



# Engineered Earth Armoring System™

ARMORMAX is the most advanced flexible armoring technology available for severe erosion and surficial slope stability challenges. ARMORMAX is composed of High Performance Turf Reinforcement Mat (HPTRM) and Engineered Earth Anchors™ that work together to lock soil in place and protect against hydraulic stresses.









# X3® Fiber Technology

Propex's patented X3 Fiber Technology is designed to accelerate seedling emergence, exhibit high resiliency, and feature strength and elongation properties to limit stretching in saturated conditions.

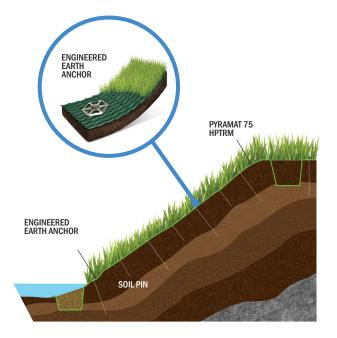
- Netless construction stands-up to the toughest erosion applications where high loading and/or high survivability conditions are required.
- Trilobal shape covers 40% more surface area than conventional fibers to capture moisture, soil and water required for rapid growth.

# Engineered Earth Anchors™

Corrosion resistant Engineered Earth Anchors [EEA<sup>TM</sup>] secure the HPTRM to the ground. EEAs are designed to provide resistance to shear and lateral forces, and embed beyond the predicted plane of failure. The ARMORMAX system uses either a B1, B2, or B3 anchor depending on the application and environment.

### Tested. Proven. Trusted

PYRAMAT, the HTPRM component of ARMORMAX, was tested at Colorado State University (CSU) on its full-scale wave overtopping simulator. The simulator tests erosion resistance of armoring materials for 500-year resiliency overtopping conditions. Testing showed that PYRAMAT provides increased levee resilience and durability, and reduces the risk of breaching caused by overtopping waves.





## Features & Benefits

#### **Design & Performance**

- Provides permanent erosion protection for up to 75 years
- Withstands extreme hydraulic stresses
- Provides resistance to shallow plane slope instability
- Provides temporary shoring and stabilization for constructed slopes
- Resistant to non-hydraulic stresses from debris and mowing and maintenance equipment
- Highly UV stabilized for applications with little or no vegetation
- Available in green or tan to complement the natural surroundings
- Outlasts other slope reinforcement methods yielding significant cost savings
- Ease of installation reduces time and labor costs
- Lightweight and easily transported into areas with access challenges

#### **Environmental**

- Recognized by the EPA as Best Management Practice (BMP) for improving water quality
- Filters sediment and pollutants to improve water quality
- Encourages infiltration of water back into the ground water table
- Proven to reduce erosion and reinforce vegetation for low-impact, sustainable design
- · Yields a vegetated solution that is more aesthetical pleasing than traditional hard armoring solutions
- Maintains cooler water temperatures than traditional hard armoring, which is healthier for aquatic habitats

## **Applications**

- · Arid and semi-arid environments where vegetation densities of <30% coverage are anticipated
- Earthen Dams & Spillways
- Roadway Embankments
- Canals/Stream Banks
- Steepened Slopes
- Channels
- Levees





VS.

**Riprap** 





**\*DAYS** 5









\*Based on a 4-person crew with equipment operator, working 8 hrs per day.



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#### \*\*CONTAINER VAN 1/2

\*\*DUMP TRUCKS 334

\*\*Based on 6" stone size at 18" depth and 15 tons per dump truck.













\*\*\*DOLLARS \$28 PER SY

\*\*\*DOLLARS \$65 PER SY

Installation Comparison: **Green Armoring** RipRap

Typical placement of 1 acre, or about 5,000 SY, of erosion protection.

<sup>\*\*\*</sup>Assuming \$25/ton for material, average fuel and equipment costs, and labor as specified above.

# **Armormax Installation Details**



**Site Preparation:** Grade and compact the failed slope and remove objects that would prevent ARMORMAX from making direct contact with the soil. Excavate a trench at the crest and toe of the slope.



**HPTRM Laydown:** Unroll the HPTRM on the prepared soil ensuring material has intimate contact with the soil.



**Anchor Installation:** Anchors should be installed in locations specified for the project.



**Vegetation Establishment:** Vegetation can be established by broadcast seeding, hydraulic seed application (hydroseeding), or sodding.

### **Authorized distributor:**



info@iwtcargoguard.com iwtcargoguard.com 1.609.971.8810









