

CLAY AND SILT SOIL $\phi = 26^\circ$ $\gamma = 120 \text{ pcf (19 kN/cubic meter)}$	SILTY /CLAYEY SAND SOIL $\phi = 30^\circ$ $\gamma = 120 \text{ pcf (19 kN/cubic meter)}$	CLEAN SAND AND GRAVEL SOIL $\phi = 34^\circ$ $\gamma = 120 \text{ pcf (19 kN/cubic meter)}$
<p>NO SLOPES OR SURCHARGES</p>	<p>NO SLOPES OR SURCHARGES</p>	<p>NO SLOPES OR SURCHARGES</p>
1.0 FT. (300mm) 	1.0 FT. (300mm) 	1.0 FT. (300mm)
2.0 FT. (600mm) 	2.0 FT. (600mm) 	2.0 FT. (600mm)
3.0 FT. (900mm) 	3.0 FT. (900mm) 	3.0 FT. (900mm)
4.0 FT. (1200mm) 	4.0 FT. (1200mm) 	4.0 FT. (1200mm)
5.0 FT. (1500mm) 	5.0 FT. (1500mm) 	5.0 FT. (1500mm)
6.0 FT. (1800mm) 	6.0 FT. (1800mm) 	6.0 FT. (1800mm)

BELAIR WALL™ INSTALLATION TIPS

RETAINING WALL

GETTING STARTED

Use best practices to lay out and build walls. See Belgard.biz for standard installation details. The information in this brochure will help you get started using BelAir Wall.

BASE COURSE

Since the 6-inch units are palletized together, it is easiest to use both the 6" x 16" and 6" x 8" units to build the base. This will help maintain the ratio of one to one with the units and will eliminate the need to pick around the smaller units on the pallet and save time. Remove the rear lip from the unit to ensure proper contact with the gravel base. Due to the manufacturing process of this unit, pitch the base course back slightly to keep the wall level on higher courses.

COMPACTION

Compaction is critical to the success of any wall and this is no different with the BelAir Wall product. Keep heavy compaction equipment 4 feet away from the face of the wall and make sure you are compacting in proper lifts according to your equipment. After compaction, tap the back of the units with a rubber mallet or dead-blow hammer to ensure the unit has remained seated against the unit below.

90° CORNERS

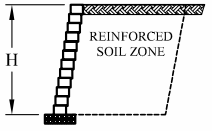
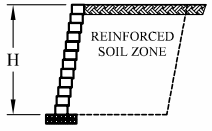
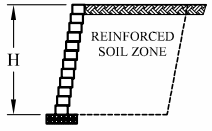



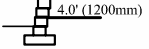


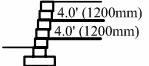
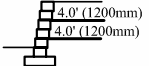
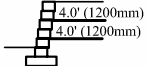
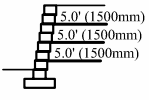
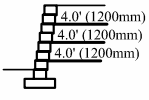
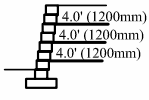
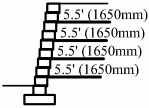
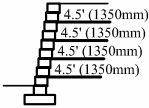
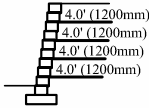
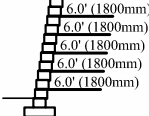
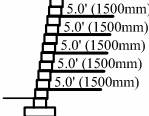
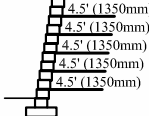
Corners are built by using the corner/column unit in an alternating fashion. Reversing the unit direction back and forth also allows them to be integrated into the patterns with little effort. Depending on the wall layout, there may be a need to go off the pattern and randomize wall units near the corner to blend together. Glue should be applied to every corner unit from bottom to top. Corner units should be set back to reflect the batter of the wall units.

USING 8-INCH UNITS IN CONSTRUCTION

The 8-inch-wide units in both the 3-inch and 6-inch heights have two shapes. One has an offset angle on the left side and the other has an offset on the right. Either unit can be used in most situations. In a curved wall, it may be necessary to select one shape or the other. An easy rule of thumb would be that on a curve, if two 8-inch units of either height meet on a 16-inch unit, put the two 90-degree sides together to form a 16-inch unit.

BUILDING AN OUTSIDE RADIUS CURVE

A function of geometry with battered, multiple-height walls is that the outside radius gets smaller and smaller as the wall gets taller. As a result, the spaces between the units also shrink. This requires some shaving or trimming of the units to fit. Plan to shave 3-inch units as you build. This will save time and saw blades. When removing a 1/2 inch or less, a small handheld grinder will be easier and quicker to use than a large saw.

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<p>1.0 FT. (300mm)</p>  <p>NO REINFORCEMENT REQUIRED</p>	<p>1.0 FT. (300mm)</p>  <p>NO REINFORCEMENT REQUIRED</p>	<p>1.0 FT. (300mm)</p>  <p>NO REINFORCEMENT REQUIRED</p>
<p>2.0 FT. (600mm)</p>  <p>4.0' (1200mm)</p>	<p>2.0 FT. (600mm)</p>  <p>NO REINFORCEMENT REQUIRED</p>	<p>2.0 FT. (600mm)</p>  <p>NO REINFORCEMENT REQUIRED</p>
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<p>4.0 FT. (1200mm)</p>  <p>5.0' (1500mm) 5.0' (1500mm) 5.0' (1500mm)</p>	<p>4.0 FT. (1200mm)</p>  <p>4.0' (1200mm) 4.0' (1200mm) 4.0' (1200mm)</p>	<p>4.0 FT. (1200mm)</p>  <p>4.0' (1200mm) 4.0' (1200mm) 4.0' (1200mm)</p>
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BUILDING AN INSIDE RADIUS CURVE

When building an inside curve, the radius gets bigger as the wall gets taller. This gapping is a function of geometry and batter and will happen with any multiple-height system. If the gaps created are small, space the gaps out over several units to minimize the openings. If this doesn't work, fill the opening with two units. This will require going off pattern for a while. For the best appearance, do not use pieces smaller than 4 inches. For example, a space that would be 8 inches in the pattern is 9 inches on an inside radius. This would require cutting a 16-inch piece to 9 inches instead of using an 8-inch piece and a 1-inch sliver.

USING GEOSYNTHETIC REINFORCEMENT

For walls that are less than 4 feet, use a light-weight grid. Miragrid 2XT is a good example of a grid that would work well. It is thinner and can be used in either direction for a strong wall. Use best practices for installing grid. Lay grid perpendicular to the wall face, bringing it to within 1 inch from the wall face. Pull the grid tight before backfilling. Cut off the salvage edge on grid to eliminate any unevenness of grid.

STEPS

When constructing steps, consider whether it is a fill or a cut grade situation. Construction is similar but varies in the amount of dummy units required.

A fill step solution will have a base course of dummy units in the entire footprint of the steps. For each additional step, add dummy units behind the facing units for stability. The facing units on the steps should alternate between 8-inch and 16-inch units glued to the dummy units.

A cut grade set of steps will use one layer of dummy units under each step, effectively stepping up the grade. Both applications will require some sort of tread to cover the facing units. The double-sided cap is a great solution.

ALTERNATIVE TO GEOSYNTHETIC REINFORCEMENT

Stabilized aggregate is a porous backfill material that can be used as an alternative to geogrid when building with BelAir Wall™ in cut wall situations where you don't have room to excavate for geogrid. Excavation time can be reduced by around 40%. Reducing excavation also means reducing backfill time and eliminating the need to compact all the backfill soil.

Stabilized aggregate effectively increases the depth of the facing unit and creates a permeable concrete mass that can resist the weight of the soil wedge behind the wall. It is a proven system with several million square feet built with this method. For more information, refer to the Stabilized Aggregate Manual. *(Continued on following page)*

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3.0 FT. (900mm)	4.0' (1200mm) 4.0' (1200mm)	4.0' (1200mm) 4.0' (1200mm)	4.0' (1200mm) 4.0' (1200mm)
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WALL ABUTTING A COLUMN *(Continued from previous page)*

Whether building a free-standing wall or a retaining wall with column accents, the wall is abutted to the column. When constructed as a pilaster at the end of a free-standing wall, cutting the wall pieces to fit against the column is the only work required. When abutting the wall in the middle of the column face, some sculpting of the units will be needed to give a clean finished look to a project. The hand-cut look of the units gives a soft, round appearance to each unit. If you butt the edge of a unit to the rounded face, gapping appears at the top and bottom of the unit. The best way to finish this is to mark or scribe the unit to fit the face of the column unit into the edge of the wall unit. This is easily achieved with a small hand-held grinder with a diamond blade.

CAPING

The double-sided cap has a right-angle side and an offset angle side. The caps can be used in any of four directions since there is no specific top or bottom. There is an arrow on the side to guide capping straight walls. Just place the arrows in the same direction and touch them together as the caps are laid. On a radius that usually requires extensive cutting, the fact that the unit can be turned any of four ways will reduce cutting dramatically. For example, on an arc of about 25 feet, a standard trapezoidal or rectangular cap would require cutting every other cap or about 10 caps. With this product, only four caps needed to be cut. This again saves time, saw wear and tear and diamond blades.

FREE-STANDING WALL

BASE COURSE

Since the 6-inch units are palletized together, it is easiest to use both the 6" x 16" and 6" x 8" units to build the base. This will help maintain the ratio of one to one with the units and will eliminate the need to pick around the smaller units on the pallet and save time. Flip the units over so the lug is down when building the base.

ADDITIONAL COURSES

When building additional courses, use pattern if desired. Alternate units up and down as needed to maintain vertical wall.

FREESTANDING WALL CORNERS

A free-standing wall corner would typically be built by putting a column in the corner and building away from it. In some cases, this will not happen and a series of units needs to be mitered to create the corner. Begin with a 16-inch unit. Use a speed square to mark a 45-degree angle off the formed edge on top of the unit from the corner to the back of the unit. Make the cut and repeat.

On the second course, use an 8-inch unit to stagger the bond. Mark and cut in the same fashion. Fill in the inside corner with two 16-inch pieces by cutting the corners off to fill the inside of your corner. You may flip units over or knock off the locator if needed to fit the units. All units should be glued bottom to top.

VISIT WWW.BELAIRWALL.COM FOR MORE DETAILS, INCLUDING INFORMATION ON INSTALLATION TRAINING VIDEOS.