HOW TO LAY RETAINING WALLS

Austral Masonry's Heron™ Retaining Wall Blocks are an ideal choice for retaining walls in gardens, other residential applications and commercial projects. The interlocking and dry stacked nature of the Heron™ blocks, makes them easy to install for the "Do It Yourself" landscaper, while their connection strength provides confidence on larger jobs. No matter what the project, the result is always an attractive and low maintenance retaining wall. The flexibility of the system provides tremendous scope, from edging to terraces, straight walls to curves.

Note: For commercial projects, terraced walls, fences above walls, walls in clay or fine sands, walls in areas subject to water run-off, walls over 800mm high and other specialised applications, engineering guidelines will need to be followed. Please consult with regulating council for local design requirements prior to the commencement of any retaining wall. Councils may request walls over 0.5m in height and / or where a surcharge exists (e.g. driveway, house, fence or other structure) be designed and certified by a suitably qualified consulting engineer.

Your Checklist

- ❑ String line
- ❑ Tape measure
- ❑ Walling units
- ❑ Compaction Tool
- ❑ Shovel
- ❑ Spirit level
- ❑ Wheel barrow
- ❑ Agriculture Drain Pipe
- ❑ Pegs or stakes
- ❑ Broom
- ❑ Gloves & eye protection
- ❑ Geogrid
- ❑ Mitre saw (to cuts blocks if req'd)
- ❑ 10-20mm Crushed stone (back fill)
- ❑ Crushed rock (for base)

Estimating materials

Calculate number of Heron™ blocks required						
No. blocks high	**Length of wall (metres)**					
	2m	4m	6m	8m	10m	12m
1 course	6	11	16	21	26	32
2 courses	11	22	32	42	52	63
3 courses	16	32	47	62	78	94
4 courses	21	42	63	83	104	125

Calculating Block Quantities – Example wall (Includes waste)
10m long x 3 courses high

Blocks
(10 metres x 2.57 blocks per metre) x 3 courses = 77.1 blocks (78 blocks rounded)
Add 5% Extra (Breakages, Curve Walls, Cuts) = 82 Heron™ Blocks overall

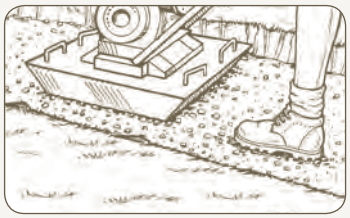
Capping
10 metres x 2.57 capping blocks per metre = 25.7 capping blocks (26 blocks rounded)
Add 5% Extra (Breakages, Curve Walls, Cuts) = 28 Heron™ Capping Blocks overall

Step 1: Permits

Check with your local council to ensure all local Building Codes are complied with.

Step 2: Foundation

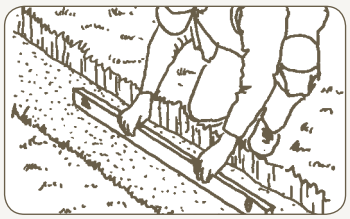
The foundation material shall be compacted by several passes of a mechanical plate vibrator. Where there are significant variations of foundation material or compaction, soft spots, or where there is ponding of ground water, the material shall be removed, replaced and compacted in layers not exceeding 150mm. Trenches shall be dewatered and cleaned prior to construction, such that no softened or loosened material remains.



Step 3: Bearing Pad

The wall shall be built on a bearing pad, not less than 150mm deep, consisting of one of the following options:

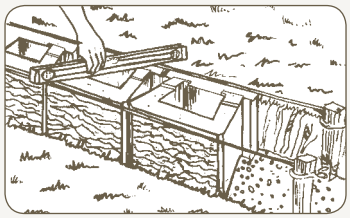
- Compacted crushed rock, well-graded and of low plasticity (without clay content), compacted by a plate vibrator;
- Cement-stabilized crushed rock, with an additional 5% by mass of cement thoroughly mixed, moistened and compacted by a plate vibrator; or
- Lean-mix concrete with a compressive strength of not less than 15 MPa.



Step 4: First Course

Spread 25mm of metal dust with an additional 5% by mass of cement over the compacted base. The first course is now bedded into the metal dust. The use of a level and string line is recommended to ensure the first course is laid correctly. Ensure each block is also well filled with free-draining material (eg. crushed rock aggregate/blue metal).

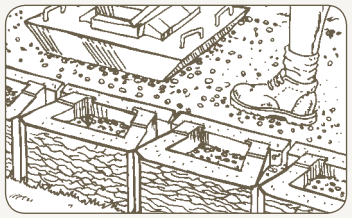
For walls up to 1 metre high, make sure at least 100mm of the first-course blocks are buried below the finished ground level. Allow 200mm for walls over 1 metre high and up to 3 metres high



Step 5: Drainage and Back Fill

Place 100mm diameter agricultural pipe with geotextile sock behind the wall, with a 1 in 100 fall. Backfill behind the courses of blocks to a width of 300mm using 10-20mm free draining material (eg. crushed rock aggregate / blue metal). Ensure each block is also well filled with free-draining material.

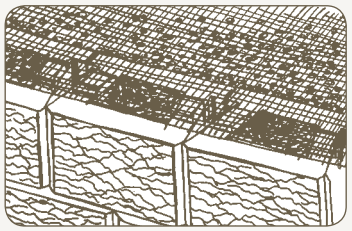
Backfill behind the drainage layer with select backfill material in a maximum of 200mm layers. Compaction rate of 95% must be achieved (use only hand operated plate compactors within 1 metre from the back of the wall). Do not use soft or wet clay to backfill. Be carefull not to mechanically compact too close to the wall.



Step 6: Laying Additional Courses

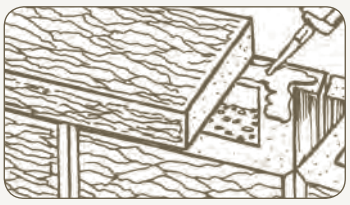
Clean any debris from the top of the wall to ensure the next block and or the geogrid layer sits perfectly. Roll the geogrid perpendicular to the wall, pull tight and cut to the required length. Ensure that the geogrid sits within 15mm of the face of the block, so that the purpose made connection lugs can interlock. Butt join the geogrid along the length of the wall.

Place the next course on top of the geogrid, fill the blocks, pull the geogrid taut and pin down while compacting the drainage layer and backfill.



Step 7: Capping Units

Once backfilling and cleaning is completed as per Step 5, fix the purpose made Heron™ Capping Blocks with cement based flexible adhesive.

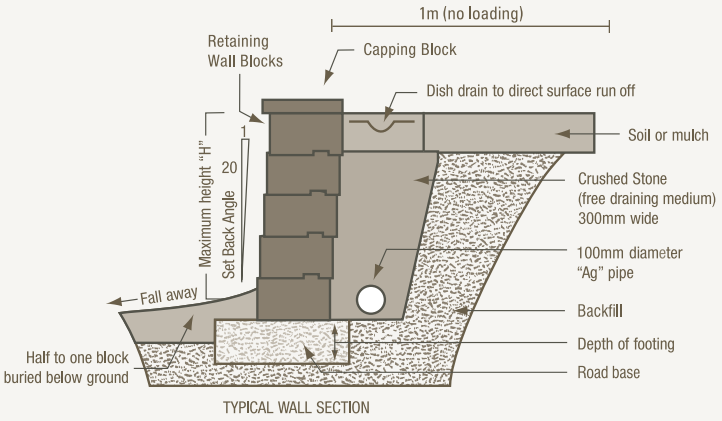


Cross Section of a Finished Wall

Note:

1. No loads above 2.5kPa to be allowed within 1.0m of wall units

2. Maximum wall height in good soils is 4 courses.
(Good soils include gravels, crushed sandstone and sandy gravels)
Refer to Technical Guidelines for walls up to 3m height.



TYPICAL WALL SECTION