

# NORTH AMERICAN GREEN

## SYSTEMS OVERVIEW





## We've Got You Covered

Erosion control, sediment control and vegetation establishment are essential to almost every construction project. A well planned solution tailored to your site can eliminate costly reconstruction of degraded slopes and shorelines; prevent damage to landscapes, water sources and wildlife; and keep you in compliance with local and federal regulations. The North American Green full line of erosion and sediment control solutions can help cover your bases.

### LET'S TALK TURNKEY

North American Green is the world's leading provider of turnkey, performance-guaranteed erosion control solutions. We can handle any erosion issues, whether your site needs short-term protection or permanent vegetation reinforcement. Our specialty construction products and engineering services ensure cost-effective solutions and exceptional results.

### UNMATCHED SERVICE AND SUPPORT

There are many erosion control product manufacturers out there, but none with our emphasis on customer service and technical know-how. Our interdisciplinary support team can assist with project design and product specification. Rather do it yourself? Our Erosion Control Materials Design Software® (ECMDS), the industry's first design software, allows for

self-guided cost-effective material selection and project planning.

### SPECIALISTS ARE STANDING BY

North American Green® Erosion Control Systems are sold exclusively through nearly 200 authorized distributors worldwide. Our Erosion Solutions Specialist program certifies our distributors and their sales representatives to design erosion control measures to help you comply with the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) and other industry regulations.

North American Green is a proud member of the Erosion Control Technology Council (ECTC) and the International Erosion Control Association (IECA).

## Yes, Erosion Control Matters

Construction usually means removing vegetation, altering the landscape and/or covering previously vegetated areas with roads, driveways or buildings. These changes often cause soil erosion and sediment deposits, which can lead to a multitude of problems.

### THE ENVIRONMENTAL TOLL

- ▶ Disrupting the ecosystem can hinder the natural resources on which wildlife depend for survival.
- ▶ Storm water runoff can increase stream bank erosion and disturb aquatic habitats and lifecycles.
- ▶ Construction site soils and chemicals can wash into water supplies and compromise water quality for humans and animals.

### THE ECONOMIC TOLL

- ▶ The costs to rebuild degraded slopes and shorelines and dredge sediment-filled waterways reach billions of dollars annually.
- ▶ The EPA's NPDES Phase II rule says anyone disturbing one acre or more of U.S. soil must have an NPDES permit and file a Storm Water Pollution Prevention Plan (SWPPP) with local authorities – or face hefty fines.

- ▶ Every Municipal Separate Storm Sewer System (MS4) operator must have a NPDES permit; without it, they're subject to penalties and legal action.
- ▶ EPA effluent (runoff) guidelines are based on the technology that reduces pollutants the most and is economically achievable for an industry. While the agency doesn't require facilities to install that technology, they do require the same performance.

### NOW FOR THE GOOD NEWS: PRACTICE MAKES PERFECT

With so much at stake, erosion control is a high priority. North American Green® Erosion and Sediment Control Systems are recognized as EPA Best Management Practices (BMPs) to help you comply with regulations and protect our (and your) most valuable resources.

Using North American Green Rolled and Hydraulic Erosion Control Products can help you reach your Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™ project certification goals. For more information, visit [nagreen.com](http://nagreen.com) or call **800-772-2040**.



From project start to finish, North American Green erosion and sediment control products will keep you protected until vegetation is established.



A well planned erosion control solution tailored to your site can eliminate costly reconstruction of degraded slopes.



Our full line of products offers a solution for nearly every erosion problem caused by wind and water.



North American Green Erosion Control Systems are recognized as EPA Best Management Practices (BMPs) that help you comply with regulations and protect valuable resources.



## You're on Solid Ground

"Cutting edge" isn't the first thing that comes to mind when you think of erosion control – but maybe it should be. North American Green has continually advanced erosion control science and developed a full line of high-tech products backed by an industry-leading guarantee.

### ALWAYS LOOKING AHEAD

The definition of proactive – *acting in advance to deal with an expected difficulty* – sums up our research and development philosophy. We conduct ongoing research at major universities and independent labs. We watch and listen to find out what customers need now and what you'll need next. We invest in innovation and product development to keep you ahead of erosion control issues with the most progressive solutions in the industry.

### TESTING 1, 2, 3

To guarantee North American Green Erosion Control Systems perform under actual field conditions, we subject them to rigorous, large-scale, performance tests. We're so confident in our products, we proudly subject them to independent testing by the National Transportation Product Evaluation Program (NTPEP) of the American Association of State Highway and Transportation Officials (AASHTO). In a recent test, our ShoreMax® Transition Mat combined with a VMax® Turf Reinforcement Mat underlayment pushed channel lining performance to an all-time high.



As our products protect the soil and seed, a fully vegetated project site is nearer than you think.

North American Green Rolled Erosion Control Products (RECPs) are also "performance verified" by QDOR (Quality Data Oversight and Review), a quality program developed by the Erosion Control Technology Council (ECTC) to raise the standard for performance testing.

### THE WHOLE NINE YARDS, GUARANTEED

Our Ultimate Assurance Guarantee is the most comprehensive in the industry. If any properly specified and installed North American Green® Rolled or Hydraulic Erosion Control Product designed by a qualified engineer or by one of our technical representatives in accordance with our Erosion Control Materials Design Software (ECMDS®) fails to perform under the conditions in the Guarantee, then we will replace the failed product with our next higher-performance RECP product, along with the cost of seed, fertilizer, topsoil and other amendments lost due to such product failure. Our Guarantee warrants in accordance with its terms and conditions all registered projects designed with the latest version of our ECMDS and properly installed.

North American Green Turf Reinforcement Mats are also guaranteed to reinforce vegetation for five years after installation, and the functional longevity of these products' permanent structures is warranted for a minimum of 10 years after installation, subject to the terms and conditions set forth in the Guarantee.



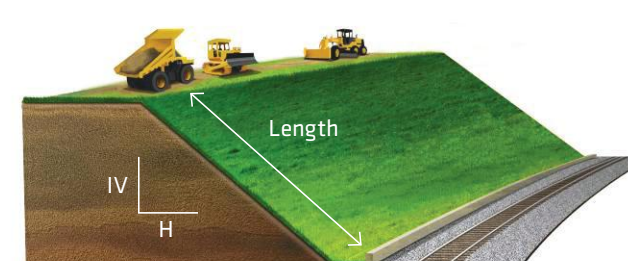
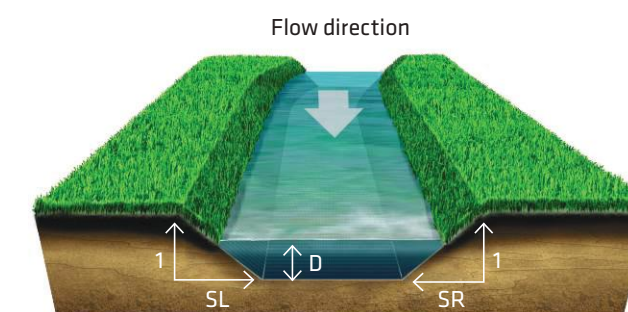
We continually advanced erosion control science and developed a full line of high-tech products backed by an industry-leading guarantee.

## Sometimes, the Best Advice Is Free

For more than three decades, engineers, designers and contractors looking for reliable erosion control solutions have turned to North American Green first. Not only do we deliver unmatched quality and a rock-solid guarantee, our powerful Erosion Control Materials Design Software® (ECMDS) ensures proper evaluation, design, product selection and project planning.

### TOOLS OF THE TRADE

ECMDS provides comprehensive site-specific erosion control analyses. Our sophisticated calculations help you develop sustainable soil protection and vegetation establishment plans. All recommendations are based on data from controlled laboratory and field research involving erosion control blankets, turf reinforcement mats, hydraulic erosion control products, and transition mats.



The channel and slope design modules are only two of the design options available in ECMDS Software.

### DESIGN AND COMPLY

ECMDS is a must-have, especially if you face tough erosion and sediment control regulations. Product design recommendations are based on test data from one or more of these facilities: TRI/Environmental Inc, Texas Transportation Institute, San Diego State University, Utah State University and/or Colorado State University. ECMDS product recommendations are based on time-tested design protocol developed by the USDA and FHWA.

### READY WHEN YOU ARE

ECMDS is web-based for easy access from your desktop, laptop, smart phone or notebook. And, best of all, it's completely free of charge. To learn more and access the software directly, go to [www.ECMD5.com](http://www.ECMD5.com).

### HOLD YOUR GROUND

We have top-quality solutions for every erosion control need. Our products are rigorously tested and proven effective for a wide range of real-world applications including:

- ▶ Slopes and embankments
- ▶ Landfills
- ▶ Shorelines
- ▶ Ditches and culvert outfalls
- ▶ Levees and earthen dams
- ▶ Channels and spillways
- ▶ Wetlands
- ▶ Bioengineering
- ▶ Golf courses
- ▶ Residential developments
- ▶ Military bases

## Erosion Control Systems



Every site has unique challenges created by soil characteristics, topography, climate and other environmental conditions. The RollMax™ System Rolled Erosion Control Products (RECPs) conquer all your site challenges. Whether you need temporary or permanent protection, short-term or long-term durability, biodegradable or photodegradable solutions, our RollMax RECPs deliver a wide variety of advantages, features and benefits:

- ▶ High-performance protection of topsoil from wind and water erosion
- ▶ Support quick, healthy vegetation growth
- ▶ Protect dormant seeds during winter months
- ▶ Stabilize slope erosion to keep roads safe and clean
- ▶ Reinforce vegetation roots and stems
- ▶ Protect water quality in lakes, rivers and streams
- ▶ Conform to landscape features
- ▶ Provide easy handling and transport

### PERMANENT TURF REINFORCEMENT MATS

The RollMax System of permanent Turf Reinforcement Mats (TRMs) are ideal for high-flow channels, stream banks, shorelines and other areas needing permanent vegetation reinforcement and protection from water and wind. More economical and aesthetically pleasing than rock riprap, articulated concrete blocks or poured concrete, our TRMs protect vulnerable areas with minimum maintenance and maximum durability.

### VMAX® TURF REINFORCEMENT MATS

- ▶ VMax® Permanent Composite TRMs combine three-dimensional matting and fiber matrix material for all-out erosion protection, vegetation establishment and reinforcement. These products increase the permissible shear stress of many types of vegetation up to 14 pounds per square foot (0.67kN/m<sup>2</sup>) – erosion protection equal to 36 in. (900 mm) rock riprap and concrete. VMax TRMs are available with various performance capabilities and support reinforced vegetative lining development from germination to maturity.



**GO Transit, Greater Toronto, Ontario, Canada**

During construction on a Toronto commuter rail system, a steep railway embankment required stabilization to protect a nearby pond from sediment runoff. North American Green® VMax® Permanent Composite SC250® TRMs were installed to prevent surface erosion and promote vegetation re-establishment.



**Mary Creek, Archbold Biological Reserve, Central Florida**

When earthwork to realign and protect the eroding Mary Creek failed after a major storm, it was determined the creek had to be armored to prevent major erosion. Our high-performance Turf Reinforcement Mats installed with our Earth Anchors provided a soft armor solution for permanent soil protection and vegetation reinforcement.



**Yellowstone National Park, near Cody, Wyoming**

Reconstruction of Highway 14 near Yellowstone created bare, dry rocky exposed slopes requiring erosion protection. North American Green® BioNet® SC150BN™ biodegradable erosion control blanket was selected for its extended longevity and ecological friendliness. Native vegetation was established within one growing season, preserving the natural aesthetics and preventing pollution of the nearby river.



**Green Hills Tributary Improvement, Eugene, Oregon**

Improvements along the streambanks were needed to improve drainage and flood control for the City of Eugene, Oregon. North American Green® BioNet® C125BN™ provided ample protection of the soil so the groundcover could be established on the slopes and the native grasses and vegetation could take root.

- ▶ VMax® High-Performance TRMs (HPTRMs) utilize patent-pending woven 3-D structures that are soil-filled for use in areas experiencing high stress and strain. The VMax HPTRMs are designed to provide appropriate thickness and open area for effective erosion and vegetation reinforcement against high flow induced shear forces up to 16psf (0.77 kN/m<sup>2</sup>), and with the highest tensile strength on the market up to 5,000 lbs/ft (73 kN/m) our HPTRMs are excellent for increased bearing capacity of vegetated soils subjected to heavy loads from maintenance equipment and other vehicular traffic.

### EROSION CONTROL BLANKETS

North American Green Erosion Control Blankets (ECBs) immediately prevent erosion and help establish vegetation. As vegetation takes root and stem systems stabilize the underlying soil, most ECBs gradually degrade. These products come in a range of weights and materials to accommodate low- to high-flow channels and moderate to severe slopes.

### ERONET™ PHOTODEGRADABLE ECBs

- ▶ EroNet™ Short-Term Photodegradable ECBs are designed for moderate slopes and low-flow channels. Made of 100% agricultural straw stitched to or between lightweight polypropylene netting with degradable thread, EroNet

- ▶ EroNet™ Extended-Term, Long-Term and permanent ECBs use heavy-duty double-netting and long-lasting coconut or permanent polypropylene fiber for protection and vegetation support for up to 36 months or longer. These products are available for extended- and long-term stabilization of steep slopes, medium- to high-flow channels and shorelines.



### BIONET® BIODEGRADABLE ECBs

- ▶ BioNet® Short-Term Biodegradable ECBs are appropriate for bioengineering projects, environmentally sensitive sites, shaded areas, stream banks and shorelines. They're made of 100% agricultural straw stitched with biodegradable thread to 100% biodegradable jute fiber netting. Available in single- or double-net varieties, they protect for up to 12 months and leave no synthetic residues.
- ▶ BioNet® Extended-Term and Long-Term Biodegradable ECBs incorporate coconut fiber stitched with biodegradable thread between biodegradable jute fiber top and bottom nets. Great for steep slopes, medium- to high-flow channels and shorelines, a choice of two products provides erosion protection and vegetation establishment for 18 to 24 months.

# RollMax Product Selection Chart



TEMPORARY					
Product Description	Longevity	Applications	Design Permissible Shear Stress lbs/ft <sup>2</sup> (Pa)	Design Permissible Velocity ft/s (m/s)	
<b>ERONET</b>					
 DS75 1.5 lb., accelerated photodegradable, polypropylene top net, 100% straw fiber matrix	45 days	Low Flow Channels 4:1 - 3:1 Slopes	Unvegetated 1.55 (74)	Unvegetated 5.0 (1.52)	
 DS150 1.5 lb., photodegradable, polypropylene top & bottom net, 100% straw fiber matrix	60 days	Moderate Flow Channels 3:1 - 2:1 Slopes	Unvegetated 1.75 (84)	Unvegetated 6.0 (1.83)	
 S75 1.5 lb., photodegradable, polypropylene top net, 100% straw fiber matrix	12 months	Low Flow Channels 4:1 - 3:1 Slopes	Unvegetated 1.55 (74)	Unvegetated 5.0 (1.52)	
 S150 1.5 lb., photodegradable, polypropylene top & bottom net, 100% straw fiber matrix	12 months	Moderate Flow Channels 3:1 - 2:1 Slopes	Unvegetated 1.75 (84)	Unvegetated 6.0 (1.83)	
 SC150 2.9 lb., UV-stable polypropylene top net, 70% straw/30% coconut fiber matrix, 1.5 lb., photodegradable polypropylene bottom net	24 months	Medium Flow Channels 2:1 - 1:1 Slopes	Unvegetated 2.0 (96)	Unvegetated 8.0 (2.44)	
 C125 2.9 lb., UV stable polypropylene top & bottom nets, 100% coconut fiber matrix	36 months	High Flow Channels 1:1 and Greater Slopes	Unvegetated 2.25 (108)	Unvegetated 10.0 (3.05)	
<b>BIONET</b>					
 S75BN 9.3 lb., leno woven biodegradable jute top net, 100% straw fiber matrix	12 months	Low Flow Channels 4:1 - 3:1 Slopes	Unvegetated 1.60 (76)	Unvegetated 5.0 (1.52)	
 S150BN 9.3 lb., leno woven biodegradable jute top net, 100% straw fiber matrix, 7.7 lb., woven biodegradable jute bottom net	12 months	Moderate Flow Channels 3:1 - 2:1 Slopes	Unvegetated 1.85 (88)	Unvegetated 6.0 (1.83)	
 SC150BN 9.3 lb., leno woven biodegradable jute top net, 70% straw/30% coconut fiber matrix, 7.7 lb., woven biodegradable jute bottom net	18 months	Medium Flow Channels 2:1 - 1:1 Slopes	Unvegetated 2.10 (100)	Unvegetated 8.0 (2.44)	

TEMPORARY					
Product Description	Longevity	Applications	Design Permissible Shear Stress lbs/ft <sup>2</sup> (Pa)	Design Permissible Velocity ft/s (m/s)	
<b>BIONET CONT'D</b>					
 C125BN 9.3 lb., leno woven biodegradable jute top net, 100% coconut fiber matrix, 7.7 lb., woven biodegradable jute bottom net	24 mo.	High Flow Channels 1:1 and Greater Slopes	Unvegetated 2.35 (112)	Unvegetated 10.0 (3.05)	
 C700BN 143 lb., (700 g) woven biodegradable coir top net, 100% coconut fiber matrix, 7.7 lb., woven biodegradable jute bottom net	36 mo.	High Flow Channels 1:1 and Greater Slopes	Unvegetated 2.35 (112)	Unvegetated 10.0 (3.05)	
<b>PERMANENT</b>					
<b>ERONET</b>					
 P300 5.0 lb., UV-stable polypropylene top net, 100% polypropylene fiber matrix, 3.0 lb., UV-stable polypropylene bottom net	Permanent	High Flow Channels 1:1 Slopes	Unvegetated 3.0 (144) Vegetated 8.0 (383)	Unvegetated 9.0 (2.7) Vegetated 16.0 (4.9)	
<b>VMAX</b>					
 SC250 5.0 lb., UV-stable polypropylene top & bottom nets, 24.0 lb., UV-stable polypropylene corrugated center net, 70% straw/30% coconut fiber matrix	Permanent	High Flow Channels 1:1 and Greater Slopes	Unvegetated 3.0 (144) Vegetated 10.0 (480)	Unvegetated 9.5 (2.9) Vegetated 15.0 (4.6)	
 C350 8.0 lb., UV-stable polypropylene top & bottom nets, 24.0 lb., UV-stable polypropylene corrugated center net, 100% coconut fiber matrix	Permanent	High Flow Channels 1:1 and Greater Slopes	Unvegetated 3.2 (153) Vegetated 12.0 (576)	Unvegetated 10.5 (3.2) Vegetated 20.0 (6.0)	
 P550 24.0 lb., UV-stable polypropylene top & bottom nets, 24.0 lb., UV-stable polypropylene corrugated center net, 100% polypropylene fiber matrix	Permanent	Extreme High Flow Channels 1:1 and Greater Slopes	Unvegetated 4.0 (191) Vegetated 14.0 (672)	Unvegetated 12.5 (3.8) Vegetated 25.0 (7.6)	
 TMax 100% UV-stable polypropylene monofilament yarns, woven into a 3-D structure	Permanent	Extreme High Flow Channels 1:1 and Greater Slopes	Vegetated 15.0 (718)	Vegetated 25.0 (7.6)	
 W3000 100% UV-stable polypropylene monofilament yarns, woven into a 3-D structure	Permanent	Extreme High Flow Channels 1:1 and Greater Slopes	Vegetated 16.0 (766)	Vegetated 25.0 (7.6)	



Hydraulic Erosion Control Products (HECPs) prevent erosion and aid vegetation establishment on slopes. The North American Green® HydraMax™ System enables the application of seed, soil amendments and hydraulic mulch in one step, offering a low-cost, low-labor solution. All HydraMax System products are made with our patented blend of straw, reclaimed cotton plant material and tackifiers to ease application, enhance adhesion, retain moisture and stabilize soil. HydraMax™ HECPs also:

- ▶ Consist of a porous matrix with strong soil adhesion that forms vegetation establishment and erosion control medium
- ▶ Reduce expensive site preparation
- ▶ Can be installed three times faster than erosion control blankets with 1/3 of the labor costs
- ▶ Come in easy-to-break bales for fast mixing
- ▶ Have low water-to-mulch ratios that increase productivity by requiring fewer tank loads per site
- ▶ Grow grass quickly with increased germination and biomass production over bare soil
- ▶ Are non-toxic per EPA guidelines
- ▶ Contain only biodegradable, non-synthetic fibers

- ▶ Come in a pleasing natural green color
- ▶ Help you comply with Environmental Protection Agency (EPA) effluent guidelines without treating water with flocculants or advanced water treatment systems
- ▶ Help you earn points toward Leadership in Energy and Environmental Design (LEED) Green Building Rating System project certification goals

### HIGH-PERFORMANCE HECPs

Our high-performance HECPs are effective on construction site slopes with gradients of 1:1 (H:V) or steeper.

- ▶ North American Green® HydraCX® Extreme Slope Matrix is used for long-length, steep to severe slope gradients of 3:1 to 0.5:1. It is our highest performing hydraulic mulch and has an unprecedented 100% soil protection in American Association of State Highway and Transportation Officials (AASHTO)-National Transportation Product Evaluation Program (NTPEP) testing.
- ▶ North American Green® HydraCM® Steep Slope Matrix scored 99.7% effective in reducing soil erosion when tested by AASHTO's NTPEP. Designed for medium-length, moderate to steep slope gradients of 4:1 to 1:1.



The application of our HydraMax Hydraulic Mulches will work with a wide range of mechanically agitated hydroseeding equipment, and the decreased water-to-mulch mixing ratio will get your job done faster.



The North American Green HydraMax System can be installed three times faster than erosion control blankets with 1/3 of the labor costs.

### STANDARD PERFORMANCE HECPs

HydraMax standard HECPs for mild to moderate slopes are excellent alternatives to wood and/or paper mulch and blown straw, which may take two steps to apply.

- ▶ North American Green® HydraGT™ Moderate Slope Mulch Blend with Tack is ideal for short slopes with up to 2:1 gradients.
- ▶ North American Green® HydraGS® Mild Slope Mulch Blend works best on short slopes with up to 3:1 gradients.

### READY, AIM, INSTALL

Our instruction guide for applying HydraMax™ System products details substrate and seedbed preparation, installation, mixing, product application, equipment cleaning and protection recommendations. A comprehensive loading chart also ensures the correct amount of material for application on your site.



#### Alabama Department of Transportation

During a highway widening construction project on Interstate I-65, the Alabama DOT needed to protect many newly graded slopes from erosion. The HydraMax System HydraCX Extreme Slope Matrix was chosen for the steep slopes. Vegetation started germinating within a week of application resulting in unprecedented vegetation that even had motorists complimenting ALDOT.

HydraCX® Extreme Slope Matrix	
Slope Conditions	Application Rate
≥1H:1V	4,500 lbs/acre (5,100 kg/ha)
≥2H:1V and <1H:1V	4,000 lbs/acre (4,500 kg/ha)
≥3H:1V and <2H:1V	3,500 lbs/acre (3,900 kg/ha)
<3H:1V	3,000 lbs/acre (3,400 kg/ha)

HydraCM® Steep Slope Matrix	
Slope Conditions	Application Rate
≥2H:1V	4,000 lbs/acre (4,500 kg/ha)
≥3H:1V and <2H:1V	3,500 lbs/acre (3,900 kg/ha)
≥4H:1V and <3H:1V	3,000 lbs/acre (3,400 kg/ha)
<4H:1V	2,500 lbs/acre (2,800 kg/ha)

HydraGT™ Moderate Slope Mulch Blend with Tack		
Slope Conditions	Typical Application Rates	
	Rate (English)	Rate (Metric)
>3:1 and <2.5:1	2,000 lbs/acre	2,800 kg/ha
>4:1 ≤3:1	2,000 lbs/acre	2,250 kg/ha
≤4:1	1,500 lbs/acre	1,700 kg/ha

HydraGS® Mild Slope Mulch Blend		
Slope Conditions	Typical Application Rates	
	Rate (English)	Rate (Metric)
>4:1 ≤3:1	2,000 lbs/acre	2,250 kg/ha
≤4:1	1,500 lbs/acre	1,700 kg/ha



#### Christ the King Cathedral School, Lubbock, Texas

The new site of the school's practice football field had to be completed and fully vegetated before football season a few months away. To prevent soil erosion and establish vegetation quickly, the design team applied our HydraCM Steep Slope Matrix HECP. Despite heavy rains two days later, the field showed no signs of erosion or rilling and vegetation grew within days. The field could be mowed just two weeks after application.



Flexible revetment mats provide cost-effective erosion protection from turbulent water flow and moderate wave attack. North American Green® RevetMax™ System is ideal for applications where riprap, articulated concrete blocks or other rigid materials are normally used. When combined with a Turf Reinforcement Mat (TRM) or other underlayment, this unique armoring solution dramatically elevates permissible shear stress and velocity protection. The RevetMax System products:

- ▶ Install easily over difficult topography and are highly flexible
- ▶ Prevent floating or uplifting in submerged conditions due to their non-buoyancy
- ▶ Feature grip lugs that bite into underlying surfaces to prevent shifting

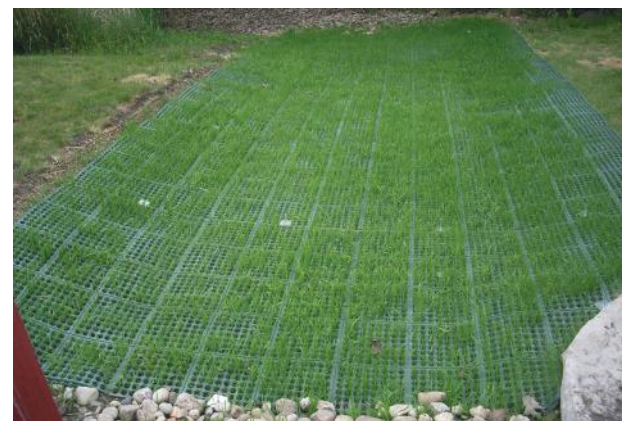
- ▶ Facilitate vegetation growth through voids in the mat
- ▶ Require no heavy equipment for installation
- ▶ Easily maintained
- ▶ Safer for pedestrian and vehicle traffic than hard armor materials

#### SHOREMAX® TRANSITION MATS

Flexible, UV-stabilized RevetMax System® ShoreMax® Transition Mats protect highly erosive areas such as shoreline transition zones, channel bottoms and pipe outlets and outfalls. Our ShoreMax Mat can be used for slope drains in parking lots, roadways, mines and landfills. The RevetMax System ShoreMax Mat can provide soft armoring on shorelines and spillway applications where wave attack can reach critical stages.



The RevetMax System ShoreMax Transition Mat is a smart option to replace rock in high scour areas such as pipe outlets.



The RevetMax ShoreMax Transition Mat help vegetation growth through voids in the mat.

ShoreMax is the industry's first scour protection mat to post unvegetated performance values in American Association of State Highway and Transportation Officials (AASHTO)-National Transportation Product Evaluation Program (NTPEP) large-scale channel testing. Results showed an unvegetated ShoreMax Mat combined with a VMax® P550® TRM underlayment can withstand flow-induced shear stresses of 8.6 pounds per square foot (0.40kN/m<sup>2</sup>) and velocities up to 19.5 ft per second (5.9m/s). This level of performance exceeds that of a full mature stand of vegetation.

#### SIMPLE TO INSTALL

Installation of the ShoreMax mat can be done simply and without the need for expensive equipment. The ShoreMax mat and TRM underlayment are simply installed over a prepared seeded soil and fastened into place with fasteners.

The flexibility of the ShoreMax mats allows them to be easily installed with a variety of fasteners such as the ShoreMax stake, wire staples, rebar staples, and percussion earth anchors. Since the ShoreMax mat easily self-conforms to the underlying terrain, fasteners are not required to force conformance with the underlayment materials – they only serve to hold the panels in place. Therefore, special percussion earth anchors are typically not required. They type and size of the fastener used is dependent upon the underlying soil and degree of compaction.

For details on fastener selection, stapling patterns, and installation details refer to the RevetMax Installation guide. For site-specific recommendation use the Erosion Control Materials Design Software (ECMDS) for help in selection a RevetMax System and fastening details. Visit [www.ECMDS.com](http://www.ECMDS.com) for more information.



#### Recreational Lake, Tampa, Florida

The wind and waves from boats and other marine vehicles took a toll on the shorelines of a recreational lake. To combat further erosion, the ShoreMax Transition Mat was installed over high-tensile strength TRMs. Together, they protected the shore and offered low maintenance, easy entry for pedestrians and safe small boat launches.



#### Dry Creek, Healdsburg, California

Storm water runoff from an old sand and gravel yard threatened Dry Creek, a spawning area for steelhead trout and Coho salmon. Typically, a shelf would be built 40 ft (12 m) above the water, and 24-30 in. (600-800 mm) riprap installed to reduce storm water impact. Officials, concerned the rock could be undermined and end up in the creek, decided to find another solution. After the ground was graded, seeded and covered with North American Green® BioNet® C125™ Erosion Control Blanket (ECB), our ShoreMax Transition Mat was placed on top. Within four months, vegetation had grown in and there was no displacement, despite above-normal rainfall.



Unprotected topsoil, particularly on slopes and construction sites, is vulnerable to erosion and runoff problems. Significant damage can occur until these areas are ready for permanent erosion control. The SediMax™ System can help prevent such damage and save millions spent on restoring slopes, rebuilding drainage channels and dredging ponds and streams.

### SEDIMAX-FR™ FILTRATION ROLLS

North American Green® SediMax-FR™ (Filtration Rolls) create a temporary, three-dimensional sediment filtration structure perfect for forest fire rehabilitation, bioengineering projects, construction sites, ski slopes, wetland mitigation and other applications where storm water runoff is a concern. The 100% biodegradable product is made with a 70% straw and 30% coconut-fiber matrix reinforced with biodegradable netting rolled edge to edge. Other important benefits include:

- ▶ Up to 98% effective at reducing sediment migration
- ▶ 100% biodegradable
- ▶ Assists with environmental regulation compliance
- ▶ Helps earn points toward Leadership in Energy and Environmental Design® (LEED) Green Building Rating System™ project certification goals



Roanoke, Virginia

Along the roadside of a construction site, North American Green® VMax® C350® composite Turf Reinforcement Mat (TRM) and North American Green® BioNet® S150™ Erosion Control Blanket (ECB) protected the nearby channels from erosion, filtered sediment and aided vegetation establishment.

- ▶ Can be incorporated with live planting, live staking and seeding
- ▶ Encasement net flexibility minimizes accidental wildlife entrapment

### SEDIMAX-SW™ STRAW WATTLES

North American Green® SediMax-SW™ (Straw Wattles) are economical alternatives to silt fence and straw bales for sediment control and storm water runoff. They can be staked along the contour of newly constructed or disturbed slopes, wrapped around storm drain inlets and used as check dams on slopes and in swales and grass waterways. Straw wattles are recycled, compressed, agricultural straw cylinders wrapped in photodegradable synthetic netting.

### INSTALLATION: ON A ROLL

Our SediMax System products are a snap to install. SediMax-FR are positioned, rolled out, re-rolled from edge to edge, and secured with wooden stakes; SediMax-SW are laid out, staked and can be used individually or tied together to achieve any length.



Wenatchee National Forest, Chelan, Washington

After a forest fire in Wenatchee National Forest, the SediMax System SediMax-FR was used to trap silty, ashy soil while allowing water to pass through, greatly reducing soil migration into waterways.

## Installation Made Easy

Choosing the right solution is half the battle against costly erosion. The other half is proper installation. We provide all the tools and instructions you need for quick, effective RECP installation tailored to your site.

- ▶ North American Green® Earth Anchors™ increase the veneer's mechanical strength by reaching deep into the soil strata for enhanced anchoring in the worst conditions. Earth Anchors can be used to permanently secure VMax® Turf Reinforcement Mats or RevetMax™ Flexible Revetment System products.
- ▶ Our fastener options include wire staples, the PinPounder installation tool, rebar stakes, ShoreMax® high-impact plastic stakes, environmentally friendly North American Green® BioSTAKES® and our wooden EcoSTAKES®.

Proper staple patterns must be used to achieve optimal results in RECP installation. We recommend the following general stapling patterns as guidance for use with our RECPs as seen in the illustration below (Figure 1). Site specific staple

pattern recommendations based on soil type and severity of application may be acquired through North American Green® Erosion Control Materials Design Software (ECMDS®). Consult the full system of Installation Guides for complete installation instructions.

### EXPERIENCE YOU CAN RELY ON

North American Green is the industry leader in providing comprehensive erosion and sediment control and turf reinforcement solutions. Our integrated systems and products were developed to ensure absolute customer satisfaction. Our products are backed by the most thorough quality assurance practices in the industry. And, we provide comprehensive design assistance for all of our systems.

For more information about North American Green Erosion Control Systems, visit [nagreen.com](http://nagreen.com), e-mail [customerservice-nag@nagreen.com](mailto:customerservice-nag@nagreen.com) or call **800-772-2040**. We are happy to assist you in developing solutions for all of your erosion and sediment control and turf reinforcement projects.

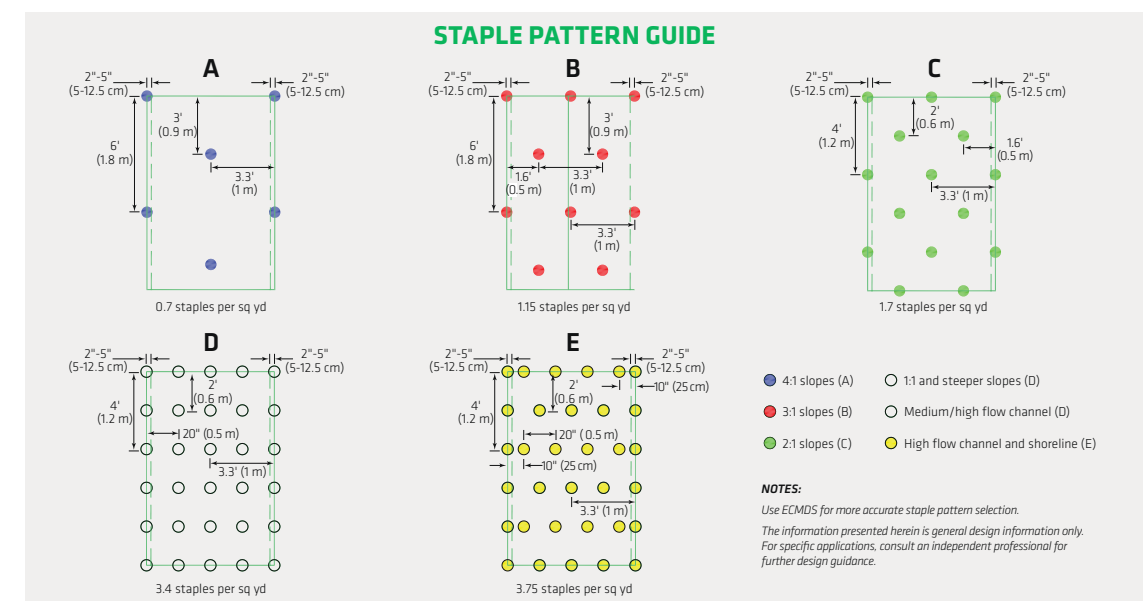


FIGURE 1





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