

The Keystone Retaining Wall System is the structurally sound, aesthetically appealing, economical solution for retaining walls. Keystone units are easily installed using a patented fiberglass pin system that ensures strong shear connection.

From backyard landscaping to large, load-bearing reinforced structures, Keystone units are ideally suited for any application.



### STANDARD UNIT

For tall walls and critical structures.

SIZE: 8" h x 18" w x 21.5" d  
EXPOSED FACE AREA: 1 sq. ft.  
WEIGHT: 105 lbs.



### COMPAC UNIT

For smaller walls. Lighter and easier to handle than the Standard Unit.

SIZE: 8" h x 18" w x 12" d  
EXPOSED FACE AREA: 1 sq. ft.  
WEIGHT: 90 lbs.



### VICTORIAN STONE

For smaller walls. Lighter and easier to handle than the Standard Unit.

SIZE: 8" h x 18" w x 12" d  
EXPOSED FACE AREA: 1 sq. ft.  
WEIGHT: 95 lbs.



### MINI UNIT

For small, non-critical applications.

SIZE: 4" h x 18" w x 10.5" d  
EXPOSED FACE AREA: 0.5 sq. ft.  
WEIGHT: 50 lbs.



UNIVERSAL CAP



STRAIGHT CAP



ANGLE CAP

### COMPAC III UNIT

- Available in 3 shades
- 18% lighter than the original Compac Unit
- Keystone KeyKut™ technology gives an antiqued finish



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### SEGMENTAL RETAINING WALL UNITS

for commercial walls and residential landscaping projects



# KEYSTONE PRODUCT INSTALLATION

## STEP 1: PREPARE THE BASE LEVELING PAD

Remove all surface vegetation and debris. Do not use this material as backfill.

After selecting the location and length of the wall, excavate the base trench to the designed width and depth. Start the leveling pad at the lowest elevation of the wall. Level the prepared base with 6 in. of well-compacted granular fill (gravel, road base or 0.5 in. to 0.75 in. crushed stone). Compact to 95% Standard Proctor or greater.

Keystone recommends additional trench depth for below grade placement of Keystone units using a ratio of 1 in. below grade for each 8 in. of wall height above grade (to a maximum of 3 units buried). This lowers the base course below grade locking the wall in place and also helps prevent erosion and scouring at the base of the wall. The base trench should be wide enough to allow for the Keystone unit and drainage zone.

An alternative to using a compacted, granular material leveling pad is a non-reinforced concrete leveling pad. In some cases, contractors find this a time-saving approach.

Walls built to a level condition on a sloping grade require a stepped base. It is best to work out the stepped base as the wall steps up in elevation. If a concrete leveling pad is used, the step-up height needs to exactly match the Keystone unit height.

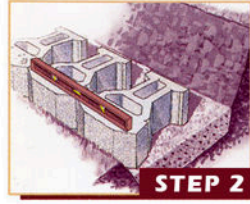
**STEP 2: INSTALL THE BASE COURSE** Place the first course of Keystone units side by side (with sides touching) on the prepared base, with the paired pin holes facing up. Make sure each unit is level—side to side and front to back. The first course is critical for accurate and acceptable results. For alignment of straight walls, use the pins or the straight back edge of the unit. Using the front face will give irregular alignment due to the rough split texture.

**STEP 3: INSERT THE INTERLOCKING FIBERGLASS PINS** Place the reinforced fiberglass pins into the paired holes (2) of each Keystone unit. Pins of adjoining units should be 12 in. on center. Once placed, the pins create an automatic setback for the additional courses. According to wall requirements and design, place pins in the front holes for near vertical (0.125 in.) setback and the rear holes for 1.25 in. setback per course. For constructing curved walls, use the front pin position for best results. Minimum radius for convex and concave curves is 3 ft 6 in.

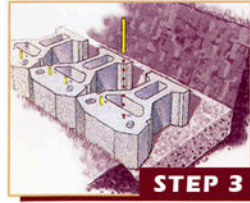
**STEP 4: INSTALL AND COMPACT BACKFILL** Fill in all voids—in and between Keystone units—using 0.5 in. to



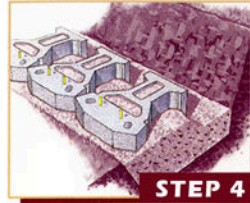
STEP 1



STEP 2



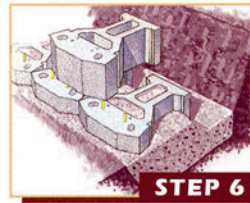
STEP 3



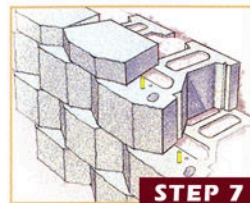
STEP 4



STEP 5



STEP 6



STEP 7

0.75 in. clean crushed stone. Place drain zone behind the units as required to achieve total 2 ft depth of drainage zone from unit face. Peagravel should not be used. Compact material in unit cavities appropriately to eliminate settling.

Next, if economical, use existing soils for backfill behind drainage zone. (Heavy clays or organic soils are not recommended due to water-holding properties.) In some situations, poor site soils will cause higher reinforcement costs, so economics of using import soils should be reviewed.

Compact soils to a minimum of 95% Standard Proctor compaction, placing fill in 8 in. lifts on a course-by-course basis or as specified by a Professional Engineer. (Use only walk-behind mechanical compaction equipment within 3 ft behind the units to avoid localized overstress.) Sweep off any pebbles or debris so the next Keystone units rest evenly upon the layer below.

**STEP 5: GEOGRID INSTALLATION** For taller or more critical walls that require use of geogrid, continue the installation process with Step 5. If geogrid is not required, skip to Step 6.

**5A: EXCAVATE REINFORCED SOIL AREA** Remove existing soils in the reinforced soil area to the maximum embedment length of the geogrid design. Provide a generally level soil condition behind the wall units for the placement of each geogrid layer.

**5B: CUT GEOGRID** Cut sections from geogrid roll to the specified length (embedment depth). Geogrid roll direction is from the wall toward the embankment. Check manufacturer's criteria for biaxial or uniaxial geogrids. In most cases, correct orientation is to roll the geogrid perpendicular to the wall face.

**5C: INSTALL GEOGRID** Hook geogrid over the Keystone fiberglass pins to ensure a positive mechanical connection between the unit and geogrid.

**5D: SECURE GEOGRID** Pull the pinned geogrid taut to eliminate loose folds. Stake or secure back edge of geogrid before and during backfill and compaction. Remove stakes, if desired, once backfill is placed. Place additional sections of geogrid, abutting each other, for continuous coverage at each layer.

**5E: INSTALL NEXT COURSE OF KEYSTONE UNITS**

**5F: PLACE COMPACTED BACKFILL OVER GEOGRID IN 8" LIFTS**

**STEP 6: INSTALL ADDITIONAL COURSE** Place the next course of Keystone units over the fiberglass pins, fitting the pins into the kidney-shaped recesses. Center the unit over the two underlying units as shown. Visually sight down in the kidney-shaped recess for pin positioning. Pull the Keystone unit toward the face of the wall until it makes full contact with both pins. For each remaining course, repeat Steps 3 - 6.

**STEP 7: INSTALL KEYSTONE CAPS** Complete your wall with Keystone Cap units. In areas of high public usage, apply cap adhesive on the top surface of the last course before applying cap units.

Place the Keystone Cap unit over the pins on the underlying unit. Pull the Cap unit forward to the automatic setback position. Backfill and compact soils behind wall to finish grade. Finish grade with appropriate plastic soil cap or drainage swale to minimize surface water flow into wall/soil structure.



GEOGRID



FIBERGLASS PINS



CAP ADHESIVE



For more information, please visit  
[www.keystonewalls.com](http://www.keystonewalls.com)