



Carthage Mills Product Data

Geotextiles | Erosion Control | Geogrids | Geomembranes

ECS-2 Double Net Straw Rolled Erosion Control Product

The ECS-2 is an erosion control blanket 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 climate 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.

Materials: Netting – Top and Bottom

Lightweight Photodegradable Polypropylene
0.50" x 0.50" Opening
Color: Green

Matrix

100% Straw

Thread

Degradable Thread
Color: White

Roll Sizes:

| | Standard | "A" Size | Mega |
|---------------------|--|---|---|
| Width: | 8.0 ft (2.4 m) | 4 ft 1.2 m | 16.0 ft (4.9 m) |
| Length: | 112.5 ft (34.3 m) | 225 ft 68.6 m | 112.5 ft (34.3 m) |
| Weight $\pm 10\%$: | 53.0 lbs (24.0 kg) | 53 lbs 24.0 kg | 106.0 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 |

Index Value Properties*:

| Property | Test Method | Typical |
|---|-------------|--|
| Mass/Unit Area | ASTM D6475 | 8.50 oz/yd ² 288.2 g/m ² |
| Thickness | ASTM D6525 | .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 | | |

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 (15m) | 0.005 | 0.078 | N/A |
| | 50 ft – 100 ft | 0.020 | 0.079 | N/A |
| | > 100 ft (30 m) | 0.038 | 0.800 | N/A |
| *Large-Scale Results obtained by 3 rd Party GAI Accredited Independent Laboratory | | | | |

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 by AASHTO | | |

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 | NA |
| Vegetated Velocity | NA | NA |
| Manning's N | Calculated Range | 0.029 |
| *Large-Scale Results obtained by 3 rd Party GAI Accredited Independent Laboratory | | |

Effective 01/01/23

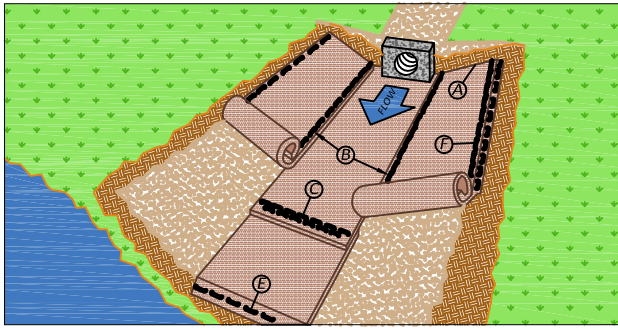
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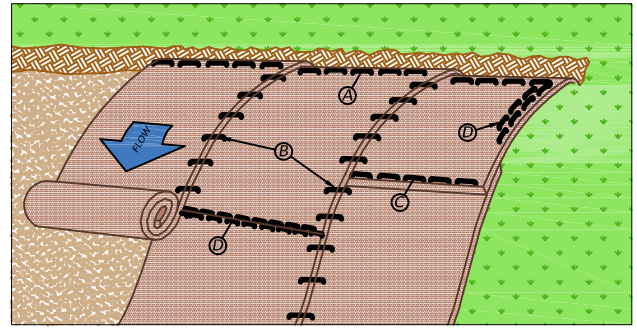
Channel Installation Detail



Channel Installation Instructions:

1. Dig a 6" by 6" trench both up-slope, down-slope, and along the top side of the channel. Prepare the slope soil surface (raking, seeding and fertilizing). Note, if used with stormwater discharge, place the up-slope trench at the face of the discharge structure footer.
2. Begin by placing the center blanket a minimum of 12" down-slope of the up-slope trench. Secure the blanket at the bottom of the trench with staples placed 12" apart. Backfill and compact the trench. Apply seed, and fold the blanket over soil, secure with a row of staples placed 12" apart across the width of the blanket (See Diagram A).
3. Roll the blanket vertically down the slope. Secure using the appropriate staple pattern below, specified by slope. (See Staple Patterns)
4. Continue placing blankets up the slopes on both sides, with a minimum 4" overlapping (Diagram B), and securing each blanket in the beginning trench (Diagram A).
5. Additional horizontal blankets can be joined using a minimum 4" overlapping or shingle style in the direction of water flow. Connect the blankets by placing staples approximately 5" apart across the width of the blankets. (Diagram C)
6. For maximum performance a check slot should be placed at 25'-40' intervals. Place a row of staples 4" apart along the entire width of the channel. A second row should be placed 4" below in a staggered pattern. (Diagram D)
7. The end of the blanket must be secured in a 6" x 6" trench by a row of staples placed at 12" intervals. (Diagram E)
8. At the top edge of the side slope, fasten the blanket in a 6" x 6" trench with staples placed at 12" intervals. Install an additional row of staples 1'-0" down slope of the trench along the width of the fabric. (Diagram F)

Slope Installation Detail



Slope Installation Guidelines:

These guidelines are recommendations only. Any questions with the installation should be confirmed with your local distributor.

1. Dig a 6" by 6" trench both up-slope and down-slope of the area the matting is to be applied. Prepare the slope soil surface (raking, seeding and fertilizing).
2. Begin by placing the blanket a minimum of 12" down-slope of the up-slope trench. Secure the blanket at the bottom of the trench with staples placed 12" apart. Backfill and compact the trench. Apply seed, and fold the blanket over soil, secure with a row of staples placed 12" apart across the width of the blanket. (See Diagram A)
3. Roll the blanket vertically down the slope. Secure using the appropriate staple pattern below, specified by slope. (See Staple Patterns)
4. Parallel blankets must be overlapped by a minimum of 4", and secured with a row of staples placed approximately 3'-0" apart. (See Diagram B)
5. Additional vertical blankets can be joined using a minimum 4" overlapping or shingle style (See Diagrams C) in the direction of water flow. Connect the blankets by placing staples approximately 12" apart across the width of the blankets.
6. For maximum performance a check slot should be placed at 25'-40' intervals. Place a row of staples 4" apart along the entire width of the slope. A second row should be placed 4" below in a staggered pattern. Then continue with general installation. (See Diagrams D)
7. The end of blanket must be secured in a 6" x 6" trench with a row of staples placed at 12" intervals. (Diagram E)

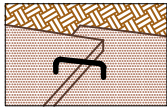


DIAGRAM B

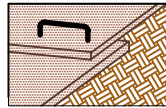


DIAGRAM C

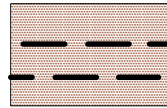


DIAGRAM D

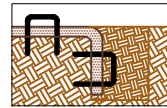
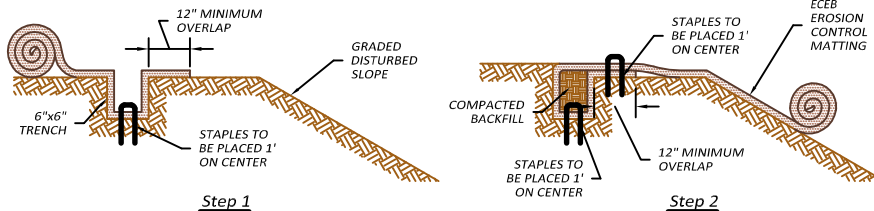


DIAGRAM E

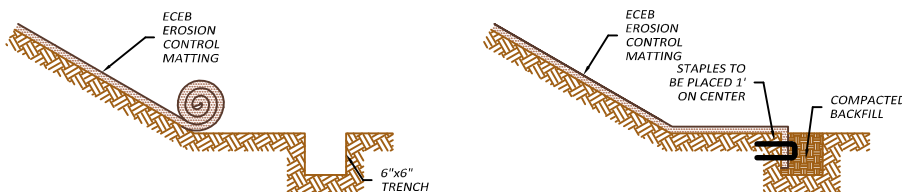
Up-slope Trench Installation Detail (Diagram A)



Step 1

Step 2

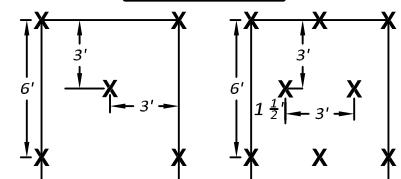
Down-slope Trench Installation Detail (Diagram E)



Step 1

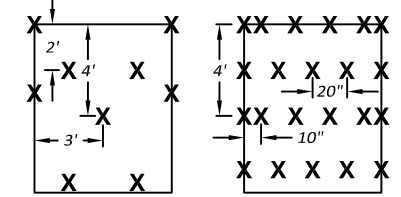
Step 2

Staple Patterns:



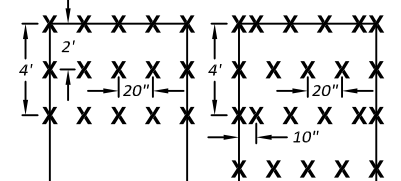
0.7 staples/yd²
4:1 SLOPES

1.2 staples/yd²
3:1 SLOPES



1.75 staples/yd²
2:1 SLOPES

3.8 staples/yd²
1:1 SLOPES



3.5 staples/yd²
MED. to HIGH
FLOW CHANNEL

3.8 staples/yd²
HIGH FLOW
CHANNEL