	Approved

Table 4 - HEC-15 Resistance to Flow Values

Design Value	Unvegetated
Manning's n @ Tau lower (0.4 psf (18 PA))	0.031
Manning's n @ Tau mid (0.8 psf (36 PA))	0.030
Manning's n @ Tau upper (1.5 psf (72 PA))	0.029

\*Recommended Design Values are based on results of standardized industry full-scale testing and may not be applicable for all field conditions. For most accurate computation of field performance, consult Excel Erosion Design (EED) at [www.westernexcelsior.com](http://www.westernexcelsior.com).

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