Stabilization of Slopes and other difficult sites

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filtrexx®
NORTHEAST SYSTEMS
Insanity: 
Doing the same thing over and over again and expecting different results.

Albert Einstein
The Ultimate Goal of Good Erosion Control?
Holistic Approach to Vegetation establishment

1. Understanding soil profile and organic content
   - Site conditions – elevations, exposure, timing & weather
   - Soil Test

2. Site Objectives and timing
   - Systems approach to meet objectives
     - Correct product and seed selection for stabilization and vegetation
     - Soil amendments

3. Proper site care during establishment
   - Realistic Expectations
   - Practical site maintenance
Choose the proper amendments for your site and soil conditions.
Proper soil preparation is critical for successful projects.
Slope Stabilization

Non Structural
Blankets
Hydraulically applied
mulches
Compost Blankets

Structural
MSE
Rolled Erosion Control Blankets
Different types for different applications
Slope erosion control
Channel protection
## BioNet Biodegradable ECBs

<table>
<thead>
<tr>
<th>BioNet</th>
<th>BioNet</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
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### C700BN

<table>
<thead>
<tr>
<th>Parameter</th>
<th>S75BN</th>
<th>S150BN</th>
<th>SL150BN</th>
<th>C125BN</th>
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<tr>
<td>Longevity</td>
<td>12 mo</td>
<td>12 mo</td>
<td>18 mo</td>
<td>24 mo</td>
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<td>Applications</td>
<td>Low Flow Channel</td>
<td>Moderate Flow Channel</td>
<td>Medium Flow Channel</td>
<td>High Flow Channel</td>
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<td>Design Permissible Shear Stress</td>
<td>Unvegetated 158</td>
<td>Unvegetated 165</td>
<td>Unvegetated 169</td>
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<tr>
<td>Design Permissible Velocity</td>
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<td>Unvegetated 47.5</td>
<td>Unvegetated 49.8</td>
<td>Unvegetated 54.8</td>
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Proper Blanket Installation Techniques
Installation Guidelines for RECPs

For blankets with the optional North American Green DOT System, place staples/stakes through each of the BLUE colored dots.

- 0.7 STAPLES PER SQ. YD. (0.6 STAPLES PER SQ. M)
- For blankets with the optional North American Green DOT System, place staples/stakes through each of the BLUE colored dots.

For blankets with the optional North American Green DOT System, place staples/stakes through each of the RED colored dots.

- 1.15 STAPLES PER SQ. YD. (1.35 STAPLES PER SQ. M)

For blankets with the optional North American Green DOT System, place staples/stakes through each of the GREEN colored dots.

- 1.7 STAPLES PER SQ. YD. (2.0 STAPLES PER SQ. M)

For blankets with the optional North American Green DOT System, place staples/stakes through each of the GREEN colored dots.

- 3.75 STAPLES PER SQ. YD. (4.5 STAPLES PER SQ. M)
Installation Tools

- BioStakes
- EcoStakes
- Wire Staples
- Rebar Staples
Rolled Erosion Control Blankets
Before and After
VMax Turf Reinforcement Mats

- Vmax Patented TRMs
  - 3-D corrugated permanent matting structure

- Composite TRMS for Hydraulic
- Flow areas
  - SC250
  - C350
  - P550

- Woven TRM for High-Tensile Strength areas
  - W3000

- Permanently reinforces & anchors roots & stems
- Enables vegetation use in severe applications
- Aesthetically pleasing
- Substantial cost savings compared to riprap or concrete
Installation Tools

Earth Anchors

EA400 – 300 lb pullout strength
EA680 – 1100 lb pullout strength
VMax C-TRMs
Channels
Installation Guidelines for RECPs

Shoreline
VMax C-TRMs
Hydraulically Applied Stabilization Techniques
Seeding Mulches

- Cellulose
- Cellulose / tack
- Blend
- Blend with tack
- Pelletized fiber
- Straw fiber
- Wood Fiber
- Wood with Tack

Erosion Control Mulches

- Stabilized Mulch Matrix (SMM)
- Bonded Fiber Matrix (BFM)
- Engineered Fiber Matrix (EFM)
- Fiber Reinforced Matrix (FRM)
Seeding Mulches

1500 lbs per acre
SLOPE INTERRUPTERS

tubular mesh products
for slope interruption

COMPOST SOXX

WATTLES

TERRA-TUBES®
Fiber Filtration Tubes
SLOPE INTERRUPTERS

FILTREXX SLOPE INTERRUPTION

DISTURBED AREA

12' MIN
1:1 MAX SLOPE

PROTECTED AREA

Vertical spacing is dependent on slope gradient.

Initial waste in a shallow trench (2-3 in deep).

Adjacent rails shall tightly abut.
Hydraulic products have their limitations but used with open weave TRM’s they use can be extended.

TRMS extend the Hydraulic limits of Natural Vegetation

Making Hard Armor’s Obsolete In Many Situations
Engineered Fiber Matrix

Unique to this technology:

Proprietary Dispersion Granules:
Ensure the chemistry is thoroughly mixed and uniformly distributed.
Effectively contribute to smooth, even shooting, which speeds application.

- Advanced Micro-Pore particles optimize water and nutrient retention.
- 100% recycled Thermally Refined® Wood fibers that not only produce the highest coverage per pound, they are also phyto-sanitized, eliminating weed seeds and pathogens.
- 100% biodegradable interlocking man-made crimped fibers to help increase strength and matrix durability.

100% non-toxic biopolymers and water absorbents further enhance performance.
• BFM performance
• Competitive price - SMM
• High loading, easy mixing, smooth shooting
• Environmentally safe

• Not a replacement for Flexterra HP!
New Technology Drives Higher Performance

Patented Combination of HP Components Generate More Benefit!
Enhanced Environmental Benefits

100% Biodegradable
- Including interlocking man-made fibers
- Verified via ASTM D5338 testing

100% Recycled Wood Fibers
- Verified via ISO 14021

100% non-toxic and safe for aquatic and terrestrial life
- Verified via EPA 2021.0 Testing

Phyto-Sanitized wood fibers (weed and pathogen free)
- Thermally refined process heats wood fibers to >380º F
SLOPE PROTECTION
SURFACE
Better Intimate contact with the Soil
Better soil and sediment management

Spray on Blankets
Rolled EC Blankets
Areal Seeding – Fire Restoration
Hydraulically in filled TRM’s can be a cost effective Alternative to Rip Rap or concrete
TRMs on Steroids!

Think this will grow grass?
CHANNEL PROTECTION

SURFACE
Adding Organics

Typical application rates of 4000 lbs per acre or more, to replace or enhance loam on site
SLOPE PROTECTION

SURFACE

36 TRUCKS OF TOPSOIL = 2 TANKLOADS OF PROGANICS

*Amount needed to cover 1 acre (0.4 ha) with 4 in (10 cm) of topsoil.

3,500–5,000 lb/acre = 3,900–5,600 kg/ha
*3,000-gallon capacity hydroseeder.
Soil amendment not Slope Protection

ProGanics™ Outperforms

ProGanics outperformed leading Biotic Soil Amendment (BSA) products in greenhouse trials.
Two inch Compost Blankets
Structural Slope Protection
Gabion walls
SOXX™ MAY BE FILLED WITH FILTREXX® FILTERMEDIA™ OR GROWINGMEDIA™, DEPENDING ON THE APPLICATION.
SLOPE PROTECTION
Benefits:

- Provides a structurally-stable retaining wall that minimizes erosion.
- Offers green solution & sustainable vegetation.
- Promotes infiltration of rain water through front fascia, reducing storm water runoff.
- Conforms to landscape contours.
- Not affected by differential settlement
Gravity II Option

TOPSOIL INFILL WITH VEGETATION

GEOWEB SECTION

150 mm or 6.0 in

INFILL

RETAINED SOIL

SUBDRAIN
Reinforced Wall Option
Filtrexx® GreenLoxx™ - Typical Vegetated MSE Design

Notes:
1. All materials to meet Filtrexx™ specifications.
2. FilterSoxx™ compost/soil/frac/seed fill to meet application requirements.
3. Vegetated and Native Backfill to be separated by non-woven Filtrexx®.
4. Backfill to be compacted as per Engineer's requirements.
5. Geogrid strength, length and horizontal spacing to be determined by qualified Engineer as per site requirements.
January
April
August
Thank You