

Imagine the Possibilities



Retaining Excellence™



Setting the Worldwide Standard for Excellence and Innovation

For more than 20 years, Keystone Retaining Wall Systems, Inc. has set the worldwide standard for excellence and innovation within the segmental retaining wall industry. Symbolizing cutting-edge design, performance and aesthetics, Keystone has always been a product of the energy, passion and focus of the industry's top network of professionals.

Together with premier manufacturers, product developers, engineers and sales professionals, we proudly ensure that Keystone products and services offer the best site solutions for governmental, commercial/industrial, recreational, public works and residential applications.



Keystone's extensive family of products offers complete wall solutions that overcome the most challenging site conditions and also lead the industry in performance and aesthetics.

- ▶ **Keystone Standard Unit**, *the industry's most stable construction platform for taller walls*
- ▶ **Keystone Compac Unit**, *a valuable combination of cost effectiveness, aesthetics and performance*
- ▶ **Keystone Country Manor®**, *for projects where aesthetic considerations are paramount*
- ▶ **Keystone Half Century Wall®**, *a multi-size system with advanced structural integrity*
- ▶ **Keystone Landscape Series**, *superior natural stone aesthetic perfect for residential projects*



Uniquely Keystone

Since our establishment, Keystone's focus has been to offer exceptional support services as well as superior products. We are very proud to offer comprehensive and skilled support in the areas of Research & Development, Engineering, Sales and Marketing.

Research & Development: Keystone's Production and Development team has more than 50 patents leading to the industry's most innovative product lines in both form and function.

Engineering: For even the most challenging sites, Keystone's in-house engineering department provides a full-range of services from preliminary to complete project designs, value engineering, technical support and wall performance analysis.

Sales: As retaining wall specialists, Keystone sales associates provide training and education to architects, engineers and homeowners to make it as efficient and rewarding as possible to work with Keystone products. Keystone sales support is readily available throughout the United States and also extends worldwide.

Marketing: Keystone's marketing department produces full collateral support for the entire product line to ensure the most current product information is always available.

Internet: The Keystone website, www.keystonewalls.com, is an interactive resource offering complete design and installation details. Individual portals for designers, contractors and



homeowners make the website a one-stop source for all the Keystone site solution information you need.

Keystone is a subsidiary of CONTECH Earth Stabilization Solutions Inc. (ESS). CONTECH ESS is the nation's leading provider of complete solutions for earth stabilizations projects of every description. From landscaping and retaining wall systems to erosion control and surface stabilization solutions, CONTECH ESS is unequalled in its breadth of products and level of expertise. To learn more about the entire line of CONTECH ESS erosion control products, please visit www.contechess.com.

*Every great invention
is the result of
finding a solution to
a problem or need!*



Keystone's Family of Products

KEYSTONE STANDARD UNIT – SERIES I & II

The Keystone Standard is an American original and remains the industry leader. Its height-to-depth ratio delivers a structurally sound, engineered wall system with superior construction stability, durability, and strength. This product is the preferred choice for tall walls and critical structures.



*Size:

- Series I - 8" h x 21½" d x 18" w (200 x 550 x 450mm)
- Series II - 8" h x 18" d x 18" w (200 x 450 x 450mm)

Exposed Face Area:

- 1 sq. ft. - 8" x 18"

*Weight:

- 105 lbs. (50 kg)



KEY FEATURES

High Strength Pin Connection System

Structural Integrity

- ▶ Large units increase overturning resistance by minimum of 50 percent.
- ▶ Unit "tails" can be interlocked which increases base width and the height gravity walls can be constructed.
- ▶ Pins and greater unit depth increase unit-to-unit and unit-to-geogrid strength.
- ▶ Significantly improves construction stability.
- ▶ Minimizes face movement and alignment problems.
- ▶ Increases vertical spacing between reinforcing layer for more efficient distribution and improved engineering results.
- ▶ Open cores increase vertical drainage through face units and allow for gravel interlock across block interfaces.

Ease of Installation

- ▶ Tapered sides offer ease in constructing radii as tight as 5 feet.
- ▶ Unit shape's "tail element" makes handling easier.

Aesthetics

- ▶ Sculptured (tri-planar) or straight face options.
- ▶ Additional texture and shape options available in selected markets.

Design Versatility

- ▶ Near vertical or battered setback options available.
- ▶ Cores allow handrail or fence posts to be incorporated into the wall.

**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

Note: Keystone also offers a beveled face design for the Standard unit, Keystone Victorian Stone™. This product is only available in certain markets. Contact your local Keystone representative for additional information.

KEYSTONE COMPAC UNIT – SERIES I & II

The Keystone Compac is the perfect choice when the deep embedment length of the Keystone Standard unit is not required. An installer's favorite, its lighter weight and shorter tail design make it easy to handle.



***Size:**

- 8"h x 12"d x 18"w (200 x 300 x 450mm)

Exposed Face Area:

- 1 sq. ft. - 8" x 18"

***Weight:**

- 85 lbs. (39 kg)



KEY FEATURES

High Strength Pin Connection System

Structural Integrity

- ▶ Higher unit-to-unit shear resistance.
- ▶ Increased vertical drainage through face units.
- ▶ Open cores allow for gravel interlock across block interfaces.
- ▶ Improves connection strength between face units and geogrid.

Ease of Installation

- ▶ Tapered sides offer ease in constructing radii as tight as 4.5 feet.
- ▶ Unit shape's "tail element" makes handling easier.
- ▶ Triangular pin connection hole allows for installer-friendly construction adjustments.
- ▶ The larger core area of Series II allows for rapid filling of drainage material.

Aesthetics

- ▶ Sculptured (tri-planar) or straight face options.
- ▶ Weathered or "antiqued" finish options and additional face options are available in select markets.

Design Versatility

- ▶ Near vertical or battered setback options available.
- ▶ Cores allow handrail or fence posts to be incorporated into the wall.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

Note: Keystone also offers a beveled face design for the Compac unit, Keystone Victorian Stone™. This product is only available in certain markets. Contact your local Keystone representative for additional information.

Keystone's Family of Products

KEYSTONE COUNTRY MANOR®

Random and rugged, yet blended with color and character, these high strength concrete modules appear as natural stone, but have the latest built-in technology of the Keystone pin ensured connection.



"Old World Charm"

*6"h x 10"d x 16"/14"w
(150 x 250 x 400/350mm)
60 lbs. (27 kg)



*6"h x 10"d x 12"/10"w
(150 x 250 x 300/250mm)
40 lbs. (18 kg)



*6"h x 10"d x 12"/12"w
(150 x 250 x 300/300mm)
45 lbs. (20 kg)
(Two smooth ends for vertical stack capability)



*6"h x 10"d x 8"/10"w
(150 x 250 x 200/250mm)
45 lbs. (20 kg)



*6"h x 10"d x 6"/8"w
(150 x 250 x 150/200mm)
35 lbs. (16 kg)



*6"h x 10"d x 4"/6"w
(150 x 250 x 100/150mm)
25 lbs. (11 kg)



Keystone Country Manor Cap Unit
*3"h x 12"d x 14"/8"w
(75 x 300 x 355/200mm)
30 lbs. (14 kg)

Note: The number and size of units in the Keystone Country Manor system vary by region. The most common configurations are the 3 piece, 5 piece, and 6 piece systems. Contact your local representative for additional details.

KEY FEATURES

Three or More Face Dimensions

Structural Integrity

- ▶ High strength pin connection system.

Ease of Installation

- ▶ Units are packaged in sets which eliminates the need to pull from multiple pallets to maintain random appearance.

Aesthetics

- ▶ Three textured sides on each unit.
- ▶ Antiqued finish provides natural stone appearance.
- ▶ Available color blends further enhance natural stone look.

Design Versatility

- ▶ Allows for construction of small freestanding walls, parapet walls, pilasters and columns in addition to retaining walls.
- ▶ Multiple pin positions allow for near vertical, 9.5 degree setback and to randomly pull a unit forward to accent wall.
- ▶ Provides greatest degree of random layout due to variations from unit side dimensions.
- ▶ Each unit has two side dimensions and can be used in multiple wall positions.
- ▶ Any unit can be used as an exposed end unit or a 90° corner.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

KEYSTONE STONEGATE™ COUNTRY MANOR®

Featuring the look of smooth, weathered stone of quaint European towns, Stonegate Country Manor® has all the best features of the original Keystone Country Manor®, but with a smooth face resembling cut stone for a more refined look.

*“Old World Charm” with a weathered,
cut stone appearance*



*Large unit
6"h x 10"d x 16"/14"w
(150 x 250 x 400/350mm)
60 lbs. (27 kg)



*Medium unit
6"h x 10"d x 12"/10"w
(150 x 250 x 300/250mm)
40 lbs. (18 kg)



*Small unit
6"h x 10"d x 6"/4"w
(150 x 250 x 150/100mm)
25 lbs. (11 kg)

KEY FEATURES

Three or More Face Dimensions

Structural Integrity

- ▶ High strength pin connection system.

Ease of Installation

- ▶ Units are packaged in sets which eliminates the need to pull from multiple pallets to maintain random appearance.

Aesthetics

- ▶ Three textured sides on each unit.
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- ▶ Multiple pin positions allow for near vertical, 9.5 degree setback and to randomly pull a unit forward to accent wall.
- ▶ Provides greatest degree of random layout due to variations from unit side dimensions.
- ▶ Each unit has two side dimensions and can be used in multiple wall positions.
- ▶ Any unit can be used as an exposed end unit or a 90° corner.



Note: The number and size of units in the Keystone Stonegate Country Manor system vary by region. The most common configurations are the 3 piece, 5 piece, and 6 piece systems. Contact your local representative for additional details.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

Keystone's Family of Products

KEYSTONE CENTURY WALL®

Designed specifically for taller wall structures and heavy loading conditions, Keystone Century Wall® blends the distinctive look and character of natural stone with the structural integrity that lets you build with confidence.

"Old World Charm on a Grand Scale"



*Large unit
8"h x 12"d x 18"w
(200 x 300 x 450mm)
93 lbs. (42 kg)



*Medium unit
8"h x 12"d x 11"w
(200 x 300 x 280mm)
58 lbs. (26 kg)



*Small unit
8"h x 12"d x 7"w
(200 x 300 x 180mm)
37 lbs. (17 kg)



*90° Corner unit
Available in left and right
(left shown)
8"h x 12"d x 16"w
(200 x 300 x 400mm)
78 lbs. (35 kg)



KEY FEATURES

Three or More Face Dimensions

Structural Integrity

- ▶ Higher unit-to-unit shear resistance.
- ▶ Increased vertical drainage through face units.
- ▶ Open cores allow for gravel interlock across block interfaces.
- ▶ Improves connection strength between face units and geogrid.
- ▶ Pins with shouldered caps provide positive unit shear resistance.

Ease of Installation

- ▶ Unit shape's tail element makes handling easier.

Aesthetics

- ▶ Three or more face dimensions offers random appearance.
- ▶ Natural stone look.
- ▶ Multi-color blends and roughened, antiqued face available in most markets.

Design Versatility

- ▶ Near vertical or battered setback options available through two pin positions.

**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

KEYSTONE HALF CENTURY WALL®

Keystone Half Century Wall® offers the distinctive appearance and character of a random-pattern, hand-crafted stone wall with the structural integrity, performance, and environmental friendliness of concrete. The three different-sized units make it fast and almost effortless to create visually stunning and heavy-duty wall structures. Keystone Half Century Wall can be combined with Keystone Century Wall™ or used on its own for almost any application.



*Large unit
4"h x 12"d x 18"w
(100 x 300 x 450mm)
46 lbs. (21 kg)



*Medium unit
4"h x 12"d x 11"w
(100 x 300 x 280mm)
29 lbs. (13 kg)



*Small unit
4"h x 12"d x 7"w
(100 x 300 x 180mm)
18 lbs. (8 kg)



KEY FEATURES

Three or More Face Dimensions

Structural Integrity

- ▶ Higher unit-to-unit shear resistance.
- ▶ Increased vertical drainage through face units.
- ▶ Open cores allow for gravel interlock across block interfaces.
- ▶ Improves connection strength between face units and geogrid.
- ▶ Pins with shouldered caps provide positive unit shear resistance.

Ease of Installation

- ▶ Unit shape's tail element makes handling easier.

Aesthetics

- ▶ Three or more face dimensions offers random appearance.
- ▶ Natural stone look.
- ▶ Multi-color blends and roughened, antiqued face available in most markets.

Design Versatility

- ▶ Near vertical or battered setback options available through two pin positions.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

Keystone's Family of Products

KEYSTONE 133ELITE®

Bigger. Better. Faster. The forward-thinking design of the Keystone 133Elite® combines great looks with increased efficiency. In addition to conventional textures, Keystone's StoneArt embossing technology can produce units with specially-designed natural textures.



***Size:**

- 8" h x 11 1/2" d x 24" w
(200 x 290 x 610mm)

***Weight:**

- 90 lbs. (41 kg)



KEY FEATURES

High Strength Pin Connection System

Structural Integrity

- ▶ Designed specifically for tall wall applications.
- ▶ High strength pins ensure each unit is securely interlocked within the wall face.
- ▶ Mechanical connection with geogrid soil reinforcement ensure proper tension and maximum efficiency of geogrid.

Ease of Installation

- ▶ Innovative unit design allows for a 33% reduction in the number of pins required.
- ▶ The mid-range weight allows one-person installation, maximizing man-hours.
- ▶ Unit tail section provides easy handling for installers.

Aesthetics

- ▶ Larger-scale dimensions complement the look and feel of tall walls.
- ▶ Keystone's StoneArt embossing technology allows units to be produced with a variety of high-quality textures.
- ▶ Wide variety of color produced in selected areas.

Design Versatility

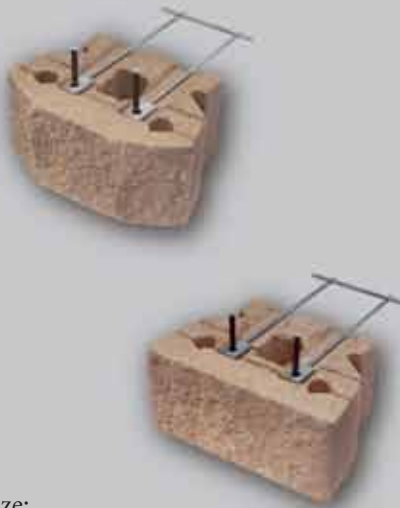
- ▶ Convex and concave curves and 90° corners can be constructed.
- ▶ Specially-designed natural textures embossed on the units offer flexibility in creating different appearances for a wall.
- ▶ Near vertical setback option available.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

KEYSTONE KEYSTEEL SQ. FT. PANEL SYSTEM

The KeySteel Sq. Ft. Panel System is specifically designed for use in the highway and heavy construction industries using the patented Keystone modular concrete units and inextensible steel reinforcement to develop a durable, aesthetically appealing, and cost effective reinforced soil retaining wall structure.



***Size:**

- 8”h x 12”d x 18”w
(200 x 300 x 450mm)

Exposed Face Area:

- 1 sq. ft. - 8” x 18”

***Weight:**

- 85 lbs. (39 kg)



KEY FEATURES

All of the features of the Keystone Compac units plus:

Inextensible Steel Reinforcement

- ▶ Significantly reduced deflection or movement within the reinforced mass. Deflections with steel reinforcement are reduced by over 66% compared to geosynthetic reinforcement.
- ▶ Performance is not time dependent such as polymer creep effects with extensible reinforcing (geogrids).
- ▶ Backfill of up to 4” to 6” maximum size can be used. With geosynthetics, the maximum size is generally limited to approximately 3/4” due to erratic resistance and installation damage with larger particle sizes.

Designed to More Rigorous AASHTO Standards

- ▶ Increased factors of safety and confidence in wall system performance.

Intended for the Most Demanding Applications

- ▶ Deflection sensitive applications such as:
 - Bridge abutments
 - Tall walls
 - Walls with heavy surcharges
 - Walls where loads or structures bear on or immediately behind the reinforced mass
- ▶ Transportation or other projects requiring AASHTO compliance.
- ▶ HITEC Evaluation #40478.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

Keystone's Family of Products

KEYSTONE LIPPED LANDSCAPE UNITS

Keystone lipped products are lightweight and easy-to-handle. No special tools are required and the secure, interlocking design makes installation easy. These units are made of high-strength, low-absorption concrete to provide permanent, environmentally safe walls that are virtually maintenance free.

Keystone lipped products have the natural look of quarried stone and are available in a wide variety of colors that blend with any landscape. Keystone's lipped products are recommended for small applications.



***Keystone Legacy Stone®**
6"h x 10³/₈"d x 16"w
(150 x 260 x 400mm)
50 lbs. (23 kg)



***Keystone Garden Wall**
4"h x 9"d x 12"w
(100 x 230 x 300mm)
29 lbs. (13 kg)



***Keystone Sedona Stone®**
3"h x 5¹/₄"d x 8"w
(75 x 135 x 200mm)
8 lbs. (3¹/₂ kg)

KEY FEATURES

Build It Yourself Landscape Products

Adds Beauty

- ▶ Keystone lipped products have the natural look of quarried stone and its earth-tone colors blend in with any landscape.

Easy to Install

- ▶ Lightweight and easy to handle with no special tools required.
- ▶ Secure, interlocking design makes installation easy.

A Solid and Durable Solution

- ▶ Units are made of high-strength, low-absorption concrete to provide permanent, maintenance-free walls that are environmentally safe.

Design Versatility

- ▶ Keystone lipped products enable you to build straight, curved, or terraced walls to fit the contours of the landscape.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer.*

KEYSTONE LANDSCAPE SERIES OF PRODUCTS

Keystone's Landscape Series of products is specifically designed to provide a superior, natural stone aesthetic in easy-to-install and affordable products. While each product has an individual look, all utilize Keystone's molded fiberglass pin connection system. This pin connection system provides additional structural integrity and performance and allows for easier alignment.

The Keystone Landscape Series provides the ultimate in design flexibility. Each product allows for near vertical or positive setback and can be used in multiple wall positions.



***Keystone Palazzo Stone™**
4"h x 8"d x 12"/9"w
(100 x 200 x 300/230mm)
25 lbs. (11 kg)

- Angled on both sides providing different face lengths
- Finished on two sides allowing for a random-pattern look without multiple pieces.



***Keystone Verazzo Stone™**
6"h x 10¹/₂"d x 16"/12"w
(150 x 265 x 400/300mm)
68 lbs. (31 kg)

- Angled on both sides providing different face lengths.
- Finished on two sides allowing for a random-pattern look without multiple pieces.



***Keystone Caprezzo Stone™**
4"h x 10¹/₂"d x 18"/14"w
(100 x 265 x 450/350mm)
48 lbs. (22 kg)

- Angled on both sides providing different face lengths.



***Keystone Potenzo Stone™**
4"h x 8"d x 11"/12"w
(100 x 200 x 280/300mm)
30 lbs. (14 kg)



4"h x 8"d x 10"/11"w
(100 x 200 x 255/280mm)
25 lbs. (11 kg)



4"h x 8"d x 5"/6"w
(100 x 200 x 130/150mm)
15 lbs. (7 kg)



4"h x 8"d x 4"/5"w
(100 x 200 x 100/130mm)
10 lbs. (4¹/₂ kg)

- Four different-sized units for the highest degree of random layout.



**Note: Unit colors, dimensions, weight, and availability vary by manufacturer. The Keystone Landscape Series of Products are new and not available in all markets. Contact your local Keystone representative for additional information.*

Keystone's Family of Products

KEYSTONE FIBERGLASS PINS

The Keystone patented system features high strength, pultruded fiberglass pins that provide a true shear connector, geogrid proof positive holder, and an alignment device all in one piece.

- ▶ Maintains a positive mechanical connection between adjacent units and between units and geogrid.
- ▶ Easy alignment and simple construction procedure.
- ▶ With pin method, units maintain a running bond for aesthetics and structural integrity.
- ▶ Each unit is integrally connected with every other face unit.
- ▶ Holds the geogrid in place during construction when normal confining pressures are low.
- ▶ Provides a visible connection location and method for the installation contractor.
- ▶ Provides easy quality control inspection of proper geogrid placement.
- ▶ Pins are made of high strength pultruded fiberglass. They are strong in shear, durable, rust-proof, and are not negatively affected by temperature changes.



KEYSTONE UNIVERSAL CAP

A Keystone wall is not complete without the "capping touch"!



*Size:

- 4" h x 10½" d x 18"/14" w
(150 x 265 x 450/350mm)

*Weight:

- 48 lbs. (22 kg)

KEYSTONE KAPSTONES®

Another way to complete a Keystone wall with the perfect finishing touch is to use Keystone KapStones®. These peaked column caps have the natural beauty and durability of cut stone, without the heaviness or high cost. Keystone KapStones also contain natural aggregates, helping to create the authentic textures of limestone, granite, or flagstone.



*Size:

- 4½" h x 24" d x 24" w
(115 x 610 x 610mm)

*Weight:

- 15 lbs. (7 kg)



*Note: Unit colors, dimensions, weight, and availability vary by manufacturer.

Simply Beautiful



Endless Applications



GOVERNMENTAL

The rigorous standards for government projects are routinely met by Keystone products and services. Government agencies that use Keystone include:

- ▶ U.S. Federal Highway Administration
- ▶ State Department of Transportation Roadway and Freeway Projects
- ▶ Army Corps of Engineers
- ▶ Department of Transportation for individual U.S. states



INDUSTRIAL

The extreme heavy-loading conditions and high-traffic areas of industrial sites produce very demanding applications. Keystone walls can be built to withstand and overcome even the most extreme site conditions and projects, similar to the one shown, have taken on daily static loads of more than 200 tons. With proper engineering and installation, Keystone products can also be used for building in seismically active areas.



RECREATIONAL

From golf courses to amphitheaters, recreational applications are highly visible projects requiring durable and permanent solutions that will maintain a superior aesthetic throughout. Keystone products require minimal maintenance and create structures that maintain both their function and beauty.



COMMERCIAL

Creating buildable land for new construction or redevelopment is a major component in today's land management. The design versatility



and strength of Keystone products allow developers and owners to build on poor soils, steep slopes and non-uniform foundations. With proper engineering and installation, Keystone provides solutions that fully maximize buildable space.



PUBLIC WORKS

Municipal administrators throughout the country choose Keystone for their public works projects. In schools, city offices, courthouses, libraries, police and fire stations, public pools, playgrounds, city parks and more, Keystone products offer what city planners look for in site solutions – versatility, durability, and cost-savings.



RESIDENTIAL

Keystone landscape products add beauty and value to any home. With a wide variety of superior natural stone aesthetics, unit sizes, textures and colors, Keystone provides limitless possibilities to create unique outdoor living environments that last a lifetime.



The Many Faces of Keystone

SCULPTURED ROCK FACE

Natural stone look with rich texture and warm shadows.



STRAIGHT FACE

Refined design with tailored lines.



A N T I Q U E D F A C E



Hand-crafted stone appearance
with random patterns.



C R E A T I V E F A C E S

Colors • Patterns • Veneering • Texture Combinations



Limitless Buildability

CURVES

Convex or concave curves are easy to construct with Keystone products and will add gentle grace to any project. For walls with several concave curves, use the near vertical setback pin placement option for best results.



STEPS

Steps and stairs are attractive design options that create more interest within landscapes. Steps and stairs can be customized to fit a variety of applications and built without complication either before, during or after construction is completed.

C O R N E R S



C O P I N G



F R E E S T A N D I N G





TERRACES

Keystone products can also be used to create terraces or tiered walls. Terraces give walls a multi-dimensional look and also provide a planting surface to enhance the overall design.

CREATIVE OPTIONS

As a distinctive detail to any retaining wall, Keystone Retaining Walls allow for creative options in color or texture geometries in the wall. Create a personalized look for your project. Keystone's versatility can fulfill any designer's creativity!



W A T E R



A M P H I T H E A T E R



P L A N T A B L E



The Technical Side

The two most common retaining wall structures built today are simple gravity walls and larger composite reinforced soil wall structures. Keystone offers products and specific design methodology for both structure types conforming to local building codes and national standards.

GRAVITY WALLS

One of the most basic types of retaining walls, the gravity wall, relies on its mass and cross-sectional geometry to resist the earth pressure that is exerting force to move the structure in a lateral direction. Keystone Retaining Wall Systems are able to resist lateral pressure with their unit weight and deep embedment shape. The mortarless, yet structurally interconnected, Keystone units also promote the free flow of water drainage to prevent hydrostatic loads. For low, non-critical applications, Keystone products make highly cost-effective gravity wall structures.



REINFORCED SOIL WALLS

For taller or more critical walls, Keystone units are combined with soil reinforcement options (such as extensible geogrids, geotextiles, inextensible tie-back anchors, or galvanized steel ladder reinforcing) to create larger composite structures. With this properly designed combination, the reinforced soil mass can support greater earth pressure and surcharge loads. These composite structures have permitted the construction of retaining wall structures over 60' (18 m) high. Call your Keystone representative to see which option will work best for your project.



GEOGRID REINFORCEMENT

Since the early 1980's, geogrids have proven successful in providing durable soil reinforcement for the retaining wall industry. Proper design methodology today incorporates the laboratory tested connection strength of concrete units and geogrid in all reinforced retaining wall systems. Geogrids are made from high-density polyethylene or high-tenacity woven polyester yarns.

THE ADVANTAGES OF GEOGRID REINFORCED STRUCTURES INCLUDE:

- ▶ Economical construction by utilizing a wider range of site soils for the reinforced fill zone, minimizing the need to import select fill.
- ▶ Construct walls faster without the delays required for shop drawings, forming, steel placement and curing time of site cast concrete; the wall structure and backfill are constructed at the same time.
- ▶ Eliminates the need for deep structural footing and excavation due to flexible versus rigid structure system.
- ▶ Provides durability; long term performance resists effects of water, micro-organisms, alkali or acidic soils.

SYSTEM DIFFERENTIATION

The product design features of the structural units differentiate Keystone from all of the competitors. Keystone structural products are specifically designed and engineered for optimum efficiency with all system components. The interaction of these system components is critical to wall performance and defines Keystone as a true “wall system”.

SYSTEM COMPONENTS

The components that make up a segmental retaining wall include: concrete facing units, geogrid reinforcement, drainage material, and fiberglass pins. The high-strength fiberglass pins are the core of the Keystone system and integrate all of the components. The open cell design of Keystone structural products creates a matrix for unit drainage fill that increases unit-to-unit shear resistance and pull-out capacity of geogrids and also adds stability within the wall. Geogrid reinforcement material, connected to high-strength pins and confined in this cell matrix, provides a strong and secure connection within the Keystone system. Horizontal geogrid placement, from the Keystone wall over properly compacted soils, creates a reinforced soil mass that is connected with the wall system.



SYSTEM PERFORMANCE

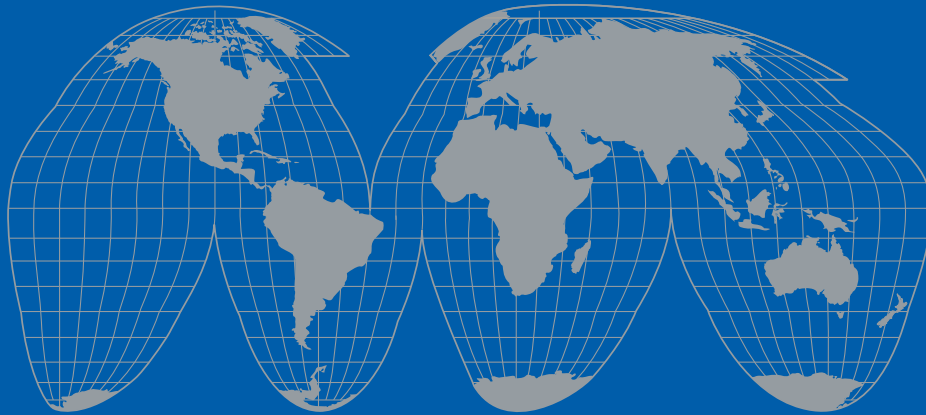
When you have a critical retaining wall application, demand the proven performance of a Keystone Retaining Wall System. Keystone’s system components support soil compaction efforts, unit installation, and the drainage fill that is necessary for the construction and performance of soil reinforced walls. For your next retaining wall project, specify the only system that is designed to integrate all of these system components for optimum performance.

*The interaction of these
system components
defines Keystone as a
true “wall system”.*





Retaining Excellence™



We reserve the right to improve our products and make changes in the specifications and design without notice. The information contained herein has been compiled by KEYSTONE and to the best of our knowledge, accurately represents the KEYSTONE product use in the applications which are illustrated. Final determination of the suitability for the use contemplated and its manner of use are the sole responsibility of the user.

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