Installation Procedures - Retaining Walls

1. Mark Out the Wall

For straight walls use stakes and a string line. For a curved wall set the shape by laying a garden hose on the ground, then mark the curve with spray paint. It's best to use a hose with the tap on and the spray nozzle off, as the water pressure will form a more uniform curve.

Handy Tips: Use brightly coloured string so you don't trip over it.

2. Dig a Trench

Dig a foundation trench 300-600mm wide and 130-150mm deep to fit the levelling pad. Refer to the cross-sectional diagrams for the specific levelling pad requirements per product. Remove any roots and soft earth. Level and firmly compact the soil at the bottom of the trench.

Handy Tips: Gloves make your spade user friendly.

3. Add Levelling Pad

Spread road base or pour concrete along the bottom of your trench (refer to note 7 under the cross-sectional diagrams to determine the appropriate material for your pad). If using road base, level with a straight edge and compact to the required height by tamping with the rear face of a block or a mechanical whacker packer.

Handy Tips: Road base consists of 5% cement-stabilised crushed rock.

4. The First Course

Place blocks side-by-side at the front of the leveled and compacted road base whilst using a string line along the back of the units for alignment. For curved walls, place the blocks against the required shape formed by a garden hose and marked out with spray paint. Make sure the blocks are tightly side-butted together and true to the running edge of the finished wall. Sweep the top of the first course before laying the second.

Handy Tips: Use a rubber mallet to tamp blocks into place – a metal hammer may crack them.

5. Backfill

With the first course in place, backfill behind the blocks with a minimum 300mm wide 10-20mm blue metal drainage aggregate to a level slightly lower than the block height. Lay in the second block course then backfill immediately behind the wall with the drainage aggregate.

Handy Tips: Backfill as you go. Otherwise the wall might fall.

6. Install the Drain

If required, place a 100 mm drainage pipe behind the first course of blocks on the bed of drainage aggregate. Outlet the drain through the wall at every low point, at every 20m of wall length, and around the ends of the wall to your storm water system.

Handy Tips: Use ag pipe with a protective sock on it.

7. Continue to Lay

Simply add your subsequent block courses to a maximum height stated in the cross-sectional diagrams. Remember to backfill with drainage aggregate as you go, and compact it when 300mm deep. Sweep the top of each course before laying the next to remove all foreign particles. Ensure the locking lips (at the back or top of the block) fit snugly together.

Handy Tips: Make sure your block lips lock together.

8. Finishing Off

Backfill to the final wall height whilst being careful not to nudge any blocks out of alignment. For extra strength also glue the top course to the second top course using construction epoxy. Capping units should also be glued to the top course using the same construction epoxy.

Handy Tips: Make sure you've got a cold one in the fridge for when you're finished!

Some Additional Tips

A great retaining wall requires a good foundation, correct backfill and drainage. Pay special attention to getting your leveling pad (or foundation) to an even depth, and if using road base make sure your bed is compacted to the correct size. Drainage gravel should be 10-20mm in size - blue metal is perfect. Remember the first course of blocks will dictate how the final wall looks, so lay them square and true, level side to side and front to back. Use a spirit level across the top of the blocks and tap them down with a rubber mallet. For walls that run down slopes and increase in height relative to the fall of the land, it will be necessary to 'step' the foundation trench down in block height increments. For wall heights over the maximum stated, consult your your local supplier.

Checklist

1. Check With Your Council

Low garden edging can usually be installed without council approval. However, walls over 1m will generally need to be designed and certified by an suitably qualified engineer. Walls in locations close to buildings or driveways, in places where significant ground water or storm water build up can be expected, in steep or unstable terrain, or where there is reactive clay or fine sandy soils, may need special attention. If in doubt, please contact your local council.

2. Check Off Your Equipment

To build a basic wall you will need:

- ☐ Garden gloves
- ☐ Spirit level
- ☐ Stakes & string
- ☐ Pencil & square
- ☐ 10-20mm Blue metal
  (for drainage gravel)
- ☐ Spade
- ☐ Wheelbarrow
- ☐ Small broom
- ☐ Rubber Mallet
- ☐ Road base
  (for levelling pad)

To split blocks you will need:

- ☐ Hammer & bolster
- ☐ Safety glasses

For larger jobs you may also require:

- ☐ Skid loader
- ☐ Circular saw (masonry)
- ☐ Whacker packer
- ☐ Ear muffs
- ☐ Geosyntheic reinforcement mesh

3. Safety

- ☐ Always wear eye protection when you're splitting or cutting Adbri Masonry pavers. Wear ear protection if you use a whacker packer.
- ☐ Bend your knees when lifting heavy blocks.
- ☐ Wear work boots to protect your feet and gardening gloves to protect your hands.
- ☐ Slip, Slop, Slap if you're working in the sun and keep your fluids up.

Tricky Bits

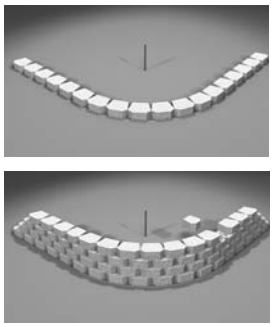
Corners and Curves

Insert a stake at the centre of the desired corner or curve then mark an arc on the ground with a spray can connected by string.

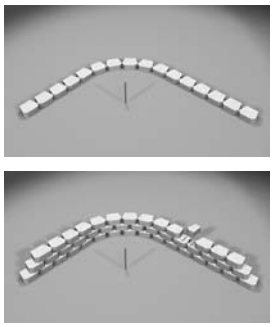
For outside curves, the top course will have the smallest radius so make sure this is not less than the minimum for the block type you are using. Conversely, for inside curves, the wall radius increases with each subsequent course.

For both inside and outside curves, you'll need to include partial blocks to maintain a proper running bond. These partial blocks will need to be fixed in place with concrete adhesive.

Handy Tips: Save on material costs by chiselling partial units from damaged or chipped blocks.



Outside curves decrease in radius towards the top of the wall.



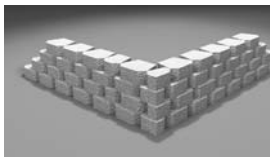
Inside curves increase in radius towards the top of the wall.

Square Corners

To build an outside corner begin by placing a half unit on the corner then lay the rest of the base course working from the corner block out. Begin the second course with another half unit, this time aligned with the alternate wall. Place the second and third blocks on either side of the corner unit and fix with concrete adhesive. Continue to alternate the corner unit orientation with each subsequent course.

To build an inside corner, place a full block at the corner then lay a second block at right angles to the first. Continue laying out the rest of the base course working from the corner out. On the second course lay the blocks on bond (eg. like bricks) on one side of the corner. Once the second course of one wall is established, begin the second course of the adjacent wall. Partial units may be required on this wall to maintain running bond for better strength and appearance. Block placement in the corner should alternate direction with each subsequent course.

Start outside corner with a half unit.



Alternate orientation of corner half units with each subsequent course.

Use full blocks in the corner of inside corners.