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## Material and Performance Specification

### ECC-3™ Coconut Turf Reinforcement Mat

#### Description:

The ECC-3™ is made with uniformly distributed 100% coconut fiber and three polypropylene nets securely sewn together with UV stabilized thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation. The ECC-3™ is a permanent turf reinforcement mat and is suitable for 1:1 slopes and high-flow channels.

| Matrix:      | 1   | 2                                       |  |
|--------------|---|---|--|
|              | 100% Coconut  |   |  |
| Netting:     | Type  | Net Color                               |  |
|              | Top: Medium weight 8# PMSF UV Stabilized Polypropylene    | Black                                   |  |
|              | Middle: Heavyweight 24# PMSF UV Stabilized Polypropylene  |   |  |
|              | Bottom: Medium weight 8# PMSF UV Stabilized Polypropylene |   |  |
| Net Opening: | Top   | Middle                                  | Bottom                                   |
|              | 0.5" x 0.5"   | 0.4" x 0.5"                             | 0.5" x 0.5"                              |
| Thread:      | Type  | Color                                   |  |
|              | UV Stabilized Thread                                      |   |  |
| 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:*     | 92 lbs 41.7 kg  | 92 lbs 41.7 kg                          | 184 lbs 83.5 kg                          |
| Area:        | 100 yd <sup>2</sup> 83.6 m <sup>2</sup>                   | 100 yd <sup>2</sup> 83.6 m <sup>2</sup> | 200 yd <sup>2</sup> 167.2 m <sup>2</sup> |
| #/Pallet:    | 9   | 4                                       | 9  |

\*Weight at time of manufacturing within specified tolerances.

#### Index Value Properties\*:

| Property                   | Test Method | Typical   |
|----------------------------|-------------|---|
| Mass/Unit Area             | ASTM D6566  | 13.25 oz/yd <sup>2</sup> 449.2 g/m <sup>2</sup> |
| Thickness                  | ASTM D6525  | 0.34 in 8.64 mm                                 |
| Tensile Strength-MD        | ASTM D6818  | 802 lb/ft 11.70 kN/m                            |
| Elongation-MD              | ASTM D6818  | 25 %  |
| Tensile Strength-TD        | ASTM D6818  | 643 lb/ft 9.38 kN/m                             |
| Elongation-TD              | ASTM D6818  | 15.7 %  |
| Light Penetration          | ASTM D6567  | 14 %  |
| Density / Specific Gravity | ASTM D792   | 0.888 g/cm <sup>3</sup>                         |
| Water Absorption           | ASTM D1117  | 113 %   |
| Resiliency                 | ASTM D6524  | N/A %   |
| UV Resistance              | ASTM D4355  | 98 % 1000 hours                                 |

\*May differ depending upon raw material variations

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

| Test Method                    | Parameters                          | Results                 |
|--------------------------------|-------------------------------------|-------------------------|
|                                | 50mm (2in) / hr-30 min              | SLR**=7.70              |
| ECTC Method 2 Rainfall         | 100mm (4in) / hr-30 min             | SLR**=10.43             |
|                                | 150mm (6in) / hr-30 min             | SLR**=14.18             |
| ECTC Method 3 Shear Resistance | Shear at .50 in soil loss           | 3.13 lb/ft <sup>2</sup> |
| ECTC Method 4 Germination      | Top soil; Fescue; 21 day incubation | 364 %                   |

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

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

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#### Slope Performance Design Values\*:

| Property                | Test Method  | Value          |              |
|-------------------------|--------------|----------------|--------------|
| <b>C-Factors</b>        | ASTM D6459   | 0.00           |              |
| <b>Slope Length (L)</b> | <b>≤ 3:1</b> | <b>3:1-2:1</b> | <b>≥ 2:1</b> |
| < 50 ft (15 m)          | 0.001        | 0.007          | 0.047        |
| 50 ft – 100 ft          | 0.008        | 0.015          | 0.069        |
| >100 ft (30 m)          | 0.027        | 0.050          | 0.089        |

\*Large-Scale Results obtained by 3<sup>rd</sup> Party GAI Accredited Independent Laboratory

#### Channel Performance Design Values\*:

| Property                               | Test Method | Value                              |
|--|-------------|------------------------------------|
| Unvegetated Shear Stress               | ASTM D 6460 | 3.20 lbs/ft <sup>2</sup> 153.22 Pa |
| Unvegetated Velocity                   | ASTM D 6460 | 11.5 ft/s 3.51 m/s                 |
| Vegetated Shear Stress                 | ASTM D 6460 | 12.0 lbs/ft <sup>2</sup> 574.56 Pa |
| Vegetated Velocity                     | ASTM D 6460 | 25.0 ft/s 7.62 m/s                 |
| Manning's N (Value Represents a Range) |             | 0.024                              |

\*Large-Scale Results obtained by 3<sup>rd</sup> Party GAI Accredited Independent Laboratory

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