

ShoreMax™

Soft Revetment Scour Protection Mat

Design and Installation Guidelines

Intro to ShoreMax™ Mat

ShoreMax™ mats are an integrated erosion and sediment control system designed for protection of high scour and high velocity applications. The flexible scour mat can be used in varying applications and can replace hard-armor designs with “green” vegetated designs.

To create the maximum vegetated design, we suggest combining two high-performance erosion control products, the ShoreMax™ Mat and a Vmax³™ turf reinforcement mat (TRM). The Vmax³ TRM’s special structural design anchors and reinforces the roots and stems of vegetation for long-term stability, and helps create a shear plane that actually deflects the flowing water away from the soil surface. The patent-pending soft revetment scour protection, ShoreMax™ mat, is interlocked into the Vmax³ TRM. The ShoreMax™ mat provides mechanical protection and ballasting to the protected area and can increase the immediate permissible shear stress capabilities of the system.

Depending on your project design needs, North American Green offers three different Vmax³ turf reinforcement mat that can be used with the ShoreMax™ mat to create vegetated armor systems that offer increasing performance. With the SC250, C350, and P550 TRMs there is sure to be a solution that will offer the performance your site needs.

In place the ShoreMax™ mat offers protection comparable to hard armor products such as rock riprap and articulated concrete blocks in turbulent flow and wave attack applications. The ShoreMax™ mat can take your high flow projects to the maximum in green vegetated design.

Features of ShoreMax™ Soft Revetment / Scour Protection Mat

The ShoreMax™ mat is the first flexible soft revetment scour protection system that easily installs over difficult soil topography, and does not require expensive earth anchors to install. The system is non-buoyant so it won’t float or uplift in submerged and heavy flow conditions. The ShoreMax mat is designed with “grip lugs” that bite into the underlying Vmax³ mat that prevent horizontal shifting between the components of the ShoreMax™ system.

Since the ShoreMax™ mat is a soft armored vegetated green design solution, it requires no heavy equipment to install; long-term it has easier maintenance, and offers greater safety for vehicle and pedestrian traffic. The vegetated design also increases water infiltration and water filtration resulting in reduced and cleaner storm water runoff.

Key Applications

The ShoreMax™ mat is designed for immediate to long-term protection for high scour applications such as head-to-tail protection of drainage channels, culvert and pipe outfalls, and steep chute and slope drains like those associated with parking lots, roadways, mines, and landfills. The scour protection mat can also offer effective erosion and sediment control to create soft revetment systems. The ShoreMax™ mat can be utilized for shorelines, streambanks, and spillway applications where wave attack can reach the super critical stage.

For more information contact North American Green or your authorized distributor today by calling (800) 772-2040, emailing customerservice@nagreen.com or visiting www.nagreen.com.



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Design Guidelines

The ShoreMax™ mat has been evaluated for its performance in both channel and wave attack applications, resulting in the

ShoreMax™ Soft Revetment / Scour Protection Mat Design Criteria

Underlayment Type and Phase		Maximum Permissible Shear Stress	Maximum Flow Velocity	Maximum Wave Attack Applications		
SC250	Unvegetated	7.5 lbs/ft ²	18 ft/s	6 in wave height, ≤ 4:1 slope	12 in wave height, ≤ 5:1 slope	NA
	Vegetated	10 lbs/ft ²	18 ft/s			
C350	Unvegetated	8.0 lbs/ft ²	19 ft/s	6 in wave height, ≤ 3:1 slope	12 in wave height, ≤ 4:1 slope	NA
	Vegetated	12 lbs/ft ²	20 ft/s			
P550	Unvegetated	8.5 lbs/ft ²	19.5 ft/s	6 in wave height, ≤ 2:1 slope	12 in wave height, ≤ 3:1 slope	18 in wave height, ≤ 5:1 slope
	Vegetated	14 lbs/ft ²	25 ft/s			

following design guidelines.

ShoreMax™ Mat Installation Guidelines

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 anchors.

The flexibility of the ShoreMax™ mats allows them to be easily installed with a variety of fasteners such as 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 material – they only serve to hold the panels in place. Therefore, special percussion earth anchors are typically not required. The type and size of fastener used is simply dependent upon the underlying soil and degree of compaction.

Anchoring patterns for the ShoreMax™ mat will vary depending on the project applications with increased anchoring patterns required for higher flow or scour applications. The following charts will help decipher the appropriate anchor type and anchor pattern. Additional information for installation of the systems can be found in the ShoreMax™ Installation and Anchoring

Minimum Anchor Type Based on Soil Type

Soil Type	Anchor Type
Clay- Clay Loam	10 inch Wire Staple
Silt Loam – Loam	10 inch Wire Staple
Sandy Loam	12 in Wire Staple
Sand / Muck ≤ 6 in	12 in Rebar Staple
Sand / Muck 6-12 in	18 in Rebar Staple
Sand / Muck 12-18 in	24 in Earth Anchor + 12 in Rebar
Sand / Muck > 18 in	36 in Earth Anchor + 18 in Rebar

Maximum Design Conditions

Shear Stress	Velocity	Wave Height	Anchor Pattern
≤ 6 lbs/ft ²	≤ 14 ft/s	6 inch	F
> 6 – 8 lbs/ft ²	> 14 - 18 ft/s	12 inch	G
> 8 lbs/ft ²	> 18 ft/s	18 inch	H



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