

Tasman Retaining Wall System

The Tasman Retaining Wall System incorporates purpose made corners and capping units to provide classical reconstructed stone retaining walls for any landscape situation.



“No one knows Blocks and Pavers better”

Tasman Retaining Wall System

The Tasman Retaining Wall System incorporates purpose made corner and capping units to provide classical reconstructed stone retaining walls. The unique design of the Tasman wall system allows increased flexibility over competing products. The Tasman walls can be built almost vertical.

Each block has only a 10mm setback, which allows all available space to be utilised to the maximum. Curved or straight walls can be erected and it is easy to build 90-degree corners with purpose made corner blocks. A capping unit is adhered to the top course of blocks to finish off the wall.

Tasman blocks are suitable for retaining walls up to 6 meters high. The blocks are easily dry-stacked and their patented design locks into the block above to create an attractive structural retaining wall. For walls over 1 metre high, FORTBRAC® geogrids are locked in every third course of blocks to create a reinforced soil retaining wall structure. (see design tables) To comply with most council requirements, please seek specific engineering advice for walls over 1 metre high or for low walls carrying car traffic etc.

CONSTRUCTION METHODS

The Tasman Retaining Wall System can be built using three different construction methods.

The most suitable method to build the Tasman wall is always selected with consideration to the overall wall height, soil conditions and any loads that impact on the retaining wall such as vehicle traffic, fences or steep slopes.



OPTION 1

Backfilled with 300mm wide blue metal drainage layer

This is a common method for building low non load bearing gravity garden wall. Tasman blocks are built over a compacted gravel footing on a 25mm sand bed; all blocks are filled with 20 mm blue metal. An ag-pipe drain is set up at the back of the wall base and then subsequently backfilled with a 300mm drainage layer.

- Suitable for low walls dependant on soil conditions and any loads, refer to design table 1.



OPTION 2

Backfilled with no-fines concrete drainage layer

Per option 1, Tasman blocks are built as a gravity wall over a compacted gravel footing on a 25mm sand bed. However, to increase the strength of the wall and therefore build higher walls, the blue metal block infill and drainage layer in option 1 is replaced with a "no-fines" concrete mix which both strengthens and increases the mass of the wall.

The "no-fines" concrete still allows water to flow into the drain below.

- Suitable for walls up to 2 metres high subject to engineers design. Refer to design table 2.



OPTION 3

Reinforced soil using Fortrac Geogrid

Suitable for high walls, Fortrac Geogrids are laid under every 3rd course (600mm) extending within the soil backfill to provide a reinforced soil retaining wall.

- Suitable for walls up to 6 metres high subject to engineers design. Refer to design table 3.

Curves

For Convex curved walls simply knock the back fin off the block with a hammer

Minimum radius
Tasman Blocks: 1300mm
Tasman Half Blocks: 650mm

This is the minimum radius of the top course, measured from the back of the block. Adjust lower courses allowing for 10mm step back.



Corners

Corners are built by adhesively fixing the purpose made corner blocks to alternate courses.

Allowances should be made for a 10mm step back per course.

Lugs must be removed from the Tasman Blocks to ensure that the corner blocks fit evenly. *Separate data sheets available.



Steps

Steps can be easily built by using a combination of Tasman blocks and bullnose capping units.

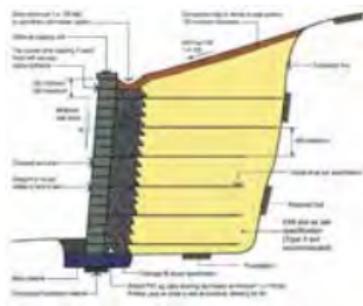
The step risers are built with Tasman blocks. The capping units are then adhered to the top of the blocks to form the treads.

Note: For terraced walls, fences above walls and any specialised applications, contact your supplier.



TABLE 3**Tasman Reinforced Soil Retaining Walls.**

Wall height H (m)	# Layers of Geogrid	Spacing S' (m)	Level Backslope				Soil Type
			Without surcharge		Domestic vehicle		
			Type of Geogrid	Geogrid lengths L' (m)	Type of Geogrid	Geogrid lengths L' (m)	
1.6	4	0.4	35/20-20	1.9	55/30-20	2.5	1
	3	0.6	35/20-20	1.3	35/20-20	1.4	2
	3	0.6	35/20-20	1.3	35/20-20	1.4	3
2.0	5	0.4	55/30-20	2.2	55/30-20	2.8	1
	4	0.6	35/20-20	1.5	55/30-20	1.5	2
	4	0.6	35/20-20	1.5	35/20-20	1.6	3
2.4	6	0.4	55/30-20	2.6	55/30-20	3.3	1
	6	0.4	55/30-20	1.8	55/30-20	1.8	2
	5	0.6	35/20-20	1.8	35/20-20	1.8	3
2.8	7	0.4	55/30-20	3.1	-	-	1
	7	0.4	55/30-20	2.1	55/30-20	2.4	2
	5	0.6	35/20-20	2.1	55/30-20	2.2	3
3.2	8	0.4	55/30-20	3.5	-	-	1
	8	0.4	55/30-20	2.6	55/30-20	2.8	2
	6	0.6	35/20-20	2.6	55/30-20	2.7	3

**Geogrid spacing:**

- Bottom Layer - Top of 1st course (200mm from base)
- Intermediate layers - 400-600mm max.
- Top Layer - 400mm from top course
- Geogrid lengths from design tables above are measured from the back of the wall.

For walls over 2m, extend top 2 layers of Geogrid by 500mm.

For further information view islandblock.com.au

CONSTRUCTION NOTES

Soil Type Descriptions

Type 1 soils

Includes soft and firm clay, fine sands, silty clays.
Internal Friction
Angle $\geq 20^\circ - 24^\circ$

Type 2 soils

Includes stiff sandy clays and gravelly clays
Internal Friction
Angle $\geq 25^\circ - 30^\circ$

Type 3 soils

Includes FCR, rock, sandstone and gravels.
Internal Friction
Angle $\geq 30^\circ+$

Engineering - To comply with most council requirements, please seek specific engineering advice for walls over 1 metre high or for low walls carrying vehicle traffic, etc.

- The following assumptions have been made regarding soil properties:
 - Infill soil types – as above: internal friction angle $\geq 20^\circ - 30^\circ+$
 - Bearing pad
 - compacted density angle: at least 18.6kg/m³
 - effective internal friction angle: at least 37°
 - effective cohesion: at least 5kPa
- Caution is required when using heavy or dry clays as retained soil or backfill.
- Surcharge loads are as follows:
 - Domestic vehicles 500kg/m² (5kPa)
 - Heavy vehicles to be separately assessed
- Drainage shall be supplied in the form of a slotted PVC ag-pipe with geotextile sock drain (as shown in figure 2, fall at 1:100 min. to S/W disposal system) or with weep holes. A 300mm drainage layer of uniformly graded gravel shall be provided behind the wall.
- Geogrid soil reinforcement shall be Fortrac® installed in accordance with the manufacturer's recommendation. Fortrac® geogrid is to be unrolled perpendicular to the wall.
- The geogrid reinforcing should be butt joined, or aligned vertically. Where overlapping can occur (eg curved walls) the geogrid must be separated with a minimum of 100mm of backfill material.
- The gravity soil design table should be used for low, non-structural garden walls only.
- The reinforced soil design table complies with AS 4678 and is based on Tasman blocks 390mm L x 245mm W x 200mm H.
- For backslope conditions greater than 1 in 4, seek specific engineering advice.
- Vehicle traffic should be allowed no closer than 1 metre behind the wall.

Engineer's design program available at...
islandblock.com.au/designprogram

INSTALLATION GUIDE



Step 1 - Base preparation

Dig out trench approx. 250mm deep. The trench should be 600mm wide. Place and well compact 150mm to 200mm of fine crushed rock (gravel). This base thickness depends on the wall height e.g. 150mm thick for 1 metre high, extra thickness for higher walls may be required, subject to engineers design.



Step 2 - Sand bed

Spread 25mm of either sharp sand or metal dust over the compacted base. This should be in a straight line and checked with a level. If the wall is stepped, start at the lowest point.



Step 3 - Laying 1st course

The first block course is now bedded into the sand bed. The use of a level and string is recommended to ensure that the first course is laid correctly. For walls up to 1 metre high, make sure at least 100mm of the first block course is buried below the finished ground level. Allow approx. 200mm for walls over 1 metre high and 300mm for walls over 2 metres high.

Compact gravel along the front of the blocks to stabilise compact gravel along the front of the blocks to stabilize.



Step 4 - Drainage & backfill

Place PVC ag-pipe with a geotextile sock drain behind the wall, with a 1 in 100 fall. Backfill behind the blocks approx. 200-300mm using 10-20mm clean, free-draining material (eg blue metal). Ensure that each block is also well filled with free-draining material. Backfill behind the draining layer with your chosen backfill material in a maximum of 200mm layers. Compaction rate of 95% must be achieved (use only hand operated plate compactors close to wall). Do not use soft or wet clay to backfill. Be careful not to mechanically compact too close to the wall.



Step 5 - Laying Geogrid (if required)

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 connecting lugs can interlock. Butt-join the geogrid along the length of the wall. Place the next course on top of the geogrid.



Step 6 - Laying additional courses

Lay the next course and subsequent courses to a string line following the same procedure, as outlined previously, e.g. clean the top of the blocks, fill the block cores and form a 300mm drainage layer behind the blocks, backfilling in max. 200mm layers, as per step 4. Ensure backfill is compacted to 95%.



Step 7 - Surface drainage layer

Care should be taken where possible to divert water away from the wall face. If the surface water cannot be taken away from the top of the wall, place a 100-150mm clay (or similar) impermeable layer on top of the wall fill (see figure 2) If soil is used on top of the wall, a layer of geotextile must be used to stop any soil filtering down through the drainage layer (see figure 1)



Step 8 - Laying capping units

Once backfilling and cleaning is completed as per step 5, fix the purpose made Tasman Capping blocks with adhesive. For domestic situations, a waterproof construction adhesive is recommended. For high use areas, a 2-part epoxy is preferred.

(Available from Island Block and Paving)

Tasman Retaining Wall System

Tasman Wall Block

390 x 245 x 200 mm
22kg each
13 per m²
60 per pallet



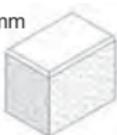
Tasman 360mm Corner Block

160 x 360 x 200 mm
20kg each
Available in
left or right



Tasman 245mm Corner Block

160 x 245 x 200 mm
15kg each
Available in
left or right



Tasman Capping Block

230 x 255 x 60 mm
6kg each
4.3 per
lineal metre
180 per
pallet



Fortrac® Geogrid

Roll size
2.5m W x 200m L
Types available
35/20-20
55/30-20
80/30-20



Computer design program available at - islandblock.com.au/designprogram

Colours available...



Bluestone



Limestone



Portville

Available from... ISLAND BLOCK & PAVING Pty Ltd

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