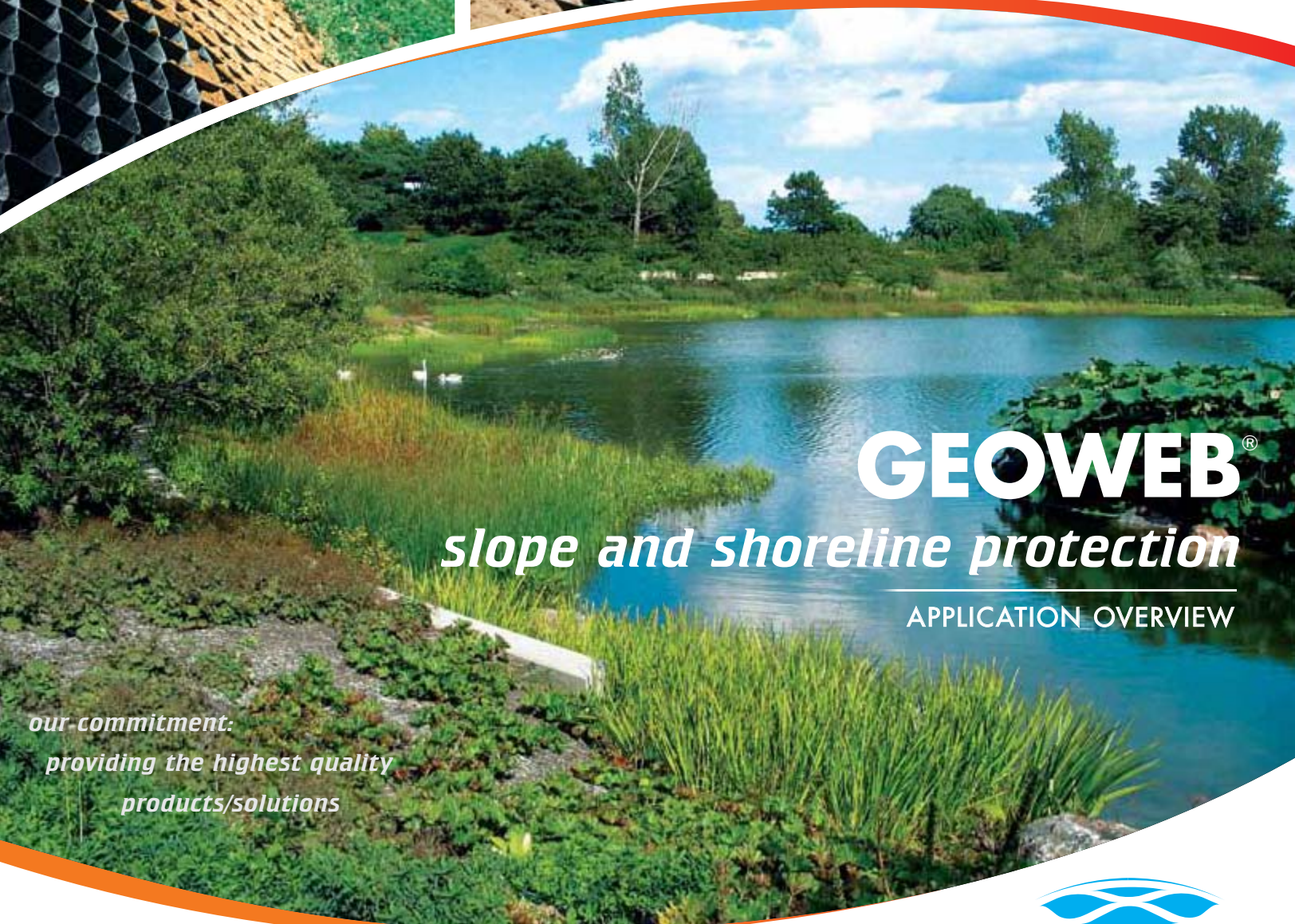




**GEOSYSTEMS**<sup>®</sup>  
GLOBAL LEADER • GLOBAL PARTNER



*creating  
sustainable  
environments<sup>®</sup>*



# **GOWEB**<sup>®</sup>

*slope and shoreline protection*

APPLICATION OVERVIEW

*our commitment:  
providing the highest quality  
products/solutions*

*eco-economic solutions for slope and shoreline protection*



**GOWEB**<sup>®</sup>  
MADE IN THE USA



# GEOWEB® slope protection solutions

## LOW-COST SLOPE STABILITY SYSTEM

The Presto GEOWEB® slope and shoreline protection system is an economical solution to challenging slope-surface stability problems while meeting a wide range of performance and aesthetic requirements. The system provides a means of fully-vegetating slope surfaces that otherwise could not support sustainable plant life.

Single or multi-layered systems offer a broad range of surface protection treatments. The systems provide long-term stability and effectiveness of vegetated, permeable and armored slope surfaces.

## GEOWEB® system benefits

- The three-dimensional structure confines selected infill material to resist down-slope movement of embankment materials and anticipated hydraulic flows.
- Minimizes the movement and migration of embankment materials by functioning as anchored containers in the upper soil layer.
- Inhibits erosion and controls rill and gully formation, particularly in areas of concentrated flow over erosive soils.
- Increases vegetation stability on slopes by interlocking with the vegetative root zone, or confining and interlocking aggregate or concrete for permeable or hard-armored solutions.

## infill options

A variety of infill materials can be used with the GEOWEB® system based upon the details of the specific project/problem.

- Topsoil with various selected vegetation
- Aggregates from sand and gravel to larger rock or stone
- Concrete of various strengths and surface finishes
- Combinations of the above to meet special conditions

## TYPICAL APPLICATIONS:

- Cut or fill embankment slopes
- Containment dikes and levees
- Shoreline revetments
- Geomembrane protection
- Landfill lining, covers, and drainage
- Storm water basins
- Waste water lagoons
- Dam faces and spillways
- Abutment protection







## **vegetated protection**

Vegetation is a natural, attractive and effective form of protection for slopes exposed to surface degradation.

The GEOWEB® system creates a structural soil stabilization system, protecting embankments against the negative effects of gravitational forces and loss of topsoil and vegetation.

## **shoreline protection**

Protection of shoreline embankments is accomplished with the GEOWEB® system using infill materials appropriate for the application. Multiple infills can be used to best address hydraulic conditions. With concrete infill, the system creates a flexible hard-armor cover to protect the shoreline against degradation caused by hydraulic forces, including ice and wave action. Where appropriate, topsoil or vegetation infill controls the movement of saturated soils so natural vegetation can flourish.

## **geomembrane protection**

The GEOWEB® system, with various infill materials, is an effective protection layer over impervious geomembranes:

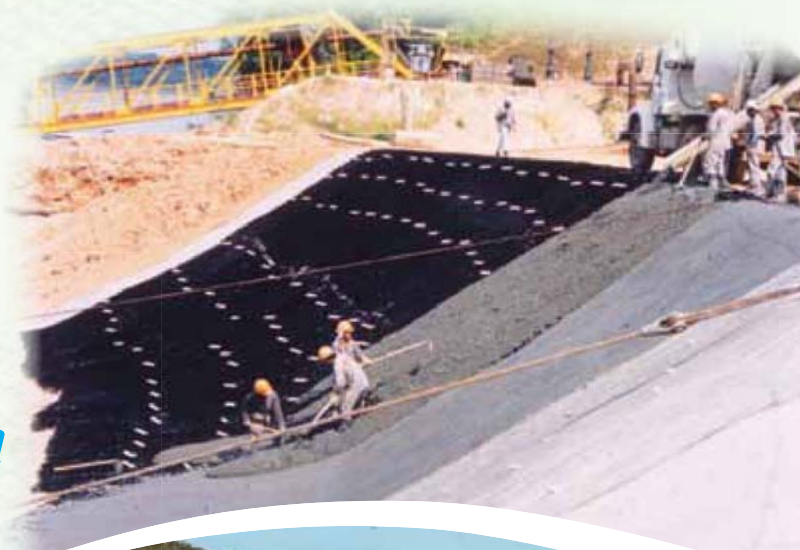
- Storm water detention and retention ponds
- Landfill/tailings linings and covers
- Waste water containment
- Dams, dikes and spillways
- Channel linings

The integration of a tendoned-anchoring system creates a suspended, structural support system that:

- Maintains the integrity of the geomembrane liner or cover.
- Directly protects the geomembrane from wildlife damage, accidental puncturing, and natural degradation.
- Indirectly prevents soil contamination and erosion.

### **STABILIZING TOPSOIL WITHIN THE GEOWEB® SYSTEM:**

- Confines the upper soil layer and protects from the effects of erosion.
- Reinforces vegetation and increases its resistance to erosive forces.
- Prevents rill development caused from concentrated flows.
- Enhances effectiveness of other surface treatments such as erosion control blankets and turf reinforcement mats.





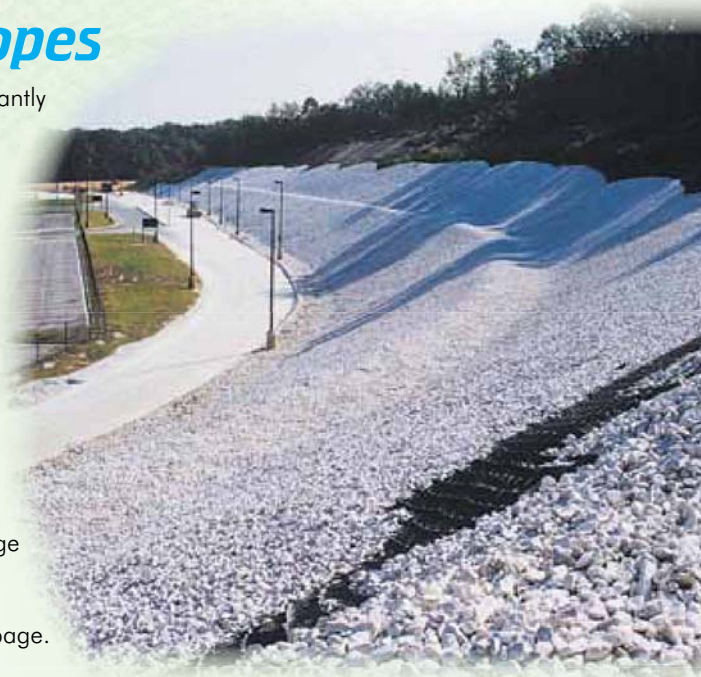
## *permeable aggregate slopes*

The GEOWEB® system's interconnected cell structure significantly improves the stability and erosion-resistance of granular materials. Confinement of the infill allows smaller, less-expensive materials to be used.

### **STABILIZING AGGREGATE WITHIN THE GEOWEB® SYSTEM:**

- Minimizes down-slope migration of granular materials caused by gravitational and hydraulic forces.
- Permits their use on steeper slopes that would otherwise be impossible, reducing use of valuable land space.
- Creates a permeable, weatherproofing cover when drainage is desired but vegetation is not.
- Provides a controlled mechanism to effectively handle seepage.

A wide range of slope angles can be accommodated by selecting the appropriate cell size and cell depth for the considered aggregate.

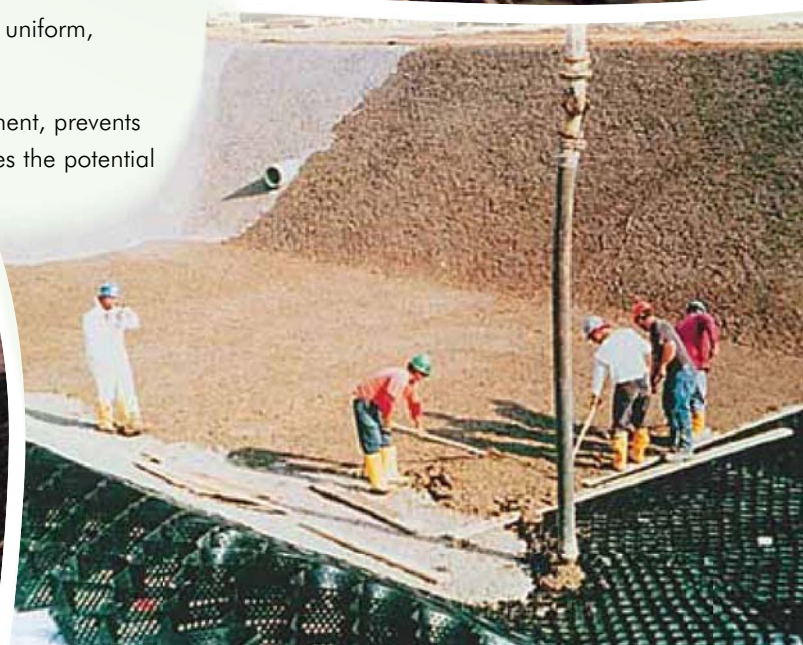


## *concrete-armored slopes*

Poured concrete provides an economical, hard-armored protection of slopes that are exposed to severe hydraulic or mechanical stresses. The quality, surface finish and thickness of the concrete can be selected to meet specific design needs.

### **STABILIZING CONCRETE WITHIN THE GEOWEB® SYSTEM:**

- Cost-effective and flexible alternative to more expensive articulating block systems.
- Reduces construction costs by eliminating the need for conventional structural forms. Installation is fast, efficient and flexible.
- Controls concrete quantities and costs through a uniform, system-defined cell depth.
- Flexible slab conforms to minor subgrade movement, prevents uncontrolled cracking of the concrete and reduces the potential of piping or undermining.



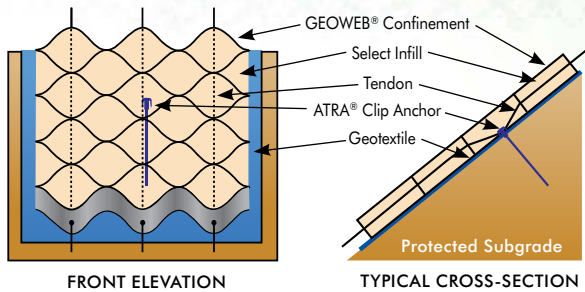




## key components

The complete GEOWEB® slope and shoreline protection system may include some of the following:

- GEOWEB® sections
- Cell infill materials
- Integral high-strength tendons
- ATRA® Clips
- ATRA® Anchors
- ATRA® Key Connection Device
- Erosion Control Blankets
- Geotextiles
- Geocomposite drainage materials
- Geomembrane
- Fasteners



## integral system components

The following components may be integrated to facilitate and expedite construction or to meet engineering requirements:

### TENDONS

Tendons may be required and are available in various tensile strengths to meet design requirements.

- Provide additional stability against gravitational, hydrodynamic, and buoyancy forces.
- Particularly effective where high flows exist, or when a geomembrane underlayer or hard soil/rock prevents anchoring with stakes.

### ATRA® ANCHORS

Presto's ATRA® Anchors provide time and material cost savings during installation of the GEOWEB® system. (1)

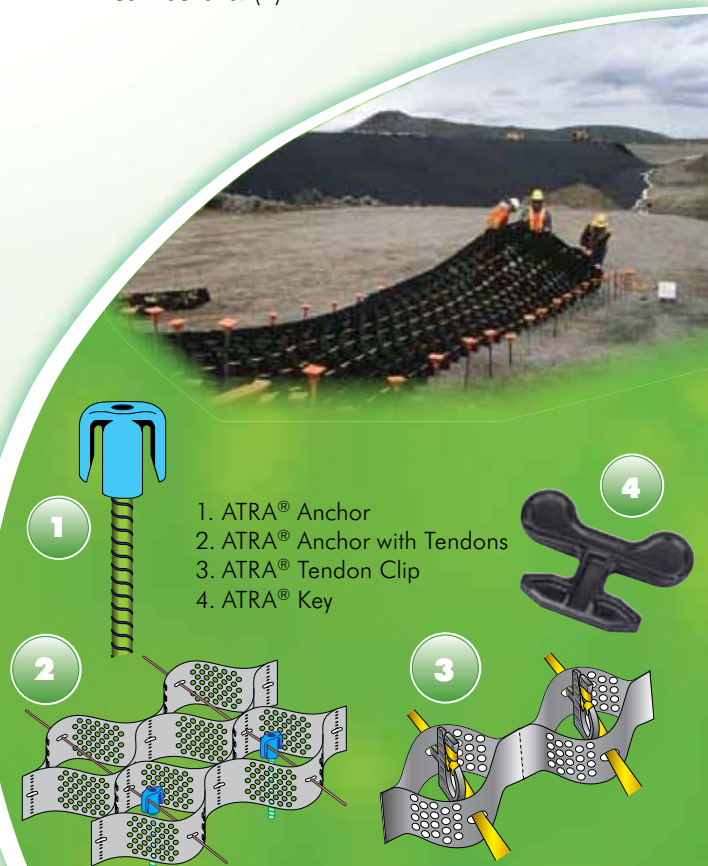
- Easier to drive than J-hook stakes; significantly improves installation productivity.
- Tendons and an ATRA® Anchor array provide additional anchoring to resist sliding and/or uplift forces. (2)
- Specialized driving tools are available to significantly speed the driving of anchors.

### ATRA® TENDON CLIP

The ATRA® Tendon Clip is an efficient load-transfer device to transfer loads from the GEOWEB® cell wall to the tendon. Fully engaged clips allow easier preassembly. (3)

### ATRA® KEY CONNECTION DEVICE

For quick and easy connection of GEOWEB® sections, the exclusive ATRA® key device reduces contractor installation cost and provides three-times-stronger connections. (4)





## comprehensive tools and services

Presto GEOSYSTEMS® and our distributors/representatives offer the most-complete services in the industry to support project design and installation requirements.

### TOOLS:

- Technical resources binder
- Engineering analysis/technical overviews
- SPECMAKER® specification development tool
- Project case studies
- Detailed construction instructions

### SERVICES:

**Project Evaluation Service:** We provide engineering analysis of specific project needs and provide recommended preliminary designs for each project.

**Construction Services:** Qualified on-site field support specialists can be available for construction training, and start-up installation supervision.

### PRESTO GEOSYSTEMS® COMMITMENT — To provide the highest quality products and solutions.

Presto GEOSYSTEMS® is committed to helping you apply the best solutions to your soil stabilization problems. Our solutions-focused approach to solving problems adds value to every project. Rely on the leaders in the industry when you need a solution that is right for your application. Contact Presto GEOSYSTEMS® or our worldwide network of knowledgeable distributors/representatives for assistance.

### LEADING-EDGE INNOVATION

Presto is the original developer of the cellular confinement technology and leads the industry in research and development resulting in meaningful product improvements, innovative features, advanced engineering methodologies, proven field results and ultimately long-term solutions to challenging problems.

### UNSURPASSED QUALITY

Presto's commitment to quality begins with manufacturing and continues through final installation.

- Quality management system certified to ISO 9001:2008 and CE certification.
- Sections manufactured from high-quality polyethylene provide consistent and maximum seam weld strength.
- Materials engineered to established geosynthetic industry guidelines.
- Sections backed by a 10-year limited warranty.



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