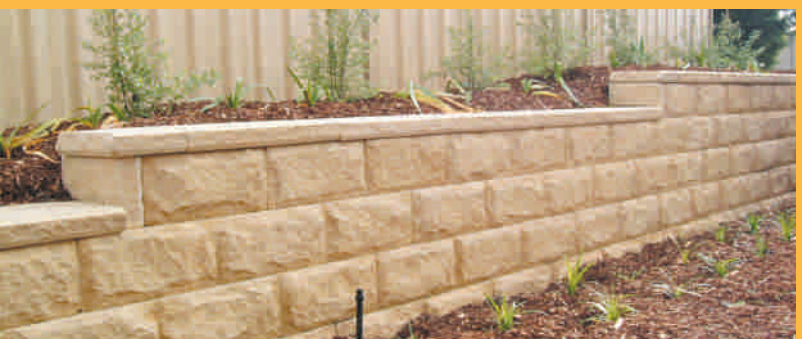
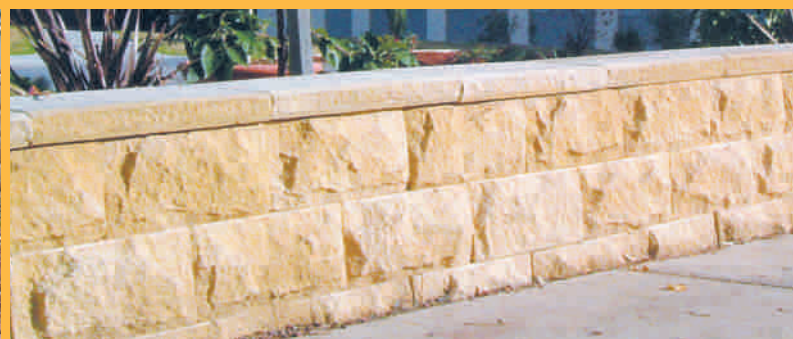
ECS MASONRY
Erosion Control Systems Pty Ltd

Bolderstone®

Retaining Wall System





Details & Dimensions:

Product:	Description:	Nominal Dimensions	Code:	Weight/ unit:	No/ M2:	Units/ pallet:
Blocks						
	Split face 225 unit	200 x 440 x 225	3500	26.5	11.35	60
	Bolstered 225 unit	200 x 440 x 225	3600	26	11.35	60
Cornerstones						
	Left hand split cornerstone	200 x 380 x 160	3381	21.5		32
	Right hand split cornerstone	200 x 380 x 160	3382	21.5		32
	Universal Bolstered cornerstone	200 x 380 x 140	3360	19.5		64
Capping Units						
	440mm capping unit	65 x 440 x 320	5440	16.0	2.3/lin m	84
	200mm capping unit	65 x 200 x 230	5103	5.3	5/lin m	270

Installation information

Construction guidelines....

Typical walls up to 1.0m in height

Check with your local council to see if there are any regulations relating to your proposed building works. Ensure that all relevant building codes are adhered to.

Constructing the footing:
Excavate a trench 200mm deep and 600mm in width. Fill with a well-graded crushed rock and compact with a mechanical vibrating plate to achieve footing at least 150mm thick. Ensure the footing is well compacted and level.

Laying the base course:
Use a string line when constructing a straight segment of wall. When building a curved segment of wall, use a piece of bent conduit to create the shape you desire, then mark the shape on the ground using spray paint. Placing a 10-20mm bedding layer of mortar on the crushed rock footing will make it easier to level the first course.
Beginning at the lowest point, place units and tap into position using a rubber mallet. Make sure that every block is level from front to back and side to side using a spirit level. This will give the wall a professional look.

Placing drainage material:
Place a 90-100mm drainage pipe adjacent to the back of the first course and ensure it has the required fall to carry the water away to the desired drainage point. Fill the block cavities with crushed rock (FCR Class 2), wet the block in-fill and compact after completion of each course.
Lay geotextile filter cloth to encapsulate the drainage zone. This prevents migration of retained earth into the drainage layer. Using 20mm angular clear stone, create a 300mm drainage layer behind the wall (not scoria).

Installing remaining courses:
Sweep excess crushed rock from the top of the first course of blocks. Insert the plastic keys into the square recesses on the top face of the blocks, orienting the keys as per figure 1 to achieve the desired setback. Place the next course of blocks, ensuring vertical joints are appropriately offset to the course below. Fill the block cavities in the same way as for the base course and continue creating the drainage layer behind the wall in 200mm lifts. Continue this process for all remaining courses.

Finishing off the wall:
When the last course has been installed, place capping units on the top course of blocks, affixing them in place with either masonry adhesive or mortar.

Maximum wall heights....

The maximum wall heights listed below are for gravity walls with no reinforcement. Walls can be built up to several metres if fully engineered as a geo-grid reinforced wall or a canterlievered wall incorporating steel reinforcing and concrete core infill. An engineers design is usually required for walls over 1m in height, walls on a boundary or walls with a surcharge.

Walls 1000mm & under

Gravity wall

Wall Setback:	*Offset per course:*	*Maximum wall height:*
1:40	5mm	**800mm**
1:8	25mm	**1000mm**

Walls over 1000mm (indicative)

No-fines concrete backed wall

Wall Setback:	*Depth of no-fines concrete:*	*Maximum wall height:*
1:8	300mm	**1200mm**
1:8	350mm	**1400mm**
1:8	500mm	**1600mm**

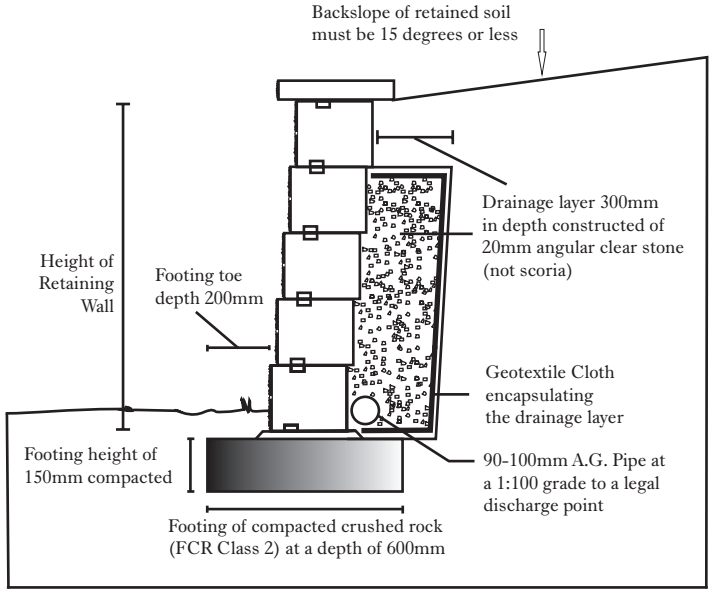
Note: This table is a guide, all retaining walls over one metre in height need to be designed by a qualified engineer.

Geo-grid reinforced walls

Contact us for further information on design and construction.

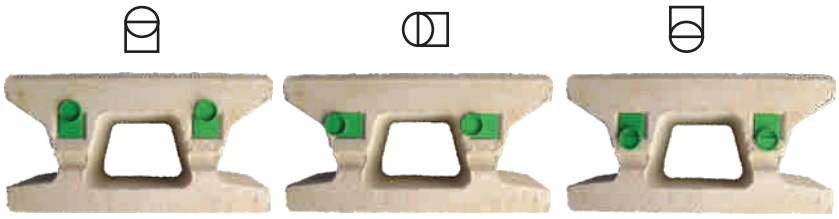
General Notes:

1. *Designed in accordance with AS4678-2002 & AS4678-2002 Amdt No 1 July 2003, for a Class A retaining walls.*
2. *Retaining wall height is measured vertically from the base of the bottom course to the level of retained infill soil.*
3. *Crushed rock footing must be embedded in undisturbed natural soil of 100kPa bearing capacity, and if clay, of cohesion >15kPa.*
4. *No excavation is to be made within a lateral distance in-front of the wall equal to its height.*
5. *Bottom course is to be embedded 100mm below final ground level*



Drawing not to Scale

Figure 1. -Offset Interlocking Keys:



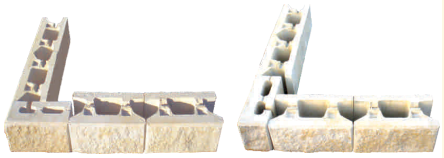
1:40 Setback | 1:8 Setback | 1:4.5 Setback

The orientation of the plastic key determines the setback of the wall. After reading the Bolderstone wall heights table and determining what set back is required, place the keys in the appropriate position as outlined above.

Corners:

External Corners:

To build an external corner follow these diagrams. Use cornerstones alternatively as you build your wall. Depending on the setback, one block per course may need to be cut to maintain bond.



Course A (and C,E,G...) | Course B (and D,F,H...)

Internal Corners:

A corner structure is formed by building two walls. On any course, one wall will run through the other wall. This alternates with each course up the wall. Depending on the setback, one block per course may need to be cut to maintain bond.

Course A (and C,E,G...) | Course B (and D,F,H...)

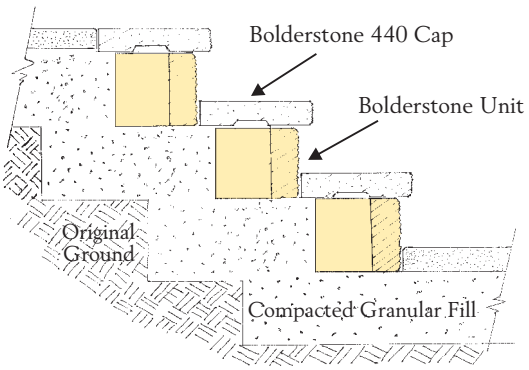
Curves: (Minimum radius 1.5m)

Concave curves are easily achieved by abutting the front faces of adjacent blocks and gapping the back face.

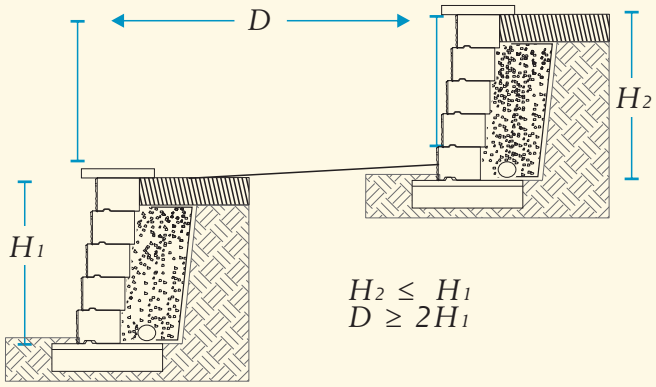
Convex curves
The specially designed back "wings" are easily knocked-off (on site) to achieve a minimum radius of 1.5 metres.

Steps:

Steps are easily created using the standard units for step risers and the 440mm capping unit for step treads. Stair wells are often designed to be two capping units wide giving a 880mm width stair structure.



Bolderstone® tiered walls



Bolderstone® notes

Colour Variation

Due to the changes in raw material, variations in colour do occur. When ordering your product, order all elements of your project together to reduce the possibility of colour variation. We do not guarantee different batches will be an exact colour match.

Efflorescence

Efflorescence (a crystalline salt deposit) is a natural occurrence in masonry products. Efflorescence does not effect the structural integrity or strength of the product. Efflorescence will usually diminish and disappear in the course of time as the product is exposed to the elements. No responsibility will be accepted for the occurrence of efflorescence.

Claims

Claims must be reported within 48 hours of delivery. No claims will be accepted once product has been installed. Please contact the store where goods were purchased to report any concerns regarding product colour or quality.

Colour range

Ivory | *Autumn Gold* | *Charlestone* | *Bluestone* | *Desert Sand*

NOTE: These colours are an indication only, please contact your nearest distributor to view sample colours.

PLEASE CONTACT US FOR MORE INFORMATION

PAVE WORLD
BRICKS & PAVERS

CAMPBELLFIELD
1596 Sydney Rd
(Hume Highway)
Campbellfield Vic 3061
PH: (03) 9359 6028

GREENSBOROUGH
297 Diamond Creek Rd
Greensborough Vic 3088
PH: (03) 9434 6744

TAYLORS LAKES
35A Melton Hwy
Taylors Lakes Vic 3038
PH: (03) 9390 8100

MORDIALLOC
80 Governor Rd
Mordialloc Vic 3195
PH: (03) 9580 1080