ALPHALITE™

standard masonry products

australmasonry®


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AUSTRAL MASONRY

style and function

Austral Masonry manufactures a range of masonry bricks and blocks complying with the requirements of the Australian Standard AS/NZS4455.1:2008 tested under AS4456:2013.

The Alphalite range has been designed as all-purpose units to meet all your masonry site requirements. These masonry units are not only lightweight and loadbearing but also achieve high fire rating and sound as well as having many other attributes.

Alphalite gives you:

- Fire rated and sound rated masonry
- High slenderness ratio
- Structural lightweight masonry (15MPa)
- Ease of rendering
- Easier to cut than standard blocks

Alphalite units are designed to be painted or rendered as there can be significant colour variation from batch to batch. For face block applications Austral Masonry recommends the GB Masonry Collection of colour masonry products.

A SMARTER CHOICE

Alphalite by Austral Masonry

Lighter and Easier to Install

Alphalite blocks are lighter than conventional grey blocks which makes them easier to work with on site and install.

Materials

Many aggregates used in the Alphalite mix are by-product materials which means they require less quarrying of natural sands or stones.

Low Embodied Energy

Alphalite is kiln-cured, but unlike clay units, the heat is low for concrete masonry, with some steam added for even curing. Because Alphalite masonry units are considerably lighter than standard concrete masonry this reduces emissions associated with product transport.

Durability

Many masonry buildings have passed their 100 year anniversaries. Structures that last longest, require less maintenance, and can be adapted for reuse having a lesser impact on the environment.

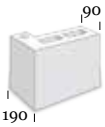
Better Product Lifecycle

Alphalite is low-pressure cured with minimal steam required. This low embodied energy combines with higher durability to make a favourable lifecycle analysis; at the close of which, Alphalite masonry can be crushed and re-used.

Summary

The Alphalite mix was designed with the intention of using as much by-product material as possible. No beaches or river beds are disturbed and cement usage is minimised.

Block Range 100mm Series

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	10.01	Full Hollow	390L x 90W x 190H	180	9.2	>10	120
	10.02 (30.04)	Three Quarter and Corner Block	290L x 90W x 190H	260	8.1	>10	120
	10.03 (20.04)	Half	190L x 90W x 190H	360	4.9	>10	120
	10.04	Quarter	90L x 90W x 190H	720	2.8	>10	120
	10.25	Corner Return	390L x 90/190W x 190H	144	11.7	>10	120
	10.31	90mm Solid	390L x 90W x 190H	108	12.2	>10	120
	10.739	45° Squint	290L x 90W x 190H	130	11.1	>10	120

Block Range 100mm Half Height Series

	10.71	Half Height Hollow	390L x 90W x 90H	360	5.5	>10	120
	10.73 (20.74)	Half Height Half	190L x 90W x 90H	720	2.9	>10	120
	10.83	Half Height Solid	390L x 90W x 90H	288	6.7	>10	120

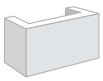
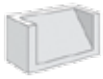
Block Range 120mm Series

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	12.01	Full Hollow	390L x 110W x 190H	120	11.9	>10	90
	12.25	Corner Return	390L x 110W x 190H x 190	120	15.0	>10	120
	12.801	1 .5 Hour Fire Rating	390L x 110W x 190H	120	14.1	>10	180
	12.802	Three Quarter	290L x 110W x 190H	160	11.0	>10	180
	12.803	Half	190L x 110W x 190H	240	7.2	>10	180
	12.739	45° Squint	290L x 110W x 190H x 90	120	14.1	>10	120

Block Range 150mm Series

	15.01	Full Hollow	390L x 140W x 190H	144	11.2	15	120
	15.02	Three Quarter	290L x 140W x 190H	192	9.7	15	120
	15.03	Half	190L x 140W x 190H	288	6.3	15	120

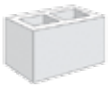
Block Range 150mm Series

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	15.09	Control Joint	390L x 140W x 190H	96	11.2	15	120
	15.10	Control Joint Half	190L x 140W x 190H	96	7.0	15	120
	15.12	Lintel	390L x 140W x 190H	120	15.1	15	120
	15.20	Knockout Bond Beam	390L x 140W x 190H	144	10.8	15	120
	15.22	7/8 Closure	340L x 140W x 190H	162	10.6	15	120
	15.25	Corner Return	390L x 100W x 190H x 190	126	13.5	15	120
	15.42	Channel	390L x 140W x 190H	144	11.0	15	120
	15.45	C Block Clean Out	390L x 140W x 190H	144	10.4	15	120
	15.48	'H' Block	390L x 140W x 190H	144	11.9	15	120
	15.140	140 High Block	390L x 140W x 140H	192	7.7	15	90
	15.801	4 Hour Fire Rating	390L x 140W x 190H	120	16.3	15	240
	15.803	4 Hour Fire Rated Half	190L x 140W x 190H	192	8.5	15	240
	15.739	45° Squint	290L x 140W x 190H	126	10.2	15	120
	15.745	Louvre Block	390L x 140W x 190H	96	15.8	15	N/A

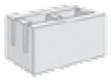
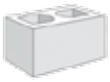
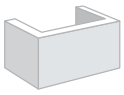
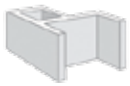
Block Range 150mm Half Height Series

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	15.71	Half Height Hollow	390L x 140W x 90H	240	5.8	15	120
	15.73	Half Height Half	190L x 140W x 90H	400	3.0	15	120
	75.710	140 Capper	390L x 140W x 40H	384	4.6	10	-

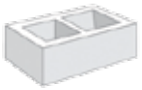
Block Range 200mm Series

	20.01	Full Hollow or Corner Block	390L x 190W x 190H	108	14.1	15	120
	20.02 (30.03)	Three Quarter	290L x 190W x 190H	144	10.0	15	120
	20.03	Half	190L x 190W x 190H	180	8.0	15	120
	20.03-42	Half Channel	190L x 190W x 190H	180	7.5	15	180
	20.04 (10.03)	Quarter	90L x 190W x 190H	288	5.9	15	180
	20.09	Control Joint	390L x 190W x 190H	72	15.0	15	180
	20.10	Control Joint Half	190L x 190W x 190H	72	9.6	15	180
	20.12	Lintel	390L x 190W x 190H	90	20.7	15	180
	20.13	Half Lintel	190L x 190W x 190H	216	7.9	15	180
	20.18	Deep Lintel	190L x 190W x 390H	108	13.0	15	120

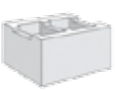
Block Range 200mm Series

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	20.20	Knockout Bond Beam	390L x 190W x 190H	108	12.6	15	120
	20.21	Corner Knockout Bond Beam	390L x 190W x 190H	108	13.9	15	120
	20.22	7/8 Closer	340L x 190W x 190H	126	11.6	15	120
	20.25	3/4 High Lintel	190L x 190W x 290H	144	11.0	15	120
	20.140	140 High Block	390L x 190W x 140H	144	10.6	15	120
	20.38	Half Height Flush Sill	190L x 95W x 115H x 30	180	6.4	15	N/A
	20.42	Channel	390L x 190W x 190H	108	13.2	15	120
	20.45	C Block Clean Out	390L x 190W x 190H	108	12.4	15	120
	50.45	Clean Out Tile and Spring	300L x 40W x 190H	192	4.5	15	120
	20.48	'H' Block	390L x 190W x 190H	108	12.0	15	120
	20.60	Bonded Pilaster Half	390L x 390W x 190H x 190 x 200	72	19.5	15	120
	20.925	Single Core	390L x 190W x 190H	108	15.8	15	120
	20.739	45° Squint	290L x 190W x 190H	126	11.0	15	120

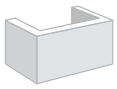
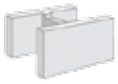
Block Range 200mm Half HeightSeries

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	20.71	Half Height Hollow	390L x 190W x 90H	180	6.5	15	120
	20.72	Half Height Three Quarter	290L x 190W x 90H	240	4.6	15	120
	20.73	Half Height Half	190L x 190W x 90H	360	4.3	15	120
	20.74 (10.04)	Half Height Quarter	90L x 90W x 90H	720	3.5	15	120
	50.31	190 Capper	390L x 190W x 40H	288	5.7	15	120

Block Range 300mm Series

	30.925	Full Hollow	390L x 290W x 190H	72	18.1	15	120
	30.02	Three Quarter	290L x 290W x 190H	96	15.6	15	120
	30.03 (20.02)	Half	190L x 290W x 190H	144	10.0	15	120
	30.04 (10.02)	Quarter	90L x 290W x 190H	240	8.1	15	120
	30.18	Deep Lintel	190L x 290W x 390H	72	20.4	15	120
	30.20	Knockout Bond Beam	390L x 290W x 190H	72	20.7	15	120
	30.42	Channel	390L x 290W x 190H	72	20.0	15	120

Block Range 300mm Series

Product	Product Code	Product Description	Size (mm)	Units Per Pallet	Approximate Weight (kg)	f 'uc (MPa)	Insulation FRL (minutes)
	30.45	C Block Clean Out	390L x 290W x 190H	72	16.4	15	180
	30.48	'H' Block	390L x 290W x 190H	72	15.3	15	180

Block Range 400mm Series

	40.925	Full Hollow	390L x 390W x 190H	54	22.3	15	120

Bricks

	48.65	Common	230L x 110W x 76H	420	3.0	15	180
	80.01	Double Height Brick	230L x 110W x 162H	300	5.7	15	90

Pavers

	50.31	190 Wall Cap	390L x 190W x 40H	288	5.7	15	N/A
	75.710	140 Wall Cap	390L x 140W x 40H	384	4.6	15	N/A

designing masonry for FIRE RESISTANCE

When a masonry wall is subjected to fire, which is usually only on one side, a thermal gradient is created through the thickness of the wall and the expansion of the material causes bowing towards the fire source. If this bowing extends far enough it can cause collapse of the wall. If the wall does not collapse, it can crack due to internal stresses caused by restraint of the thermal expansion, or it can heat up sufficiently to allow flammable material on the side away from the fire to ignite. Both these consequences may allow the fire to spread.

The National Construction Code (NCC) requires that walls be designed in accordance with Section 6: Design for Fire Resistance of AS3700:2011, to provide the required fire resistance in buildings. This system provides an accurate method of predicting the ability of a wall to maintain its strength in a fire and to resist the spread of fi re. The Austral Masonry Queensland Denseweight concrete masonry range complies with these standards. Note that these products contain less than 45% basalt in their mix designs.

The fire resistance level (FRL) is given in the form of three numbers, for example 180/120/120, which represent the required FRL (in minutes) for structural adequacy/integrity/insulation. Austral Masonry Queensland Denseweight products reach a 60 to 240/60/60* FRL rating when hollow and a 60 to 240/120/120* FRL rating when core filled.

***Optimum Slenderness Ratio (Srf) of masonry, from AS3700:2011, Table 6.1, is:**

Hollow	Core Filled and Reinforced
18.0 at 60 minutes	36.0 at 60 minutes
17.0 at 90 minutes	36.0 at 90 minutes
16.0 at 120 minutes	36.0 at 120 minutes
15.5 at 180 minutes	36.0 at 180 minutes
15.0 at 240 minutes	36.0 at 240 minutes

Structural Adequacy

Structural adequacy is the ability of a wall to continue to perform its structural function for the fire resistance period. The fire resistance period for structural adequacy is a function of the slenderness ratio for the wall and is governed by three formulae in AS3700:2011, Clause 6.3.2.2. These formulae use the masonry panel's height, length, thickness and restraint conditions around the perimeter to calculate the panel's slenderness ratio for fire (Srf).

The relevant Srfs for Queensland Denseweight product ranges are outlined in AS3700:2011 Table 6.1. (<45% Basalt) as seen below.

Restraint at the top of a wall can be provided by a load-bearing concrete slab, head ties from infill walls to the underside of a concrete slab or ties to a braced roof frame. End restraints can be provided by bonded corners, ties to columns or buttresses with a length greater than the wall height multiplied by 0.2. Where a wall butts into and is tied to the proposed fi re wall, it divides that wall into two panels for the purpose of calculating Srf.

Integrity

Integrity is the ability of a wall to maintain its continuity and prevent the passage of flames and hot gases through cracks in the wall for the fire resistance period. Design for integrity is based on Clause 6.4.2 of AS2700 which deems that the FRL for integrity will be met if the wall meets the value for insulation and structural adequacy.

Insulation

Insulation is the ability of a wall to provide sufficient insulation such that the side of the wall away from the fire does not exceed a pre-defined temperature during the fire resistance period. However, it should be noted that at this temperature – a rise of 140°C over the ambient temperature or a maximum of 180 °C – surface finishes and furnishings in contact with or near the wall may combust.

Insulation is governed by the material thickness of the masonry unit. For solid and cored (core volume less than 30%) masonry units, the 'material thickness' is taken as the actual thickness. The actual thickness is also used for hollow units in which all cores are filled with grout. For hollow units which are unfilled or partly filled, the 'material thickness' is the net or material volume of the unit divided by its face area, commonly referred to as ' equivalent thickness'. If the wall is cement rendered on both sides, the thickness of the thinner coating up to a maximum value of 20mm may be added to the material thickness of the wall.

BENEFITS

of Austral Masonry

When considering building products to use on your project, it's important to understand all the pro's and con's before making your final selections. But with concrete masonry products you know your making the right choice when you consider the host of benefits they offer including: sound insulation, thermal mass, environmental impact, colours and finishes, ongoing maintenance and many more. See the list of benefits below so you can build in confidence with concrete masonry.

Sound insulation

Due to their mass, concrete masonry blocks out noise better than traditional building materials, resulting in a quieter home environment.

Range of colours and finishes

Concrete masonry products are available in a range of over 78 colour and finish combinations. This offers you a wide range of products to choose from to suit the style of your home.

Thermal mass

Due to their mass concrete masonry products slow the transfer of external temperature fluctuations into internal living areas thereby reducing the need for artificial heating and cooling devices.

Affordable

When comparing other products on the market concrete masonry is an affordable option. This is especially true when considering the complete building system as concrete masonry can reduce or negate the need for accessory products such as sarking and insulation.

Low maintenance

When you build with concrete masonry products you are building with a material that requires minimal maintenance and upkeep so you have more time for the important things in life.

Fire resistant

Concrete masonry products are made from non combustible materials so they are fire resistant and therefore ideal for bushfire prone areas.

Weather resistant

Exterior Walls that will hold up to heavy storms, U.V. degradation, blistering heat, and sub-zero temperatures.

Termite resistant

Masonry walls wont be degraded by termites as there's no wood for the termites to eat.

Lower energy costs

Concrete masonry products are high thermal mass products which slow the transfer of temperature fluctuations from the outside into internal living areas. This reduces the need for use of articial heating and cooling devices and thereby reduces associated energy costs.

Low environmental impact

Masonry products production has minimal impact on the environment because they do not deplete precious natural and limited resources like many other materials. Concrete masonry products are cured in temperature controlled kilns with comparatively little energy used compared to kiln fired products.

Impact resistance

Because masonry products are made from concrete they are strong and durable which means that they can endure significant impact from external forces with minimal if any impact.

Speed of construction

Concrete masonry products are much faster to build with than some commonly used walling materials and have the added benefit of being both structural and aesthetic.

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DESIGN CENTRES

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and Bruce Highway
Gympie QLD 4570

Ormeau
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Yatala QLD 4208

Rochedale
105 Gardner Rd
Rochedale QLD 4122

Caloundra
14 Daniel St
Caloundra QLD 4551

DESIGN STUDIO

Brisbane
27 James St
Fortitude Valley QLD
4006

BUILDING PRODUCTS

A member of

Proud Supporters

Austral Masonry is part of the Brickworks Group

The product images shown in this brochure give a general indication of product colour for your preliminary selection.
Austral Masonry recommends all customers see actual product samples at a selection centre prior to making final selections.

1. Stock colours. Colours other than stock colours are made to order. Contact your nearest Austral Masonry office for your area's stock colours. A surcharge applies to orders less than the set minimum quantity. **2. Colour and texture variation.** The supply of raw materials can vary over time. In addition, variation can occur between product types and production batches. **3.** We reserve the right to change the details in this publication without notice. **4.** For a full set of Terms & Conditions of Sale please contact your nearest Austral Masonry sales office. **5. Important Notice.** Please consult with your local council for design regulations prior to the construction of your wall. Councils in general require those walls over 0.5m in height and/or where there is loading such as a car or house near the wall be designed and certified by a suitably qualified engineer. **6. Max wall heights disclaimer.** The gravity wall heights are maximum heights calculated in accordance with CMAA MA-53 Appendix D guidelines and a qualified engineer should confirm the suitability of the product for each application. As such, due consideration must be given to but not limited to: Cohesion. Dry backfill, no ingress of any water into the soil behind the retaining wall. All retaining walls are designed for zero surcharge unless noted otherwise. These walls are intended for structure Classification A walls only as defined in AS4678 Earth Retaining Structures as being where failure would result in minimal damage and/or loss of access. The product images shown in this brochure give a general indication of product colour for your preliminary selection. Austral Masonry recommends all customers see actual product samples at a selection centre prior to making final selections.