Stonewall™ Collection Stairs Installation

STAIRS

A stairway built into a Stonewall retaining wall adds a functional and beautiful dimension to any landscape design. Building stairs with Stonewall is relatively simple. Stonewall units are used for the side walls and risers, and natural stone, such as limestone, bluestone or granite is recommended for the treads.

Most stairs are 48" wide; otherwise lay them out in multiples of 12". You will need to comply with minimum requirements for riser height and tread depth. Check the building code for your area. Determine the location of the stairway. Be sure to allow enough space behind the wall, as each stair will step back 12".

It is better to construct the corners and side walls independent of the risers. Start by building corners, as shown in the Corner Section below, on each side of the stairs. To avoid the automatic step-back as you construct the side walls, do not use pins to connect the full size Stonewall units. Instead, lay each course vertically with no setback and be sure to bond the units together with construction-grade adhesive. Otherwise, you will need to cut the riser and treads for each stair to accommodate the step back developed in the side walls. Backfill the area behind the units and the cores with 3/4" stone as you go up, using filter fabric to keep the soil from infiltrating the drainage stone.

CORNERS

Outside Corners: When it comes to building outside corners, Stonewall gives you two choices and both are easy to do. The corners can be a simple convex curve based on a radius discussed previously, or they can be built at a 90° angle. When incorporating 90° corners, you will need to order Stonewall Corner units. It is best to start in a corner and build out. Follow these simple steps to construct 90° corners (Fig. 1).

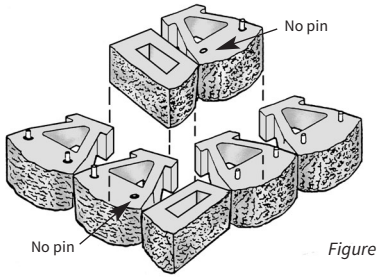

Figure 1

1) As you lay out the location of the wall, mark the position of the corner with a stake and use string lines to indicate the line of the intersecting walls. When digging the trench, allow for additional space at the corner location.

2) Once the gravel base has been placed and compacted to the desired elevation, mark the exact location of the corner. Use a builder's square to ensure an accurate 90° angle, or lay it out using the 3-4-5 triangle method.

3) Carefully position a Stonewall Corner unit on the base where the intersecting lines meet in the corner. Then using a level, align and plumb the units. Continue the wall on each side using Stonewall units, except do not put in a pin in the closest hole of the block sitting adjacent to the shortest face of the corner. Backfill with 3/4" stone.

4) For the second course, position a Stonewall Corner unit in the alternate direction onto the corner block in place. Place regular Stonewall units on each side by fitting the slot in the bottom of the units over the pins in the block in the first row, once again leaving out a pin in the closest hole of the block sitting adjacent to the shortest face of the corner.

5) Continue this procedure for each course remembering to alternate the Stonewall Corner units 90° every course to maintain the running bond pattern. When the wall reaches the height you desire, use the coping unit of your choice to finish the corner.

Note: Apply several 3/8" beads of construction-grade adhesive to the top of each corner unit immediately prior to placing the successive corner unit. If your wall has 90° corners on each end, it will be necessary to cut units within the wall to accommodate the wall batter and to maintain the running bond pattern.

Inside Corners: If your wall has inside corners, Stonewall gives you several choices here as well. You can build them as a concave curved wall or at 90°. When building them at 90°, one method is to abut one of the walls against the other using half blocks in every other course to keep it flush to the adjoining wall. The second way ties the walls into each other by overlapping block from one wall into the other in alternating courses. Be sure to apply construction-grade adhesive to the blocks in the corner in every course (Fig. 2).

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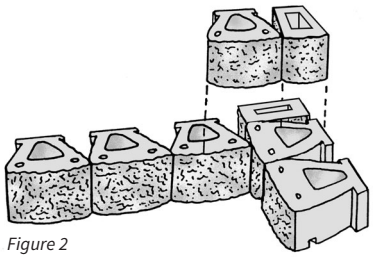

Figure 2

Stair Construction Using the "Cut" Method

With the "cut" method (Fig. 3), a separate gravel base is used under each stair. Start by preparing the footing of the first step. Place and compact gravel in 2-3" layers until the base is at least 6" thick. For 6" high risers, the top of the base should be about 6" below the finished grade leading up to the step using 2" thick stone as treads. Note: If the subgrade is soft, or for added stability, use 2 courses of Stonewall to construct each riser. Place a row of Stonewall units onto the base across the width of the stair opening, then level them from front to back and side to side. The top of the block should be 2 1/2" above finished grade. For 7" and 8" high risers, increase the dimensions by 1" and 2" respectively.

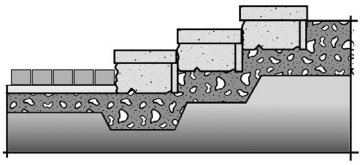

Figure 3

After the risers for the first step have been placed, prepare the footing for the next step and repeat the process. Continue to lay successive risers in the same manner for the number of stairs you need. Fill all of the units in each of the stair risers and the spaces between them with 1 1/2" processed gravel and sweep the block clean. Apply Stair Treads as described in the next column.

Stair Construction Using the "Fill" Method

Although more units are required using the "fill" method, it may prove faster and easier, especially if there are a small number of steps. Simply excavate the entire stairway area straight back, then place and compact a 6" thick gravel base as a level foundation. Use multiple courses of wall units to build up the risers for the number of steps you want. This method results in an 8" rise (Fig. 4). Finish the treads as noted below.

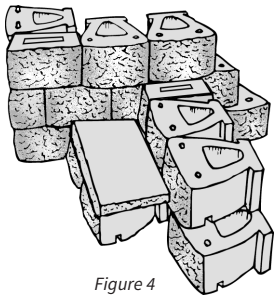

Figure 4

Stair Treads

We recommend using stone treads, such as limestone, bluestone or granite to complement the wall with an attractive seamless look. Secure your coping unit to the wall with an acrylic-based mortar or with construction-grade SRW Adhesive that's been formulated for use with concrete. Simply apply several 3/8" beads to the top surface of the last course of wall units (Fig. 5). It's best to do only 3 or 4 units at a time to prevent the adhesive from skinning over. Follow the directions for use on the label. When setting the coping units, apply firm pressure to secure them in place. Position the treads to provide a 1" overhang. Allow the adhesive to cure at least 24 hours before opening the stairs to traffic.

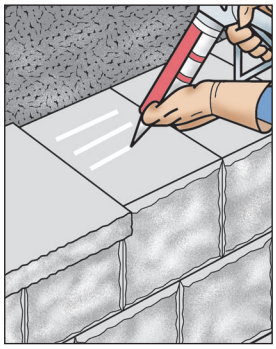

Figure 5

Important! *If subjected to deicing chemicals, manufactured coping units must be treated with a non-film forming, penetrating-type sealer such as SRW PSX.*

Always wear proper safety equipment when cutting or sawing concrete products.

A white deposit known as efflorescence may appear naturally on any concrete or masonry product. It does not affect the structural integrity and will dissipate over time. Efflorescence is not indicative of a flawed product. For more information, ask for our Efflorescence Advisory.

Pavers by Ideal™

Ideal Concrete Block Co.