Midland Brick

Versaloc®

DRY STACK WALLING SYSTEM

OCTOBER 2025

Versaloc® walling system

The Versaloc® Walling System is a dry stack walling system from Midland Brick which creates significant productivity gains, by allowing units to be stacked together without the use of mortar.

This innovative patent pending system is the output of years of research and design work dedicated to creating a revolutionary Dry Stack walling system. The Versaloc® system has many advantages over traditional block work, other Dry Stack products, tilt panels and other walling systems.

It promotes rapid construction times with minimal bracing and formwork required and is adaptable for use in both large scale commercial construction projects as well as residential developments that require flexibility and versatility in a walling solution. Genuine time savings translate into bottom line cost savings and more profit for your business.

Advantages

- ✓ Dry Stack system
- ✓ Rapid construction
- ✓ Construct during inclement conditions
- ✓ Unique interlocking design
- ✓ Significantly reduces mess on site
- ✓ Eliminates the need for termite control products
- ✓ Increased unit to unit interlock
- ✓ No need to clean cores due to mortar falling during block laying

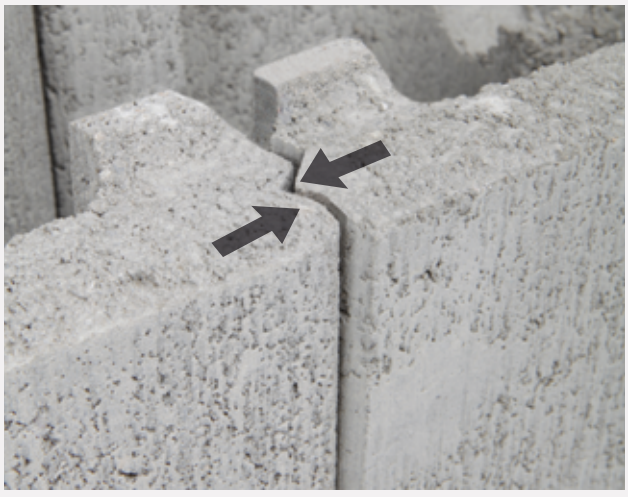
Applications

- ✓ Soil retaining walls
- ✓ Basement walls and exterior walls*
- ✓ Swimming pool walls*
- ✓ Constructions where a cyclone rating is required*
- ✓ High strength load bearing walls
- ✓ Multistorey commercial and residential construction
- ✓ Common dividing walls and boundary walls*
- ✓ Underwater stormwater detention tanks

**External Versaloc® walls need to be weatherproofed or tanked.*

Features

- ✓ Interlocking tongue and groove joints



- ✓ Self locating top lugs

Versaloc® walling system

Time Saving

Versaloc® walling units feature eight self locating lugs on the top of each unit. When the units are stacked on top of each other, the four lugs on each side of the unit will interlock with the bottom of each of the units above. These lugs remove the need for mortar which reduces materials required on site and delivers significant time savings for installers. There is also a tongue and groove joint on the end of each unit which improves unit to unit interlock and provides a number of benefits such as greater wall stability during the laying, reinforcing and core filling stages of construction.

Uncompromised Quality

Quality is not compromised for productivity gains in any way. The units achieve a 20MPa rating and when reinforced and core filled with 20MPa concrete, completed 190mm walls achieve a Wall Grouted Compressive Strength (f'mg) of 10.2MPa. This complies with the requirement of the BCA as well as the ratings achieved by competitive products.

Versaloc® vs Traditional Mortared Unitwork

Requirements	Versaloc® Walling System	Traditional Mortared Unitwork
Mortar	Bottom course only and top course as necessary	Required for all courses
Labour (units laid per day)*	300	200
Steel reinforcement	Yes	Yes
Corefill and pump	Yes	Yes
Formwork for cleanout	No	Yes
Bracing	Yes	Yes

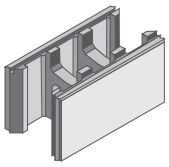
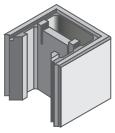
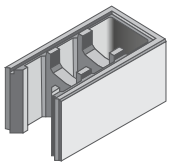
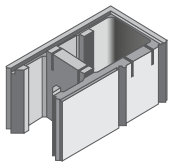
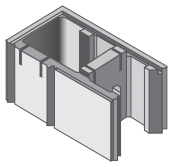
**Estimate only – requirements will vary depending upon application.*

The Versaloc® Walling System is designed in accordance with the Concrete Structures Code AS3600 and is suitable for all forms of unit work in commercial, industrial and residential construction.

Each batch of Versaloc® blocks manufactured are assessed for quality and compliance in our Midland Brick laboratory.

Components of the Versaloc® Walling System

The Versaloc® Walling System features a number of specifically designed units to reduce the need for cutting on site making wall construction even quicker.

200 Series					
					
LxWxH	400x190x200mm	200x190x200mm	400x190x200mm	390x190x200mm	390x190x200mm
	M20.VLNG Standard Unit 16.5kg 72 per pallet 1218kg pallet weight	Half Unit 9.3kg	End Unit 17.7kg	Right Hand Corner Unit 15.3kg	Left Hand Corner Unit 15.3kg
		M20.VLFEHENG Combined Pallet 18 Half Units + 16 End Units 506kg pallet weight		M20.VLLHRHNG Combined Pallet 14 Right Hand Units + 16 Left Hand Units 510kg pallet weight	

FRL Insulation Minutes Rating (Fully-Grouted)	Unit characteristic unconfined compressive strength	Grouted masonry characteristic unconfined compressive strength	Average weight (standard unit)	Average no. sq/m (standard unit)	Average no. tonne (standard unit)
240	20MPa	10.2MPa	16.5kg	12.5	60.6

Sound insulation test reports available on request.

Versaloc® Price List

200 Series	Dimensions	Quantity per Pallet	Layers per Pallet	Quantity per Layer	Price per 1000 (inc. GST)	Price per Pallet (inc. GST)
Standard Unit	400Lx190Wx200H	72	4	18	$6,211.88	$447.26
Corner Unit	390Lx190Wx200H	30	2	8xL, 7xR	$6,211.88	$186.36
End Unit	200Lx190Wx200H	34	2	9xH, 8xE	$4,347.05	$147.80

Please note

- All prices and information listed are subject to revision without notice. Please re-confirm at time of order.
- Prices ex-Middle Swan, Joondalup & South Guildford brickworks. (Limited stock held at Joondalup and South Guildford).
- Delivery charges are not included.
- Product can only be purchased in full pallets or layers, NO LOOSE PIECES available.
- A restocking fee plus transport applies to any stock returned to yards. Stock must be in layers on pallets as purchased.
- Product is supplied on pallets. This will incur an additional fee of $50 per pallet and is fully refundable on return within 6 months of purchase date. Pallets can be arranged to be collected for a $15 per pallet charge.
- Additional charges may apply for part pallets.
- Concrete masonry products will have colour variations due to natural variations in the raw materials used in the production process. These changes are natural and therefore not considered defects.

Versaloc®walling system

Fire Rating Test Assessment

Testing conducted by Exova Warringtonfire Aus Pty Ltd

Tested in accordance with AS1530.4-2005

EWFA Test Report No:27772800.1 test date 17th April 2014

General description: The test assembly comprised a nominal 3000mm wide x 3000mm high x 190 mm thick loadbearing wall system.

Test specimen consisted of 400mm long x 200mm high x 190mm thick mortar-less Versaloc hollow blocks, dry-stacked and core filled with concrete. Reinforcement bars (16mm diameter) were inserted vertically into the block every 2nd full block and horizontally every 2nd course.

Wall was subjected to a total axial load of 337.9 kN for the duration of the test.

Criteria	Result
Structural Adequacy	241 minutes
Integrity	241 minutes
Insulation	241 minutes
FRL	**240/240/240**

Finishing

All external Versaloc® walls need to be weatherproofed by rendering and painting the outside face of the wall. Please refer to the Australian Standards for further information about suitable weather-resistant coatings.

NOTE: For Versaloc® Walling Systems used as a retaining wall or below ground level, walls should be “tanked” using various proprietary tanking methods to achieve waterproofing.

Basement Walls

Versaloc® 200 Series blocks are suitable for basement walls.

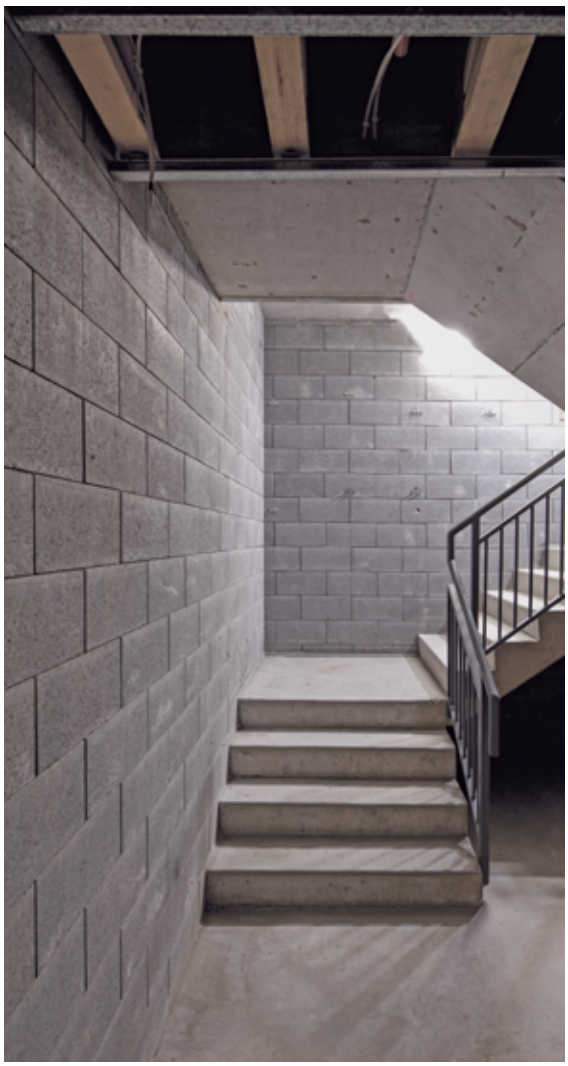
Versaloc® at work

Multistorey Residential Apartments Case Study

1 Project upgraded to Versaloc®, after initial foundation was installed.

2 Steel framing created service channels for this internal wall before it was finished with plasterboard.

3 Unique self locating lugs, tongue and groove joints and specialty corner units make corner construction quicker and easier than ever before.



How to build with Versaloc®

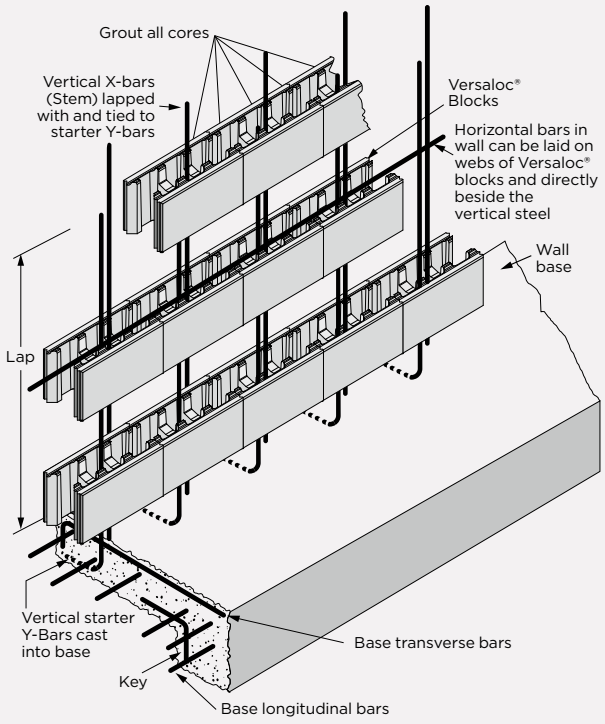
Preliminary

- Excavate to a satisfactory foundation.
- Arrange for supply of materials to the specifications given.

Base and Starter Bars

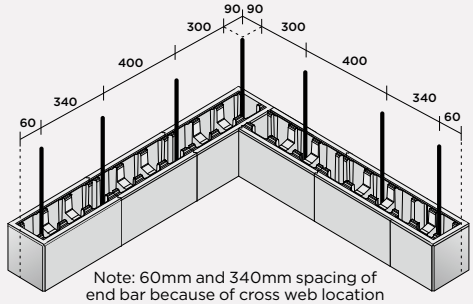
- Form the base to the required dimensions and levels as shown in details.
- Place the base reinforcement as shown in Diagram 1. Fix the starter bars for the vertical reinforcement (Y-bars) at the correct cover specified in the drawings from the back face of the wall (i.e 50mm) and in the correct positions relative to the block cores to be reinforced. Place horizontal bars in the center on the cross webs.

DIAGRAM 1



- Place the base concrete, preferably using ready-mixed concrete, and compact thoroughly by rodding, spading or vibrating. Wood float finish any surface to be exposed permanently. Take care not to dislodge reinforcement. **Note:** First reinforcement bar is placed at 60mm from the end (to avoid cross web) for 200 series (refer to reinforcement layout below).

TYPICAL REINFORCING STEEL LAYOUT



Block Laying

- Block laying procedure follows that of the normal practice but without the need to mortar the blocks together. **It is of critical importance** that the first layer of blocks be mortared to the concrete base in the normal way to provide line and level for the remaining block courses. Note: Excess mortar within the core should be removed at this stage.
- The blocks are laid with the shallow recessed cross webs at the top. During construction, it is important to keep debris off the bed joint plane; otherwise the wall may begin to develop vertical and/or horizontal curvature. In addition, as a unit is positioned, some small particles of concrete may be rubbed off the units and fall on the bed joint surface. Usually the force of placing the block will crush these particles. Otherwise, rubbing the block back and forth along the joint will wear down the material. If a joint is visibly open, the unit should be removed and the debris removed. **Note:** Small plastic wedges can be used under blocks to achieve vertical alignment.
- Provided the construction is started on a level surface, use of a line and spirit level should be all that are required to keep the wall aligned vertically and horizontally. In instances where the wall is accidentally laid out of line, this can usually be corrected by using a piece of wood to protect the wall and a heavy hammer to knock the wall back into line.
- At the end of walls, Half End blocks may be glued to the block directly below using an appropriate adhesive to increase stability. (eg 2 part epoxy or equivalent)
- Blocks should be laid in running bond with head joints aligned vertically every second course. Exact overlapping by half of a block will ensure that the webs and cells are aligned vertically.
- Weepholes can be provided by passing 50mm diameter upcs pipes through holes in the wall at 1200mm centres.
- Reinforcement for wall stems must be positioned accurately, and tied securely before placing concrete or grout. Vertical reinforcing bars (X bars), including starter bars (Y bars), shall be placed to provide 50mm cover to the backface of the wall and bars shall lap 700mm. Confirm requirements with your engineer.

Bracing

- During grouting of Versaloc® walls, it is recommended that suitable bracing be used to support the wall.
- Temporary bracing of partially built Versaloc® walls is also recommended and especially during windy conditions.
- Refer to note under **Corefill Specifications Section 4 – for corefilling height.**
- Full height Versaloc® walls will require appropriate articulation joints. These should be employed as per NCC2022 or as per your Structural Engineer's recommendation.

How to build with Versaloc®

Corefilling

- Versaloc® blocks have large cores inside to allow for adequate flow of corefill and ensuring complete coverage of reinforcing steel bars. As Versaloc® requires no mortar above the first course, there are no mortar dags on the steel, allowing adequate flow of the corefill and minimal chance of voids in the wall.
- The corefill must be sufficiently fluid to fill all the voids, bond together adjacent masonry units, bond steel reinforcement into the cores, and to unify the wall into a single structure. It is therefore important that the cores are completely filled with corefill which meets the specifications listed in the following section.
- Samples of the corefill should be tested periodically during the pour to ensure it meets the required specification.
- In hot weather it may be necessary to wet the cores with water in order to cool the blocks and prevent "flash setting" of the grout. This can cause voids in the wall which can effect structural integrity, weatherproofing and the fire resistance of the wall.

Product	1m³ of grout will fill approx	Approx No. of blocks per m³ of corefill
Versaloc® 200 series	10.2m² of wall	137

Note: Excludes volume of reinforcement bars.

Corefill Specifications

The corefill specifications are performance based. It is recommended that the corefill supplier determine an appropriate mix design to meet the following performance requirements.
The performance details are as follows:

1. FLOW CHARACTERISTICS

Versaloc® Block 200 Series – f'uc = 20MPa
Concrete Base – f'c = 25MPa

Reinforcement Corefill
Grade 500N f'c = 20MPa with a very fluid consistency and a cement content not less than 300kg/m³

Where possible, use ready-mixed corefill and specify when ordering that it is for filling blockwork.

The grout shall have a minimum spread of 600mm (average diameter), maintained for the period of the pour.

NOTES:

- *A 'spread' is specified rather than a 'slump' because it is a more appropriate measure of the flow properties for the grout required. Refer to your concrete supplier to organise the measuring of the spread.*
- *Do not add extra water to retemper the grout (unless this is authorised by your concrete supplier) as this can affect the structural integrity of the product.*

2. STRENGTH GRADE

For internal applications the minimum strength grade of the grout should be 20MPa. For external applications in near-coastal zones (between 1km and 50km from the coast), the minimum strength grade should be 25MPa.

For external applications less than 1km from the coast, the minimum strength grade should be 32MPa.
For specialist applications or more severe environments, an engineer should be consulted.

3. AGGREGATE SIZE

Maximum aggregate size shall be 10mm (for 190mm block). The grout shall be smooth, free-flowing and cohesive. It is recommended consulting with an engineer and concrete supplier.

4. OTHER

A 'cohesive' mix is one which has no tendency to segregate when pumped down into the Versaloc® cavity. The concrete supplier should use a high-quality super-plasticiser to achieve the flow characteristics required.

Due to hydrostatic pressure build up by the fluid core-fill grout, a maximum filling height between pours of 1.8m (i.e. 9 courses) for the 200 series is strongly recommended to ensure no voids are left in the wall.

Grout should be rodded to ensure no voids are left in the grout.

Midland Brick

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