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Material and Performance Specification

ECS-2® Double Net Straw Rolled Erosion Control Product

Description:

The ECS-2® is made with uniformly distributed 100% agricultural straw and two polypropylene nets securely sewn together with degradable thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation.
The ECS-2® has functional longevity of approximately 12 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 2:1 or less and low to medium flow channels. The ECS-2® meets Type 2.D specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Matrix:	1	2
	100% Straw	

Netting:	Type	Net Color
Top:	Lightweight Photodegradable Polypropylene	Green
Middle:	None	
Bottom:	Lightweight Photodegradable Polypropylene	

Net Opening:	Top	Middle	Bottom
	0.5" x 0.5"		0.5" x 0.5"

Thread:	Type	Color
	Degradable Thread	White

Roll Sizes:	Standard	"A" Size	Mega
Width:	8 ft 2.4 m	4 ft 1.2 m	16 ft 4.9 m
Length:	112.5 ft 34.3 m	225 ft 68.6 m	112.5 ft 34.3 m
Weight*:	53 lbs 24.0 kg	53 lbs 24.0 kg	106 lbs 48.1 kg
Area:	100 yd^2 83.6 m^2	100 yd^2 83.6 m^2	200 yd^2 167.2 m^2
#/Pallet:	25	9	25

*Weight at time of manufacturing.

Index Value Properties*:

Property	Test Method	Typical	
Mass/Unit Area	ASTM D6475	8.50 oz/yd^2	288.2 g/m2
Thickness	ASTM D6525	0.32 in	8.13 mm
Tensile Strength-MD	ASTM D6818	150 lb/ft	2.19 kN/m
Elongation-MD	ASTM D6818	28 %	
Tensile Strength-TD	ASTM D6818	80 lb/ft	1.17 kN/m
Elongation-TD	ASTM D6818	29.4 %	
Light Penetration	ASTM D6567	19 %	
Density / Specific Gravity	ASTM D792	N/A g/cm^3	
Water Absorption	ASTM D1117	390 %	

*May differ depending upon raw material variations

Bench-Scale Testing* (NTPEP***):

Test Method	Parameters	Results
ECTC Method 2 Rainfall	50mm (2in) / hr-30 min	SLR**=5.84
	100mm (4in) / hr-30 min	SLR**=6.87
	150mm (6in) / hr-30 min	SLR**=8.09
ECTC Method 3 Shear Resistance	Shear at .50 in soil loss	1.61 lb/ft^2
ECTC Method 4 Germination	Top soil; Fescue; 21 day incubation	455 %

*Bench scale tests should not be used for design purposes.

**Soil Loss Ratio=Soil Loss Bare Soil/Soil Loss with RECP=1/C-Factor

***The preceding test data excerpts were reproduced with the permission of AASHTO, however, this does not constitute endorsement or approval of the product, material or device by AASHTO

Slope Performance Design Values*:

Property	Test Method		Value
C-Factors	ASTM D6459		0.01
Slope Length (L)	**≤ 3:1**	**3:1-2:1**	**≥ 2:1**
< 50 ft (15 m)	0.014	0.077	N/A
50 ft – 100 ft	0.048	0.084	N/A
>100 ft (30 m)	0.086	0.125	N/A

*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

Channel Performance Design Values*:

Property	Test Method	Value			
Unvegetated Shear Stress	ASTM D 6460	2.05	lbs/ft^2	98.15	Pa
Unvegetated Velocity	ASTM D 6460	7.5	ft/s	2.29	m/s
Vegetated Shear Stress	NA	N/A	lbs/ft^2	N/A	Pa
Vegetated Velocity	NA	N/A	ft/s	N/A	m/s
Manning's N (Value Represents a Range)			0.029		

*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

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