The complete GEOWEB® earth retention system may include some or all of the following:

- **GEOWEB**® sections
- Cell fill and backfill materials
- Geocomposite drainage materials
- Geofoam and/or geosynthetic reinforcement
- Subbase

**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 resource binder
- Engineering analysis/technical overviews
- **SPECWeb**® specification development tool
- Project case studies
- Detailed construction instructions

**SERVICES:**
- 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.

**PRESTO GEOSYSTEMS’ COMMITMENT**

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 and enhancements, advanced engineering methodologies, and proven field results that provide long-term solutions to unique and difficult problems.

**COST-EFFECTIVE, SIMPLE-TO-CONSTRUCT OPTION**

GEOWEB® retention structures are cost-competitive with conventional earth retention systems. The installed cost will vary with site conditions, including but not limited to accessibility, soil conditions, cell fill and compaction, labor rates, subgrade loading, and length of wall.

- Construction productivity can be greatly improved compared to conventional wall types.
- Flexible wall sections conform to differential settlement and allow natural conformance to landscape obstructions and contours.
- Compact sections are easy to transport and construct in difficult access or remote locations.
- Allows use of aggregates to minimize hydrostatic conditions.
- Effective in higher velocity-flow channel applications with large aggregate or concrete infill in outer cells.

**QUALITY MANAGEMENT SYSTEM**

Sections manufactured from high-quality polyethylene provide consistent and maximum seam weld strength.

- Materials engineered to established geotechnical industry guidelines.
- Sections backed by a 10-year limited warranty.

**UNPARALLELED 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 geotechnical industry guidelines.
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**GLOBAL LEADER • GLOBAL PARTNER**

Creating sustainable environments®

**eco-economic solutions for vegetated retaining walls**
The Geoweb® earth retention system provides an economical, structurally-sound, green alternative to conventional retaining wall systems. The Geoweb® system meets all design requirements while providing desired aesthetics through a natural face that allows vegetation to flourish, creating a natural living wall.

**Geoweb® earth retention solutions**

**Low-Cost Retaining Wall Systems**

The Geoweb® earth retention system provides an economical, structurally-sound, green alternative to conventional retaining wall systems. The Geoweb® system meets all design requirements while providing desired aesthetics through a natural face that allows vegetation to flourish, creating a natural living wall.

**Aesthetics of Sustainable Vegetation**

The flexible nature of Geoweb® retaining walls makes them adaptable to specific applications and wall types, including:

- Steepened slopes
- Geocomposite Retaining Walls
- Gravity Retaining Walls
- Multi-Layered Channel Systems

The Geoweb® system adapts to a wide range of design criteria and construction requirements, meeting site challenges even when subgrade soils are compressible. With a high percentage of open area, utility to use cell fills and efficient transportation of materials, the Geoweb® system is an aesthetically suitable solution for a wide variety of retaining walls.

**Wall Selection Criteria**

The Geoweb® earth retention system can be designed in a variety of wall configurations to meet specific site and reinforcement requirements. Selection of the wall type is influenced by the site soil conditions, space accessibility, tree planting restrictions, availability of suitable backfill materials, project economics and the desired aesthetics of the completed wall. Geoweb® retaining walls are suitable for TFR and reinforcement support, and can be designed for a broad range of soils, backfill, ground water and drainage conditions.

**Geoweb® Wall Structure Types**

The flexible nature of Geoweb® retaining walls makes them adaptable to specific applications and wall types, including:

- Steepened slopes
- Geocomposite retaining walls
- Gravity retaining walls
- Multi-layered channel systems

**Steepened slopes**

Geoweb® steepened slopes create a layered wall structure without reinforcement for additional earth reinforcement when simple fascia protection is required over a structurally-stable soil embankment.

**Geoweb® gravity retaining walls**

Geoweb® gravity retaining walls are effective when space constraints do not allow the use of earth reinforcement materials. The system is constructed as a layered gravity wall with vegetative infill offer a natural appearance, stability and maintenance benefits.

**Geoweb® geocomposite retaining walls**

Geoweb® geocomposite retaining walls are installed when earth reinforcement materials are included. The system creates a fully confined wall facing that works with the backfill using a variety of tie-back systems (e.g., geotextile or geogrid earth reinforcement layers, soil nails, etc.) typical of conventional retaining walls.

**Multi-layered channel systems**

When applied in areas of anticipated high-energy water impact, Geoweb® sections can be wrapped with geotextile to reduce soil loss potential in the outer face while vegetation is being established, or infilled with large aggregate or concrete granulate.
GEOWEB® earth retention solutions
LOW-COST RETAINING WALL SYSTEMS

The GEOWEB® earth retention system provides an economical, structurally-sound, green alternative to conventional retaining wall systems. The GEOWEB® system meets all design requirements while providing desired aesthetics through a retained face from which vegetation can flourish, creating a natural living wall.

aesthetics of sustainable vegetation

The multi-layered GEOWEB® retains biomixtures with exposed outer fascia cells, creating a natural environment for selected sustainable vegetation. The natural-colored facing

Standard wall sections are available with green, tan, or black fascia colors to blend with natural environments. The polyethylene is ultraviolet-light-stabilized to resist color fading, and increase system durability and quality performance to meet typical engineering requirements.

low environmental impact

The highly permeable wall surface is a natural Low Impact Development (LID)/Best Management Practice (BMP) for reducing stormwater runoff and managing stormwater on-site.

natural-colored facing

The GEOWEB® system adapts to a wide range of design criteria and construction requirements, meeting site challenges even when subgrade soils are compressible. With a high percentage of open area, ability to use cut fill and efficient transportation of materials, the GEOWEB® system is an excellently suited solution for a wide variety of retaining walls.

wall selection criteria

The GEOWEB® earth retention system can be designed in a variety of wall configurations to meet specific site and reinforcement requirements. Selection of the wall type is influenced by the site soil conditions, space accessibility/restrictions, availability of suitable backfill materials, project economics and the desired aesthetics of the completed wall.

GEOWEB® retaining walls can contribute to LEED® green building credits for reducing site disruption, reducing the heat island effect and for stormwater quality and quantity control.

GEOWEB® retaining walls are effective when space constraints do not allow the use of earth reinforcement materials. The system is constructed as a beam-like gravity wall that resists lateral pressures and maintains structural integrity even when significant subgrade deformations occur.

multi-layered channel systems

When applied in areas of anticipated high-shear water impact, GEOWEB® sections can be wrapped with core fabric to reduce soil loss potential in the outer face while vegetation is being established, or infilled with large aggregate or concrete grout.
The Geoweb® earth retention system provides a structural, structurally-secure, green alternative to conventional retaining wall systems. The Geoweb® system meets all design requirements while providing desired aesthetics through a natural face that when vegetation can flourish, creating a natural living wall.

**aesthetics of sustainable vegetation**

The multi-layered Geoweb® structure features horizontal terraces with exposed soils that cells, creating a natural environment for selected sustainable vegetation. The vegetated system reduces stormwater runoff by allowing rain water to fall on the exposed horizontal soil terrace, maximizing water collection.

**low environmental impact**

The highly permeable wall surface is a natural Low Impact Development (LID)/Green Infrastructure (GI) for reducing stormwater runoff and managing stormwater on-site.

**natural-colored facing**

Standard wall sections are available with green, tan, or black fascia colors to blend with natural environments. The polyethylene is ultraviolet-light-stabilized to resist color fading, and black fascia colors to blend with natural environments.

**wall selection criteria**

The Geoweb® earth retention system can be designed in a variety of wall configurations to meet specific site and reinforcement requirements. Selection of the wall type is influenced by the site soil conditions, space accessibility/requirements, availability of suitable backfill materials, project economics and the desired aesthetics of the completed wall. Geoweb® retaining walls are suitable for FR and reinforcement support, and can be designed for a broad range of soils, backfill, ground water and discharge conditions.

**Geoweb® wall structure types**

The flexible nature of Geoweb® retaining walls makes them adaptable to specific applications and wall types, including:

- **steepened slopes**
- **geocomposite retaining walls**
- **gravity retaining walls**
- **multi-layered channel systems**

**steepened slopes**

Geoweb® steepened slopes create a layered wall structure without requirements for additional earth reinforcement when ample fascia protection is required over a structurally-stable soil embankment.

**geocomposite retaining walls**

Geoweb® geocomposite retaining walls are utilized when earth reinforcement materials are included. The system creates a fully confined wall facing that is backed with the backfill using a variety of tie-back systems (i.e. geotextile or geogrid earth reinforcement layers, soil nails, etc) typical of conventional retaining walls.

**gravity retaining walls**

Geoweb® gravity retaining walls are effective when space constraints do not allow the use of earth reinforcement materials. The system is constructed as a layered gravity wall that meets lateral pressure and maintains structural integrity even when significant subgrade deformations occur.

**multi-layered channel systems**

When applied in areas of anticipated high-energy water impact, Geoweb® sections can be wrapped with coir fabric to reduce soil loss potential in the outer face while vegetation is being established, or infilled with large aggregate or concrete grout. Geoweb® sections layered along channel side slopes with vegetation (if a) offer a natural appearance, stability and protection to channels exposed to severe conditions ranging from low-to-high flows, either intermittant or continuous. The multi-layered configuration tolerates differential settlement without loss of system integrity and provides a near-vertical profile, reducing valuable land use.

**TYPICAL APPLICATIONS:**

- vegetated retaining walls
- bioengineered walls
- steepened embankments
- aka A-frame protection
- cobble headwalls
- vegetated channel structures
- change in grade landscape walls
- erosion protection barriers
- sound barriers

**FOUNDATION SOIL Layers**

**BACKFILL SOIL Layers**

**RETAI NED SOIL Layers**

**BACKFILL SOIL Layers**

**TIE-BACK SOIL Layers**

**FOUNDATION SOIL Layers**

**RETAI NED SOIL Layers**

**BackFILL SOIL Layers**

**Figure 1:** Geoweb® earth retention systems, showing the multi-layered Geoweb® system’s adaptability to specific applications and wall types.
The complete GEOWEB®-like earth retention system may include some or all of the following:

- GEOWEB® sections
- Cell fill and backfill materials
- Geosynthetic drainage materials
- Geosynthetics and/or geosynthetic reinforcement
- Subbase

**key components**

The GEOWEB®-like earth retention system adapts to a wide range of design requirements and site conditions. The system’s inherent flexibility, unique load deformation behavior, and ability to conform to reasonable differential settlement make it suitable for a wide range of fill materials and foundation soils, including:

- Topsoil with various selected vegetation
- Granular materials (sand, gravel or graded stone)
- Concrete

**FLEXIBLE DESIGN SOLUTION**

The GEOWEB®-like earth retention system offers a wide range of design requirements and site conditions. The system’s inherent flexibility, unique load deformation behavior, and ability to conform to reasonable differential settlement make it suitable for a wide range of fill materials and foundation soils, including:

- Topsoil with various selected vegetation
- Granular materials (sand, gravel or graded stone)
- Concrete

**COST-EFFECTIVE, SIMPLE-TO-CONSTRUCT OPTION**

GEOWEB®-like retention structures are cost-competitive with conventional earth retention systems. The installed cost will vary with site-specific conditions, including but not limited to accessibility, soil conditions, cost of fill and compaction, labor rates, surcharge loading, and length of wall.

- Construction productivity can be greatly improved compared to conventional wall types.
- Flexible wall sections conform to differential settlement and allow natural conformances to landscape obstructions and contours.
- Compact sections are easy to transport and construct in difficult access or remote locations.
- Allows use of aggregates to minimize hydrostatic conditions.
- Effective in higher velocity-flow channel applications with large aggregates or concrete fill in cut cells.

**comprehensive tools and services**

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

**TOOLS**

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

**SERVICES**

Presto GEOSYSTEMS®’s Project Evaluation Service provides a comprehensive system overview to answer your questions or provide long-term solutions to unique and difficult problems. Our solutions-focused team of experts can be available for construction training, and start-up installation supervision.

**PRESTO GEOSYSTEMS’ COMMITMENT**

Presto GEOSYSTEMS® is committed to helping you apply the best solutions to your soil stabilization problems. Our standardized approach to solving problems makes solutions easier to apply. Each project is unique; the industry when you need a solution that is right for your application. Contact Presto GEOSYSTEMS® at our worldwide network of knowledgeable distributors/representatives for assistance.

**LEADING-EDGE INNOVATION**

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**UNPARALLELED QUALITY**

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

- Quality management system certified to ISO 9001:2008 and CE recertification.
- 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.

**DISTRIBUTED BY**

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The complete GEOWEB® earth retention system may include some or all of the following:

- **GEOWEB® sections**
- Geogrids and/or geotextile reinforcement
- Subbase

**TOOLKIT**
- Technical resources binder
- Engineering sample/technical overview
- **SPECification** specification development tool
- Project case studies
- Detailed construction instructions

**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 solution-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® in our worldwide network of knowledgeable distributors/representatives for assistance.

LEADING-EDGE INNOVATION
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ULTRA-QUALITY PRESTO® components begin with manufacturing and continue through final installation.
- Quality management system certified to ISO 9001:2008 and CE certification.
- Materials engineered to established geosynthetic industry guidelines.
- Sections manufactured from high-quality polyethylene provide consistent and maximum seam weld strength.
- Materials engineered to established geographic industry guidelines.
- Sections backed by a 10-year limited warranty.

**APPLICATION OVERVIEW**

- GEOWEB® sections
- Geosynthetic drainage materials
- Subbase

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Eco-economic solutions for vegetated retaining walls

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Creating sustainable environments®

**GEOWEB®**

The GEOWEB® earth retention system adapts to a wide range of design requirements and site conditions. The system’s inherent flexibility, unique load deformation behavior, and ability to conform to reasonable differential settlement make it suitable for a wide range of soil materials and foundation soils, including:

- Topsoil with various selected vegetation
- Granular materials (sand, gravel or graded stone)
- Concrete of various strengths and surface finishes
- Granular/soil backfills
- Geocomposite drainage materials
- Geogrids and/or geotextile reinforcement
- Subbase

**COST-EFFECTIVE, SIMPLE-TO-CONSTRUCT OPTION**

GEOWEB® retention structures are cost-competitive with conventional earth retention systems. The initial cost will vary with site-specific conditions, including but not limited to accessibility, soil conditions, cost of soil and vegetation, labor rates, surcharge loading, and length of wall.

- Construction productivity can be greatly improved compared to conventional wall types.
- Flexible wall sections conform to differential settlement and allow natural conformance to landscape obstructions and contours.
- Compact sections are easy to transport and construct in all-terrain access or remote locations.
- Allows use of aggregates to minimize hydrostatic conditions.
- Effective in higher velocity-flow channel applications with large aggregates or concrete infill in outer cells.

**SPECIAL FEATURES**

- GEOWEB® sections are easy to transport and construct in all-terrain access or remote locations.

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GW/RWO SEP 2014

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**UNPARALLELED QUALITY**

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- Materials engineered to established geosynthetic industry guidelines.
- Sections backed by a 10-year limited warranty.

**APPLICATION OVERVIEW**

- GEOWEB® sections
- Geosynthetic drainage materials
- Subbase

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