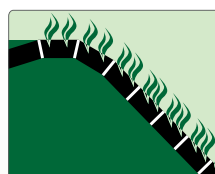


Presto Geosystems

I'm surprised that there is no mention of Geocells in the manual. They have been used successfully for over 30 years in applications including slope protection, channel protection and porous pavements, all of which are applicable to the manual. I have uploaded some general information but would be happy to provide more information and/or give a presentation to those involved in the writing of the manual if interested.

PRESTO



GEOWEB[®]

slope & shoreline
protection

OVERVIEW

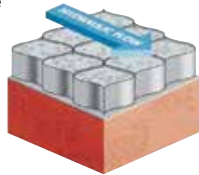


THE GEOWEB® SYSTEM

The Presto GEOWEB® slope and shoreline protection system is an effective and economical solution to challenging slope-surface stability problems. GEOWEB® slope protection systems meet a wide range of performance and aesthetic requirements with select infill.

GEOWEB® System Benefits

- The 3D cellular confinement structure confines selected infill material, minimizing the movement and migration of embankment materials by functioning as anchored containers in the upper soil layer.
- The system delivers excellent resistance to sheet flow—preventing severe erosion and controlling rill and gully formation, especially in areas of concentrated flow and over erosive soils.
- Stabilization of the slope surface materials allows embankments to be constructed steeper, with less horizontal footprint and use of land space.



Typical Applications

- Cut or fill embankment slopes
- Containment dikes and levees
- Shoreline revetments
- Geomembrane protection
- Landfill linings & covers
- Stormwater basins
- Wastewater lagoons
- Dam faces and spillways
- Abutment protection



DESIGN OPTIONS

GEOWEB® Infill/Application Options

GEOWEB® slope protection systems may be designed with a variety of infill materials to meet project requirements for aesthetics, stability, environmental impact, material availability, and erosion-control. The system also provides protection to impervious liners.

1 VEGETATED SLOPES



2 PERMEABLE AGGREGATE SLOPES



3 HARD-ARMOR CONCRETE SLOPES



4 GEOMEMBRANE PROTECTION





DESIGN OPTION

1 Vegetated Slopes

SUSTAINABLE VEGETATION



The GEOWEB® system's 3D cellular network stabilizes topsoil for sustainable vegetation on slopes up to 45° and higher. The system prevents severe erosion caused by surface

runoff and sheet flow, and offers slope-surface stability not possible with 2D planar systems.

Infill confined in the GEOWEB® 3D system creates a structural surface layer that resists sliding, where each isolated cell creates an eco-zone protected from erosive forces.

GEOWEB® vegetated slopes are a green solution ideal for **Low Impact Development (LID)** and **Green Infrastructure (GI)** designs. The system reduces environmental impacts by infiltrating stormwater, and limiting runoff and soil loss into downstream waterways.

BENEFITS OF GEOWEB® 3D CONFINEMENT:

- Stabilizes and protects the topsoil layer from movement.
- Reinforces vegetation and increases its resistance to erosive forces. Cell wall perforations increase vegetation stability by stimulating root zone interlock and cross-root growth.
- Allows construction of steeper slopes, minimizing horizontal footprint.
- Allows use of select vegetation and native plantings to meet local climates.





DESIGN OPTION

2

Aggregate Slopes

PERMEABLE, HARD-ARMORED SLOPE COVER

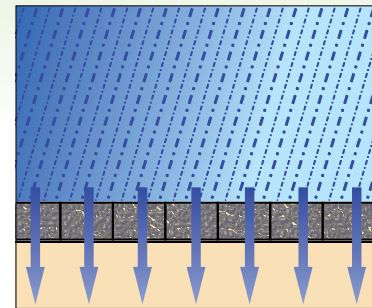


The GEOWEB® system's 3D cellular structure significantly improves the stability and erosion-resistance of granular materials, making them far more stable than

when unconfined. Confinement of aggregate also allows a significant reduction in size and less expensive materials to be used for a low-maintenance slope cover.

Aggregate infill reduces environmental impacts by allowing water infiltration on the slope face, reducing sheet flow runoff.

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



BENEFITS OF GEOWEB® 3D CONFINEMENT:

- Confinement and interlocking between cells minimizes down-slope migration of granular materials caused by gravitational and hydraulic forces.
- Allows use of smaller, less expensive rock—even waste rock.
- Creates a permeable, weatherproofing cover when drainage is desired but vegetation is not.
- Provides a controlled mechanism to effectively handle seepage.





DESIGN OPTION

3

Concrete Slopes

FLEXIBLE, HARD-ARMORED PROTECTION



GEOWEB® slopes with concrete infill provide economical, hard-armored protection of slopes exposed to severe hydraulic or mechanical stresses. The quality,

surface finish and thickness of the concrete can be selected to meet specific design needs.

Concrete-filled GEOWEB® sections are flexible, poured-in-place articulating mats that are more economical than articulated concrete block systems (ACBs) without requiring specialized equipment to install.

BENEFITS OF GEOWEB® 3D CONFINEMENT:

- Formless system reduces construction costs by eliminating conventional forms and reinforcement. Installation is fast, efficient and flexible.
- The selected cell depth ensures uniform concrete depth, controls concrete quantities and costs, and allows use of an easier to install, higher slump concrete.
- Becomes a flexible concrete slab with 'control joints' that conforms to minor subgrade movement, prevents uncontrolled cracking and reduces the potential of piping or undermining.



DESIGN OPTION



4

Geomembrane Protection

FULLY-INTEGRATED SUSPENDED SLOPE COVER SYSTEM



The GEOWEB® system may be designed as a protective cover over impervious geomembranes to prevent damage

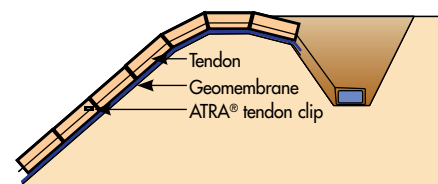
and degradation. GEOWEB® liner protection is a 'complete solution' including integral tendons and ATRA® tendon load transfer clips to create a suspended support system with selected infill. By confining infill in the GEOWEB® system, slopes can be designed steeper while still maintaining strength and integrity of the liner.

Ideal Applications: Stormwater detention and retention ponds, wastewater containment, channel linings, landfill/tailing linings and closure caps, dams, dikes and spillways.

BENEFITS OF GEOWEB® 3D CONFINEMENT:

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

- protects 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.



DESIGN CRITERIA

Slope protection details are influenced by the embankment angle (H:V), length, and infill. Presto's free project evaluation service can help determine the suitable cell size, cell depth and structural components for your project.

KEY COMPONENTS

The complete GEOWEB® slope protection system may include some or all of the following:

TYPICAL COMPONENTS

- GEOWEB® sections
- ATRA® Key connection device
- Cell infill materials
- ATRA® Anchors & Speed Stakes

OPTIONAL COMPONENTS

- Polymeric tendons
- ATRA® Tendon Clips
- Geotextile separation layer
- Geomembrane



INTEGRAL SYSTEM ACCESSORIES

The following accessories may be integrated to meet design requirements and to facilitate and expedite construction.

1 ATRA® KEY GEOWEB® CONNECTION DEVICE



For quick and easy connection of GEOWEB® sections, exclusive ATRA keys significantly reduce contractor installation time and provide a 3X stronger connection of GEOWEB® sections than any other method. Made from corrosion-resistant polymer.



2 ATRA® ANCHORS & DRIVERS

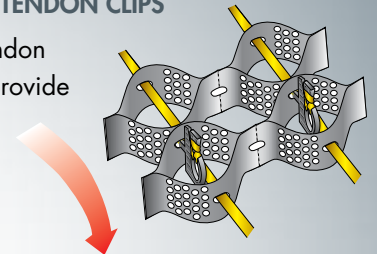
ATRA® Anchors may be part of the GEOWEB® slope design solution for internal and crest anchoring.

Easier to drive than J-hook stakes for faster installation. ATRA® driving tool speeds installation of ATRA® anchors. Three options available.



3 TENDONS & ATRA® TENDON CLIPS

Tendons and ATRA® Tendon Clips work together to provide a load transfer and suspension system over the GEOWEB® system.



TENDONS

Tendons in various tensile strengths are available to meet design requirements:

- Suspend GEOWEB® material over geomembranes, hard surfaces, or steep slopes without anchors.
- Provide additional stability against gravitational, hydraulic, and buoyancy forces.
- Type and density are critical to the design strength.

ATRA® TENDON CLIPS

ATRA® Tendon Clips transfer the load from the GEOWEB® cell wall to tendons.

- 2X stronger than other load transfer devices.
- 'Turn-and-lock' design engages ATRA® Tendon Clips securely with the GEOWEB® cell wall.
- Allows easier off-slope preassembly.



COMPREHENSIVE SERVICES AND RESOURCES

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

Free Project Evaluation Service:

We analyze 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.

RESOURCES:

- Engineering analysis/technical overviews
- SPECMaker® specification development tool
- Technical resources binder/case studies
- Detailed construction guides and videos

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. Contact Presto GEOSYSTEMS® or our worldwide network of knowledgeable distributors/representatives for assistance.

LEADING-EDGE INNOVATION

Presto is the original developer of the geocell technology and leads the industry in research and development resulting in meaningful product improvements, innovative features and accessories, 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 9001:2015 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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Email: info@prestogeo.com • www.prestogeo.com

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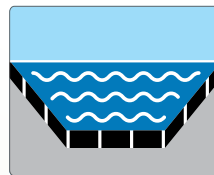


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DISTRIBUTED BY:

PRESTO



GEOWEB®

channel
protection

OVERVIEW



THE GEOWEB® SYSTEM

The Presto GEOWEB® system provides a wide variety of economical, flexible protection treatments for open channels and hydraulic structures. The system delivers stability and protection of channels exposed to erosive conditions ranging from low-to-high flows, either intermittent or continuous.

GEOWEB® System Benefits

- Confinement in the GEOWEB® cellular structure greatly improves the hydraulic performance of conventional protection materials such as topsoil/vegetation, aggregate and concrete.
- Supports vegetation in intermittent flow channels.
- Local aggregates may be used in low-to-moderate flow channels, instead of larger rip-rap.
- With concrete infill, creates a flexible, long-lasting, and lower cost armored channel lining system than reinforced or articulated concrete block systems.
- Provides protection to geomembrane-lined channels and containment systems.

Typical Applications

- Swales and drainage ditches
- Stormwater diversion & containment
- Process water channels and containment
- Spillways and down chutes
- Culvert outfalls and headwalls



DESIGN OPTIONS

GEOWEB® Infill Options

GEOWEB® channels may be designed with a variety of infill materials to meet aesthetic requirements and to resist anticipated hydraulic flows and associated stresses.

1 VEGETATED CHANNELS - SINGLE LAYER



2 VEGETATED CHANNELS: MULTI-LAYER



3 AGGREGATE CHANNELS



4 HARD-ARMORED CONCRETE CHANNELS

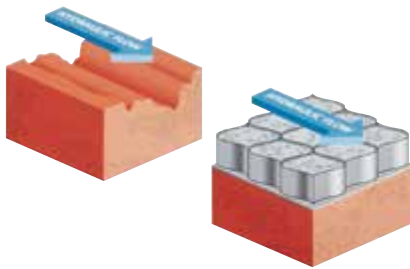


DESIGN OPTION



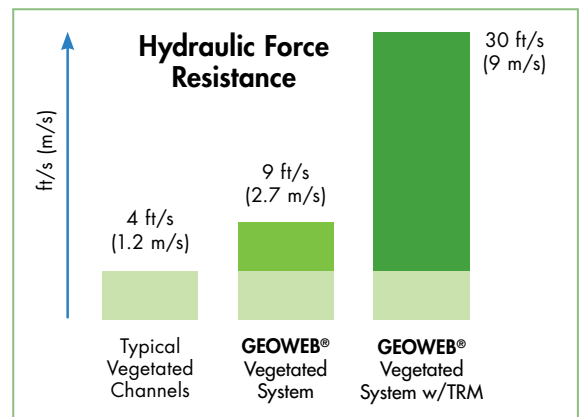
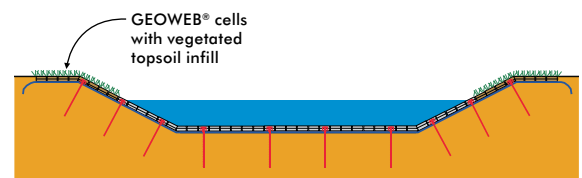
1 Vegetated Channels - Single-Layer GREEN-ENGINEERED CHANNEL LINING SYSTEMS

GEOWEB® Vegetated Channels offer protection in continuous low-flow channels, as well as high-flow intermittent channels, allowing lower-maintenance, aesthetically pleasing vegetation in place of rip-rap.



The 3D cellular network creates check-dams that protect the upper soil layer from hydrological erosive forces and resulting erosion that impacts unconfined soils.

With an overlying Turf Reinforcement Mat (TRM), the vegetated GEOWEB® system can withstand velocities as high as 30 ft/s (9 m/s) and 16 psf shear stresses. The GEOWEB® channel system doubles performance resistance to shear stress and velocity for TRMs and Erosion Control Blankets (ECBs).



IDEAL APPLICATIONS: Drainage ditches, swales and stormwater channels.



DESIGN OPTION

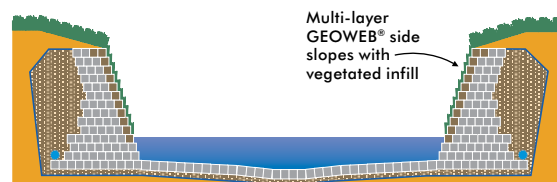


2

Vegetated Channels - Multi-Layer

NATURAL ALTERNATIVE TO WIRE-FRAMED GABION BASKETS

GEOWEB® Multi-Layered Channels can withstand higher flows for short durations, allowing naturally vegetated channels to be designed in place of hard armoring (gabions or concrete). GEOWEB® multi-layered channels tolerate reasonable differential settlement without loss of integrity so they perform well in soft-soil environments.



- Green and tan fascia panel options allow natural blending with the environment.
- Under extreme flows, the system with wrapped-coir fabric offers higher resistance and reduces potential for soil loss.
- With concrete or grout infill (outer cells only), provides greater resistance to highest flows and shear stresses.

IDEAL APPLICATIONS:

Drainage ditches, swales and stormwater channels.

GEOWEB® Channels Compared to Gabions



Aesthetics



Infill Material



Design Flexibility



Handling/Equipment/Placement

GEOWEB® Vegetated Multi-Layered Channels

- ✓ Creates a natural living green wall. Allows select vegetation type.

- ✓ Backfill and infill materials can be sourced locally. Allows smaller, less expensive rock in back cells and reinforced zone.

- ✓ Highly adaptable to varying infill types, landscape contours, curves and obstructions.

- ✓ No heavy equipment required. Lightweight sections easy to transport, deploy and install, even in difficult-to-access locations.

Gabions

Will always be visible. Collects garbage, weeds, debris. Wire becomes damaged; degrades over time.

Larger rip-rap must be used. More expensive to source and transport. Hard to place.

Large stones with limited design flexibility. Does not conform well to slopes and curves.

Require large equipment to install. Setting baskets may require a crane. Placement challenging in difficult-to-access locations.

DESIGN OPTION



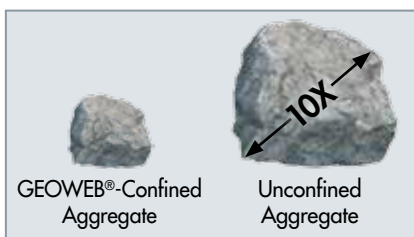
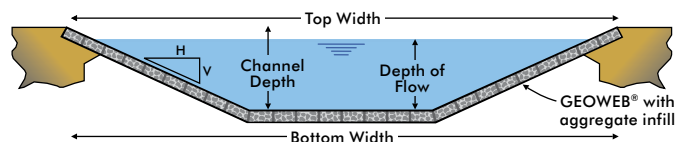
3

Aggregate Channels

AGGREGATE/RIP-RAP FOR LOW- TO MODERATE-FLOW CHANNELS

GEOWEB® Aggregate Channels are designed for low-to-moderate flow conditions. Aggregate confined in the GEOWEB® 3D structure is far more stable than when unconfined.

As a result, smaller, less expensive aggregate can be used instead of large, difficult-to-place rip-rap. GEOWEB® confinement **reduces the rock size up to 10 times** while still delivering the same protection.



Performance backed by Colorado State University Testing. Presto incorporates research-based thresholds in their design modeling and evaluation tools.



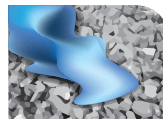
GEOWEB® Aggregate Channels Compared to RIP-RAP



Aggregate Size



Locally Available Rock



Flow Resistance



Equipment & Worker Safety

GEOWEB® Aggregate Channels

✓ Confinement allows less costly, smaller aggregate (up to 10 times) for the same protection.

✓ Allows lower-cost, locally available aggregate. Waste rock may also be used.

✓ Confined aggregate is more stable, allowing use in higher velocity flow conditions.

✓ Smaller aggregate is faster, safer to place with small equipment.

Unconfined Aggregate Channels

Larger rip-rap must be used, which is more expensive and harder to place.

Rock size must be larger for the same protection. Larger rock is not as readily available.

Unconfined rock has a lower flow resistance, resulting in the need for larger, more expensive rock.

✓ Placement of large rock may require specialized lifting equipment and is not as safe for workers.

DESIGN OPTION



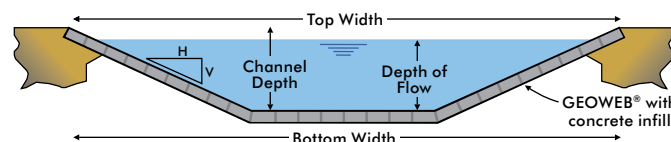
4

Hard-Armored Concrete Channels

PORTLAND CEMENT CONCRETE FOR CHANNELS WITH HIGH HYDRAULIC STRESSES

GEOWEB® Concrete Channels are a poured-in-place, hard-armored solution for channels exposed to severe velocities and hydraulic stresses. The system becomes a flexible slab that conforms to minor subgrade movement and is more economical than pre-formed concrete systems or Articulated Concrete Blocks (ACBs).

GEOWEB® concrete channels are proven* to withstand sustained flow velocities in excess of 36 ft/s (11 m/s)



and shear stresses of 20.9 psf (1.0 kPa). The cellular confinement technology creates a flexible mat of concrete reinforced by the GEOWEB® interconnected high density polyethylene structure. The GEOWEB® system acts as a construction form to allow even steep slopes to be constructed using ordinary concrete slump. The system regulates concrete depth, assuring consistent adherence to design specifications. GEOWEB® channels can be designed to withstand higher velocities and shear stresses with proper cell depth and anchorage.

*Results from research at Colorado State University.

DESIGN MODELS: Critical velocities, Manning's "n" and other hydraulic design parameters have been established for GEOWEB® channels and are incorporated in Presto's proprietary design modeling tools.



Concrete Channel System Comparisons



Concrete Slump



Forms & Reinforcement



Uniform Concrete Depth



Heavy Equipment & Worker Safety

	Concrete Slump	Forms & Reinforcement	Uniform Concrete Depth	Heavy Equipment & Worker Safety
GEOWEB® Channels	✓ Easier-to-pour higher slump concrete can be used, even on steeper channel embankments due to confinement.	✓ No forms or reinforcement required. Installation is fast, efficient and flexible.	✓ The cell wall height assures defined, consistent concrete depth. Allows a thinner cross section.	✓ No heavy-lifting equipment is required. Installation is safe for workers.
Reinforced Concrete	Low slump required especially on steeper channel embankments.	Reinforcement required.	Over pours and short pours are common.	✓ No heavy-lifting equipment required.
Articulated Concrete Block (ACB)	Concrete ACBs are manufactured offsite and transported after curing.	Cable reinforcement required. Requires heavy-lifting equipment to place.	✓ ACB mattresses are a consistent depth.	Heavy equipment is required. Worker injury is more likely.

DESIGN CRITERIA

Channel protection details are influenced by the embankment and bed slope length and angle, flow depth and velocity and shear stress. **Presto's free project evaluation service** can help determine suitable cell size and depth for your project.

KEY COMPONENTS

The complete GEOWEB® channel protection system may include some or all of the following:

TYPICAL COMPONENTS

- GEOWEB® sections
- Cell infill materials
- Geotextile separation layer
- ATRA® Key connection device

OPTIONAL COMPONENTS

- ATRA® Anchors & Speed Stakes
- Polymeric tendons
- ATRA® Tendon Clips
- Geomembrane



INTEGRAL SYSTEM ACCESSORIES

The following accessories may be integrated to meet design requirements and to facilitate and expedite construction.

1 ATRA® KEY CONNECTION DEVICE



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2 ATRA® ANCHORS

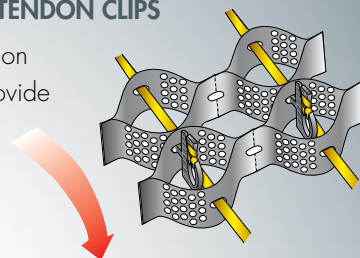
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- With tendons, provide additional resistance to sliding and/or uplift forces.
- ATRA® driving tool speeds installation of ATRA® anchors.



3 TENDONS & ATRA® TENDON CLIPS

Tendons and ATRA® Tendon Clips work together to provide a load transfer and suspension system over the GEOWEB® system.



TENDONS

Tendons in various tensile strengths are available to meet design requirements:

- Suspend GEOWEB® material over geomembranes, hard surfaces, or steep slopes without anchors.
- Provide additional stability against gravitational, hydraulic, and buoyancy forces.
- Are particularly effective for resisting high flows.
- Type and density are critical to the design strength.

ATRA® TENDON CLIPS

ATRA® Tendon Clips transfer the load from the GEOWEB® cell wall to tendons.

- 2X stronger than other load transfer devices.
- 'Turn-and-lock' design engages ATRA® Tendon Clips securely with the GEOWEB® cell wall.
- Allows easier off-slope preassembly.



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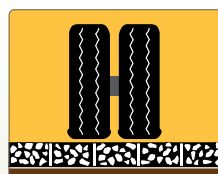


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DISTRIBUTED BY:

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GEOWEB®

load support

OVERVIEW



THE GEOWEB® SYSTEM

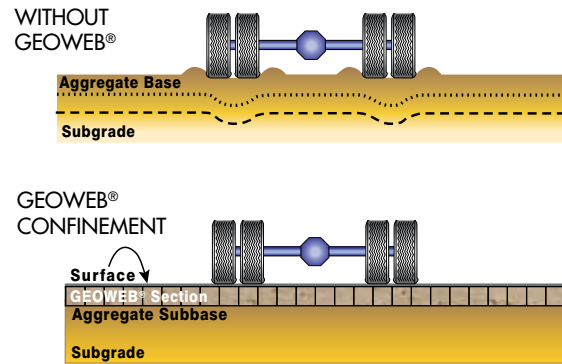
LOW-COST LOAD SUPPORT SOLUTIONS

The Presto GEOWEB® load support system is a highly effective, economical solution to road, parking, and yard surface problems that result from subgrade material failure or surface or base material instability. Under concentrated or distributed loads, the 3D cellular structure confines infill material and controls shearing, lateral and vertical movement of the infill material.

As a base stabilization system under pavement, the GEOWEB® material significantly improves pavement life cycle costs. When confined, **base material requirements can be reduced by 50% or more** by substantially reducing the loading on sub-surface soils. As a result, reduced excavation and granular infill needs reduce overall installation cost.

GEOWEB® System Benefits

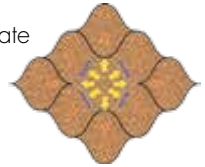
- Produces a stiff base with high flexural strength; acts like a semi-rigid slab by distributing loads laterally.
- Minimizes impact of differential and overall settlement even on low-strength subgrades.
- Increases effective structural number, reducing fill depth requirement by 50%.
- May allow use of poor-quality granular fills in place of more costly imported materials.
- With permeable infill, reduces stormwater runoff, and may reduce need and costs for stormwater ponds.



As a surface stabilization system, the GEOWEB® structure distributes surface pressures for dynamic and static loading, **controlling rutting and reducing long-term maintenance requirements and costs.** Using permeable infill with a high porosity, the system offers environmental and stormwater management benefits.

COMPARED TO PLANAR GEOGRID SYSTEMS:

- The GEOWEB® system's affect is immediate and works on a principal of hoop strength. Geogrids require tension to activate, initiated by partial deformation.
- A single layer of GEOWEB® performs well over soft subgrades and allows heavy equipment to deliver structural fill right to the edge of construction. Geogrids require 2-3 layers for same benefit and require low pressure equipment.



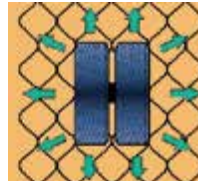
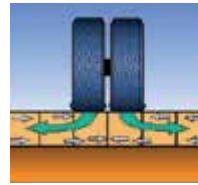
Typical Applications

- Permanent and temporary site access roads
- Permeable, load-supporting surfaces
- Intermodal/port facilities/storage yards
- Roadway shoulders (vegetated or porous aggregate)
- Base for asphalt, concrete, and modular block pavements
- Stabilized drainage layer
- Railroad track ballast/subballast structures
- Trails and walkways
- Boat ramps and low water crossings
- Pile cap structures
- Foundation mattresses & pipeline protection



RESULTS SUPPORTED BY RESEARCH

Test results from numerous research initiatives confirm the benefits of confined aggregate within the GEOWEB® cellular confinement system vs. unconfined aggregate.



- Reduces thickness and weight of structural support elements by **50 percent or more.**
- Allows subgrade materials to **withstand more than 10 times** the number of cyclic-load applications before accumulating the same amount of permanent deflection.
- Provides **over 30% stress reduction** when supporting aggregate under pavement.

KEY APPLICATION AREAS

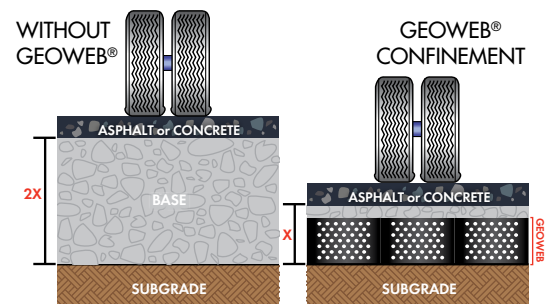
The GEOWEB® system creates a stabilized structural support system, providing considerable benefits to unstable soils in key areas:

- 1 Base stabilization** under paved surfaces
- 2 Surface stabilization** for unpaved permeable surfaces
- 3 Over-excavation alternative** eliminates full depth removal
- 4 Hard-surface pavements** – flexible, poured in place

1 Base Stabilization UNDER PAVED SURFACES

As base support, the GEOWEB® load support system creates a stabilized layer under asphalt, concrete or modular block pavements that hold up under heavy, repeated traffic.

Selection of infill materials for base stabilization is determined by anticipated load characteristics and overall performance requirements. The system is **especially effective in soft-soil areas** where substantial pavement problems and regular maintenance costs exist or are anticipated as a result.



STABILIZING BASE MATERIALS WITHIN THE 3D GEOWEB® SYSTEM:

- Requires 50% or less base material when material is confined to achieve the same load support requirements.
- Minimizes load-related deformation and settlement, and reduces pavement degradation and cracking common with soft subgrades.
- Allows the use of lower quality granular infill, even over soft subgrades.



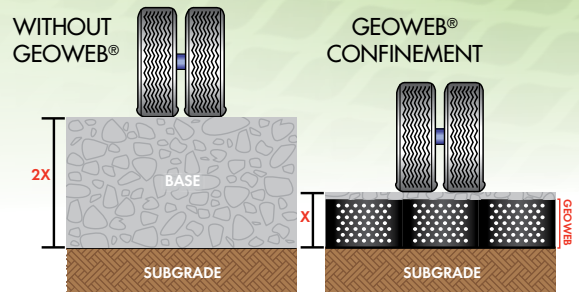
2

Surface Stabilization

FOR UNPAVED AND PERMEABLE SURFACES

With permeable infill, the GEOWEB® surface stabilization system provides a cost-effective alternative to hard surface pavements with many environmental benefits. By confining aggregate infill, the system improves the load distribution characteristics of unpaved roads and pavement areas, reducing long-term maintenance requirements and costs.

With topsoil/aggregate infill, the GEOWEB® material creates a vegetated surface that supports occasional loads.



STABILIZING INFILL MATERIALS WITHIN THE 3D GEOWEB® SYSTEM:

- Distributes pressures from dynamic and static loadings throughout the system, reducing lateral and vertical displacement of the infill and surface rutting.
- With aggregate infill, performs double duty as an on-site water detention/retention storage "basin"; may eliminate requirements and costs for on-site stormwater containment systems.
- Reduces stormwater surface runoff, maximizes groundwater replenishment.
- Contributes to green building LEED® credits for stormwater management and is a Low Impact Development (LID) solution.

3

Over-Excavation Alternative

ELIMINATES FULL DEPTH REMOVAL

When faced with unsuitable soils requiring full depth removal, the GEOWEB® system can significantly reduce excavation. The infilled GEOWEB® system forms a stabilized base layer, highly effective in solving support challenges **without full removal of poor soils**. In many cases, lower cost onsite granular materials may be used in place of costly imported aggregate..



4

Hard-Surface Pavements

FLEXIBLE, POURED IN PLACE

Replace a deep cross-section of reinforced concrete with a thinner poured-in-place, non-reinforced GEOWEB® solution that is easier and quicker to install, requires no forms, and controls cracking. Assures even, precise concrete depth as GEOWEB® cell walls act as a continuous form.



KEY COMPONENTS

The complete GEOWEB® load support system may include some or all of the following:

TYPICAL COMPONENTS

- GEOWEB® sections
- Cell infill materials
- Geotextile separation layer
- ATRA® Key connection device

OPTIONAL COMPONENTS

- Geocomposite drainage materials
- ATRA® Anchors
- Polymeric tendons

SIZE OPTIONS

GEOWEB® sections are available in various cell sizes, cell depths and section lengths to address specific project needs. Load support system details are influenced by the characteristics of subsoil strength, applied load, available granular infill and surface type. Generally, the heavier the applied load and/or the poorer the quality of subsoils, the greater the required cell depth. Presto's free project evaluation service can help determine suitable cell size and depth.



INTEGRAL SYSTEM COMPONENTS

The following components may be integrated to meet design requirements and to facilitate and expedite construction.

1 ATRA® KEY CONNECTION DEVICE



For quick and easy connection of GEOWEB® sections, exclusive ATRA® keys significantly reduce contractor installation time and provide a three-times-stronger connection of GEOWEB® sections.



2 ATRA® ANCHORS

Anchors are typically not part of the permanent design requirements for load support, but are used to aid construction. With 1/2 inch rebar stakes or 10-12 mm dia. rods, ATRA® Anchors are easier to drive than J-hook stakes, improving installation productivity.



3 TENDONS

Tendons may be required for providing additional hold-down and stability in the following applications:

- Traffic loadings on a grade
- Wet or saturated soil conditions on trails or access roads through wetlands
- Boat ramps or low-water-crossings





COMPREHENSIVE SERVICES AND RESOURCES

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

Free Project Evaluation Service:

We analyze 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.

RESOURCES:

- Engineering analysis/technical overviews
- SPECMAKER® specification development tool
- Technical resources binder/case studies
- Detailed construction guides and videos

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. Contact Presto GEOSYSTEMS® or our worldwide network of knowledgeable distributors/representatives for assistance.

LEADING-EDGE INNOVATION

Presto is the original developer of the geocell 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 9001:2015 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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Comments on the Draft 2019 SWMMWW		
Draft 2019 SWMMWW Section (select from drop down)	Comment	Comment Made By
BMP C107: Construction Road / Parking Area Stabilization	Geocells can add additional stability to aggregate access roads/parking areas, reducing aggregate needs	
BMP C120: Temporary and Permanent Seeding	Geocells can significantly increase acceptable velocities of vegetated channels	
BMP C122: Nets and Blankets	Geocells greatly improve the performance of nets and blankets when placed below these products	
BMP C201: Grass-Lined Channels	Geocells can significantly increase acceptable velocities of vegetated channels	
BMP C202: Riprap Channel Lining	Geocells allow for much smaller rip-rap to be used for given velocities	