

Propex[®]
GEOSOLUTIONS

HIGH PERFORMANCE LEEVE SOLUTIONS





ARMORING LEVEES FOR RESILIENCY AND PROTECTION

In August 2005, Hurricane Katrina made landfall near New Orleans, Louisiana, bombarding the greater metro area with a storm surge that eclipsed 20 feet in some locations. Hundreds lost their lives, and thousands more experienced cata-strophic destruction. It was one of the most expensive natural disasters in U.S. history.

Earthen levees built to protect the city from flooding were inundated by storm surge overtopping. Continuous waves pounded the crest of hurricane protection levees, causing thousands of gallons of water to cascade down the faces of earthen slopes. The land sides of many levees eroded substantially from the overtopping, leading to unanticipated damage.

The storm surge overtopping resulted in scouring of levee land sides, and in some cases led to overturned flood walls and breaches. Lack of protection of levee land sides from erosion was cited as a major cause of catastrophic destruction and spurred new requirements for resiliency of levee infrastructure across the United States. Levee reconstruction began in New Orleans with plans for armoring land sides to prevent erosional damage.



The U.S. Army Corps of Engineers—New Orleans District initiated the Hurricane and Storm Damage Risk Reduction System (HSDRRS) program in 2006, strengthening levees, floodwalls, gated structures and pump stations for a 133-mile perimeter. Standards were developed to qualify methods of armoring for erosion protection, utilizing turf reinforcement mats installed on levee land sides.

Field testing of High Performance Turf Reinforcement Mat (HPTRM) materials began in 2011, with stringent requirements for withstanding installation and maintenance loads. Vegetation establishment through HPTRMs, as well as ease of installation, was observed over a two-year pilot program on HSDRRS levees, with oversight from the U.S.A.C.E. New Orleans District.

The final qualification of HPTRMs for armoring of HSDRRS levees was performed in 2012 at Colorado State University. Vegetated HPTRMs were tested using a Wave Overtopping Simulator, replicating hurricane storm surge waves over many hours. The Propex ARMORMAX® system performed substantially better than all other HPTRMs in protecting against erosion.

ARMORMAX® was used by the USACE New Orleans District for protecting the Hurricane Storm Damage & Risk Reduction (HSDRRS) system levees from the catastrophic damage caused by storm surge overtopping. ARMORMAX® was installed just over the crest of the levees, and down the land side face before covering with sod for a reinforced vegetation surface.



Quality Manufacturing



Innovation



Superior Performance



Proven Durability

ARMORMAX® can be installed on levees for a fraction of the time and cost needed for conventional solutions, such as rock riprap. The result is proven performance for erosion protection, with all of the environmentally friendly and aesthetic benefits of fully established vegetation. ARMORMAX® provides a truly sustainable solution for long-term, fiscally responsible protection of global levee infrastructure.



WORLD CLASS ENGINEERED EARTH SOLUTIONS & SERVICES

Propex GeoSolutions is one of the largest geosynthetic and erosion control manufacturers in the world, offering full service engineering support for multiple applications, all while creating an Engineered Earth Solution. Our solutions are guaranteed to outperform conventional methods, capitalizing in various markets such as Transportation, Slope Stabilization, Shoreline Restoration, and Flood Control.

Applications include:

- Roadway Stabilization
- Canal, Stream, and Channel Protection
- Drainage and Filtration
- Pavement Rehabilitation
- Slope Protection and Stabilization
- Earthen Levee Protection

We provide industry leadership, setting standards for quality innovation, and pride ourselves in offering the most comprehensive and advanced technical services and support in the market. Our number one goal is to provide 100 percent customer support.

The many features and benefits of our Engineering Services Team includes:

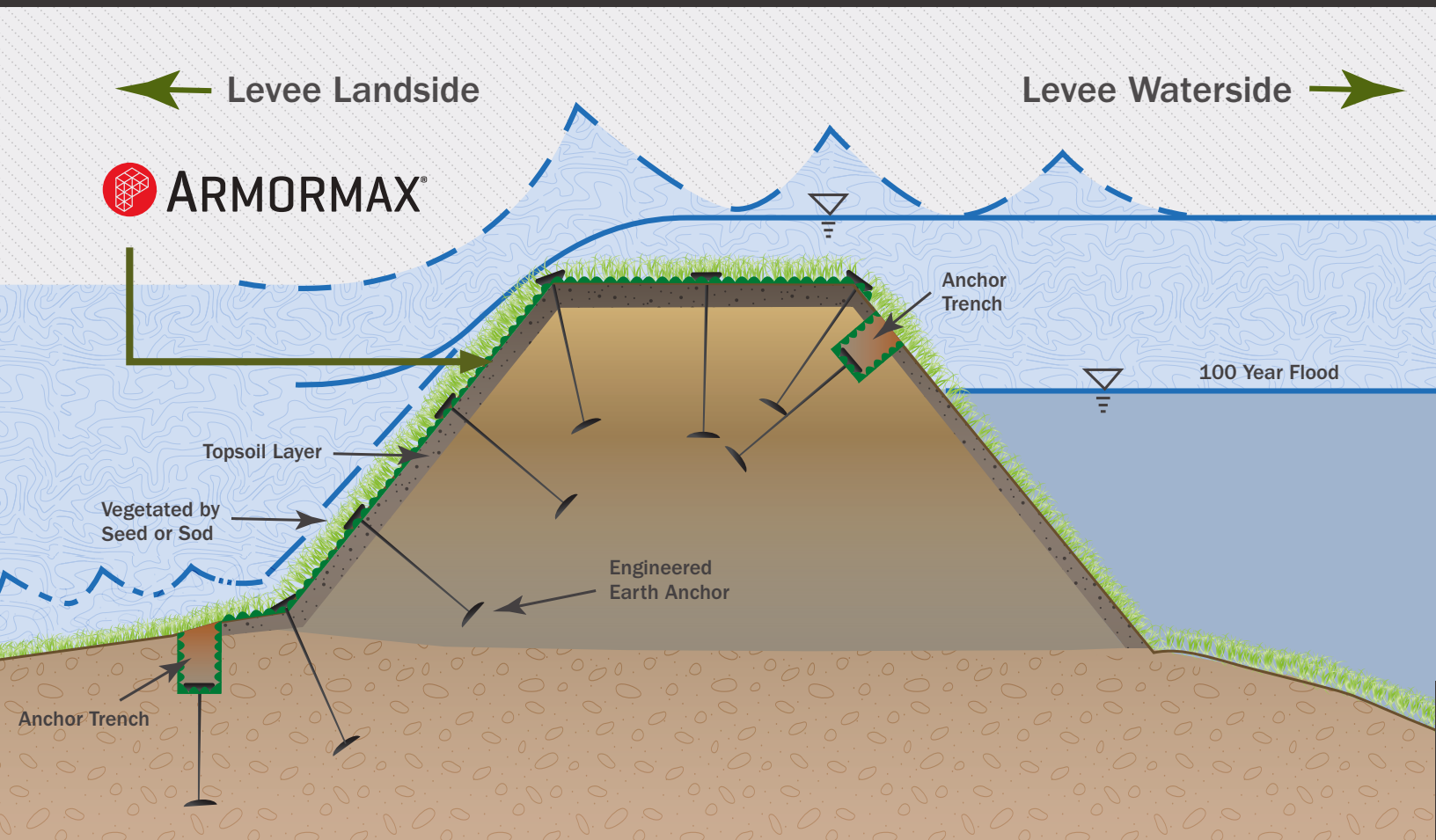
- Product Selection
- Erosion Control Analysis
- Construction Details
- Industry Organization Participation
- Design Support
- Installation Support
- Market Advancement
- Product & Application Research
- Surficial Slope Stability Analysis
- Paved and Unpaved Roadway Design
- Inspection and Validation Testing

Contact our Engineering Services Team: Info@globalsynthetics.com.au

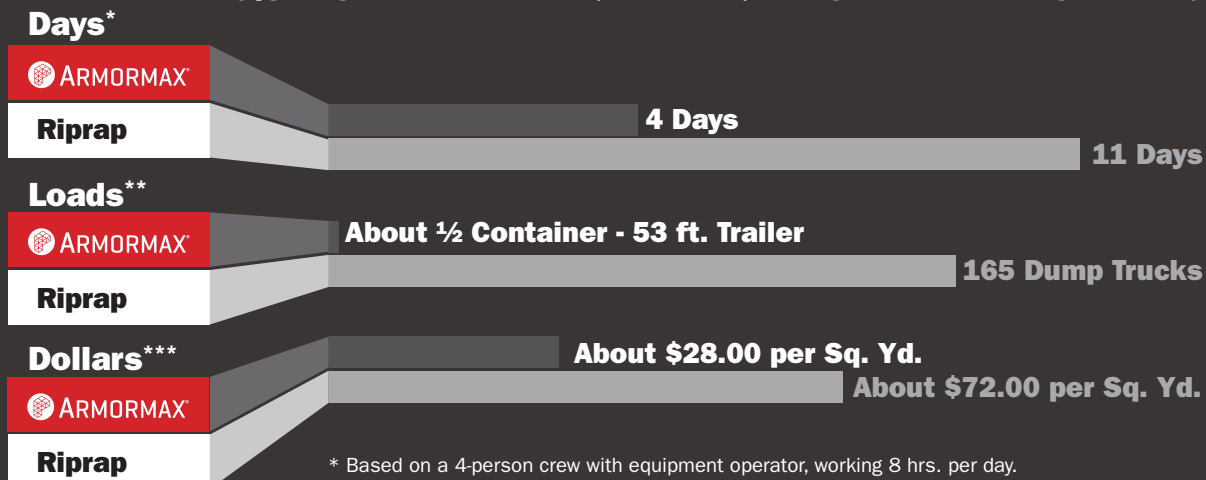


ARMORED LEVELS

Armored levees are intended to provide protection of earthen construction from erosion caused by overtopping. By growing vegetation through the high-strength fibers of the turf reinforcement mat, stems and roots intertwine with the polypropylene matrix to bolster the hydraulic resistance of natural vegetation.



INSTALLATION COMPARISON: SOFT ARMORING VS. RIPRAP (typical placement of 1 acre, or about 5,000 Sq. Yds. of erosion protection)



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

** Based on 6" stone size at 18" depth and 25 tons per dump truck.

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

A ROBUST OFFERING OF SUPERIOR GEOSYNTHETIC & EROSION CONTROL SOLUTIONS

Propex® GeoSolutions is a global leader in geosynthetic and erosion control solutions for earth stabilization. As one of the largest geotextile manufacturers in the world, our portfolio of solutions helps build and rebuild key infrastructure across the globe. Backed by a legacy of innovation, Propex® GeoSolutions transcends traditional methods with engineered solutions that stabilize earth and set the benchmark for long term performance.

Our commitment to quality, technical expertise, and constant pursuit of game changing innovations put Propex® Geosolutions at the forefront of supporting a stable tomorrow with Engineered Earth Solutions.



ENGINEERED EARTH SOLUTIONS

CONTACT THE GLOBAL TEAM TODAY: www.globalsynthetics.com.au