

HAWTHORN RESIDENCE - JANE RIDDELL ARCHITECTS

 **MASTERWALL**

The MasterWall Insulated External Wall System is designed to provide a long-lasting, energy efficient, weather-tight building envelope with architectural integrity and excellent performance credentials.

Masterwall offers designers the ability to create without compromise and builders to construct quickly, effectively and economically whilst reducing the carbon footprint of the building. That's why MasterWall is the leading choice of Australian home owners, builders, architects and designers.

## ABOUT MASTERWALL

The MasterWall Insulated External Wall System has been specifically developed to meet Australian conditions and is based on proven technology used extensively throughout Europe and North America for more than 60 years.

No other cladding product can claim such a wide range of product benefits including - Energy efficiency, Design flexibility and Economy.

Studies in the U S have shown that Insulated External Wall systems are the best performing wall systems and, "out performed all other walls in terms of moisture while maintaining superior thermal performance"

Source: Oak Ridge National Laboratory Research

## THE SYSTEM

The MasterWall system is an external lightweight, reinforced, insulating polystyrene wall panel, mechanically fixed to the outer face of the building whether that be timber or steel framing or a masonry substrate. The complete system includes the application of approved acrylic render systems, frame wraps, trims, sealants and opening flashings at openings that combine to create a weather-tight building envelope.

**Panel:** The base material is Medium (M) Grade expanded polystyrene (EPS) in sheet form with an added fire retardant.

**Facing:** Flexible cementitious-based material designed for both an excellent mechanical fix and a natural chemical bond to the polystyrene cladding, using the binders and polymers found in approved acrylic render systems. The finished surface of the panel has a light trowel type texture.

**Reinforcing:** This facing is reinforced with an alkaline-resistant fiberglass mesh, 145gsm/m<sup>2</sup> minimum and is compatible with approved acrylic render and decorative finishes.

### Dimensions:

Standard panel size: 2400 x 1200mm  
Nominal thickness: 50, 75, 100, 125mm  
Area: 2.88m<sup>2</sup>

### Mass:

Thickness	50mm	75mm	100mm	125mm
kg/m <sup>2</sup>	2.4	2.9	3.4	3.9
Total sheet kg	6.9	8.4	9.8	11.3

## PERFORMANCE

### Thermal Performance - R Rating Values:

Thickness	Rating	R <sup>t</sup>
125mm	3.3	3.6
100mm	2.7	2.9
75mm	2.0	2.3
50mm	1.3	1.7

NOTE: R<sup>t</sup> refers to the total thermal value of a wall system which includes an allowance of R 0.5 that can be attributed to a standard stud frame without batts and an internal lining of 10mm plasterboard.

### Fire Performance - Bushfire Attack Level (BAL) 29

The MasterWall system achieves a Bushfire Attack Level (BAL) 29 in compliance with AS3959-2009 'Construction of buildings in bushfire prone area'.

Comparative testing of some materials to AS1530, Part 3 – Early Fire Hazard Test.

Material	Ignitability (0-20)	Spread of Flame (0-10)	Heat Evolved (0-10)	Smoke Developed (0-10)
Polystyrene	12	0	3	5
Softboard	16	9	7	3
Oregon	13	6	5	3
Bluegum	11	0	3	2

Source: EBS Notes on Science of Building NSB66

### Wind Load Performance:

The MasterWall system has been engineered to achieve all wind loads required in the building code from N1 to N5 in accordance with AS4055. As testament to its strength, the MasterWall system has achieved a **Cyclonic Rating (C2)**, making it suitable for cyclonic zones across Australia.

### Weather-tight Performance:

The MasterWall system includes the installation of window flashings, and joint and penetration sealant processes that ensure a weather-tight building envelope, even before the application of the render system. To achieve the best performance, thermal bridging, weather tightness (and therefore air tightness), and the potential for moisture penetration must be addressed when considering the design of the external envelope of a building.

### Other Performance Properties:

For a full description of the MasterWall Insulated External Wall system please consult the website.

# MASTERWALL. THE FLEXIBILITY TO DESIGN GREAT SPACES

- LIGHT-WEIGHT CONSTRUCTION
- VARIETY OF TEXTURES & FINISHES
- CURVED FACADES OR CLEAN, STRAIGHT LINES
- FULLY WEATHER-TIGHT, MONOLITHIC FINISH ON WALLS, SOLID BALCONY BALUSTRADES AND PARAPETS
- BRICK-LIKE WINDOW AND DOOR REVEALS



## ESTIMATING R VALUES\*

### Thermal rating of common wall construction materials

As owners and builders become more conscious of the rising financial and environmental costs of energy, thermal efficiency is becoming increasingly important. Government energy rating standards for residential homes is an example of the initiatives that are driving the way we build and renovate.

Whilst a building's overall energy rating incorporates many different factors, core considerations are the thermal efficiency of the walls, ceilings and floors. Insulation of the building envelope keeps heat in during winter, but also keeps heat out during summer to improve comfort and save energy. A well insulated home can save an average of 20% of energy costs per year. Whilst design can certainly affect thermal efficiency, the correct choice of wall cladding materials is the single most important consideration.

An R Rating of up to R<sup>t</sup> 3.6 can be achieved with MasterWall's 125mm polystyrene panel, stud frame and 10mm internal plasterboard.

WALL CONSTRUCTION	R VALUE
MasterWall (125mm)	R 3.3
Weatherboard	R 0.55
Brick veneer	R 0.51
Solid brick (230 mm thick)	R 0.44
Solid concrete (100 mm thick)	R 0.23
Solid concrete (200 mm thick)	R 0.30
Aerated concrete (100 mm block)	R 0.78
Hebel (75 mm panel)	R 0.59

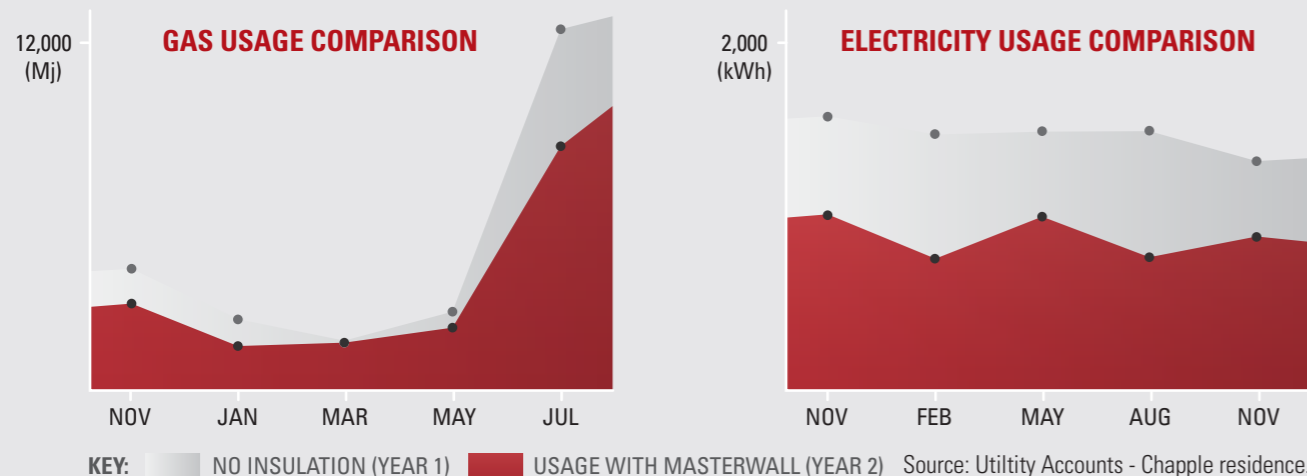
\*As R value increases, the insulation benefit improves.  
Source: Sustainable Energy Authority Victoria 2002, MasterWall (CSIRO tests)

## HOUSEHOLD ENERGY BILLS - WITH AND WITHOUT MASTERWALL

Most people understand the long term value of installing solar panels on the roof of their home, but it's not necessarily the same case when it comes to insulating and weatherproofing. In winter, heat loss occurs through walls and ceilings that are poorly insulated, and gaps in floorboards and wall cavities is a major source of heat loss. To prove the point, MasterWall spent 12 months collaborating with one of its customers after installing the MasterWall system. Energy consumption pre and post installation was compared, with the results proving what the owners experienced day-to-day (see graph diagram below).

*"Over the last 12 months I have notice a huge change in the consistency of the temp in the house when either the heating or cooling is on, the house remains warm in winter and cool in summer without the need for turning on the heater or airconditioner day and night".*  
~ Jo Chapple.

**The results are even more dramatic given the household went from 2 adult occupants between Nov to May of the first year to 3 adults thereafter.** The MasterWall system is the only system on the market that provides a total, weather-tight insulation solution whilst at the same time significantly increasing the external design-value of your home.



# MASTERWALL COMPARE THE BENEFITS OF THE MASTERWALL SYSTEM

ADD UP THE ADVANTAGES OF MASTERWALL AND YOU'LL DISCOVER A SYSTEM THAT DELIVERS BETTER VALUE, FASTER INSTALLATION AND SUPERIOR QUALITY.



THE MASTERWALL EXTERNAL WALL CLADDING SYSTEM HAS ACHIEVED CODEMARK ACCREDITATION. THIS PROVIDES COMPLETE ASSURANCE THAT THE SYSTEM WILL BE ACCEPTED BY ALL BUILDING AUTHORITIES THROUGHOUT AUSTRALIA.

### CODEMARK ACCREDITATION

The MasterWall system has undergone stringent testing to demonstrate the suitability to the relative performance requirements within both volumes, one and two of the National Construction Code (NCC) as a premium lightweight polystyrene cladding system. For copies of the CodeMark Certificate visit our website.

### SAVE TIME AND MONEY

The lightweight construction speeds up installation ensuring minimum time to lock-up. Depending on the design, the MasterWall system can be more than 30% cheaper than rendered brick veneer.

### IMPACT RESISTANCE

Strong and secure, MasterWall has impressive impact resistance, including exceptional compressive and flexural strength and dimensional stability, which provides opportunities for innovation in design and construction.

### REDUCE YOUR ENERGY COSTS

MasterWall gives you excellent thermal insulation, with the flexibility of a choice of R ratings, up to R<sup>t</sup> 3.6, to suit individual applications. Traditional insulation in between studs has "thermal breaks", gaps where heat and cold pass more freely between the outdoors and space within. By wrapping the house in a seamless blanket it stabilizes the interior environment and reduces energy consumption.

### WEATHER-TIGHT SOLUTION

The MasterWall system provides a weatherproof facade to the building having been tested to comply with the Verification Method FV1 in Volume 1 of the NCC and V2.2.1 of Volume 2.

### DESIGN FREEDOM

A designer's dream, the MasterWall system offers the ability to design features such as curved walls and with different thicknesses, create light-weight second storey structures or apply different colours and textures all of which would be prohibitively expensive if using any other material.

### BUSHFIRE ATTACK LEVEL

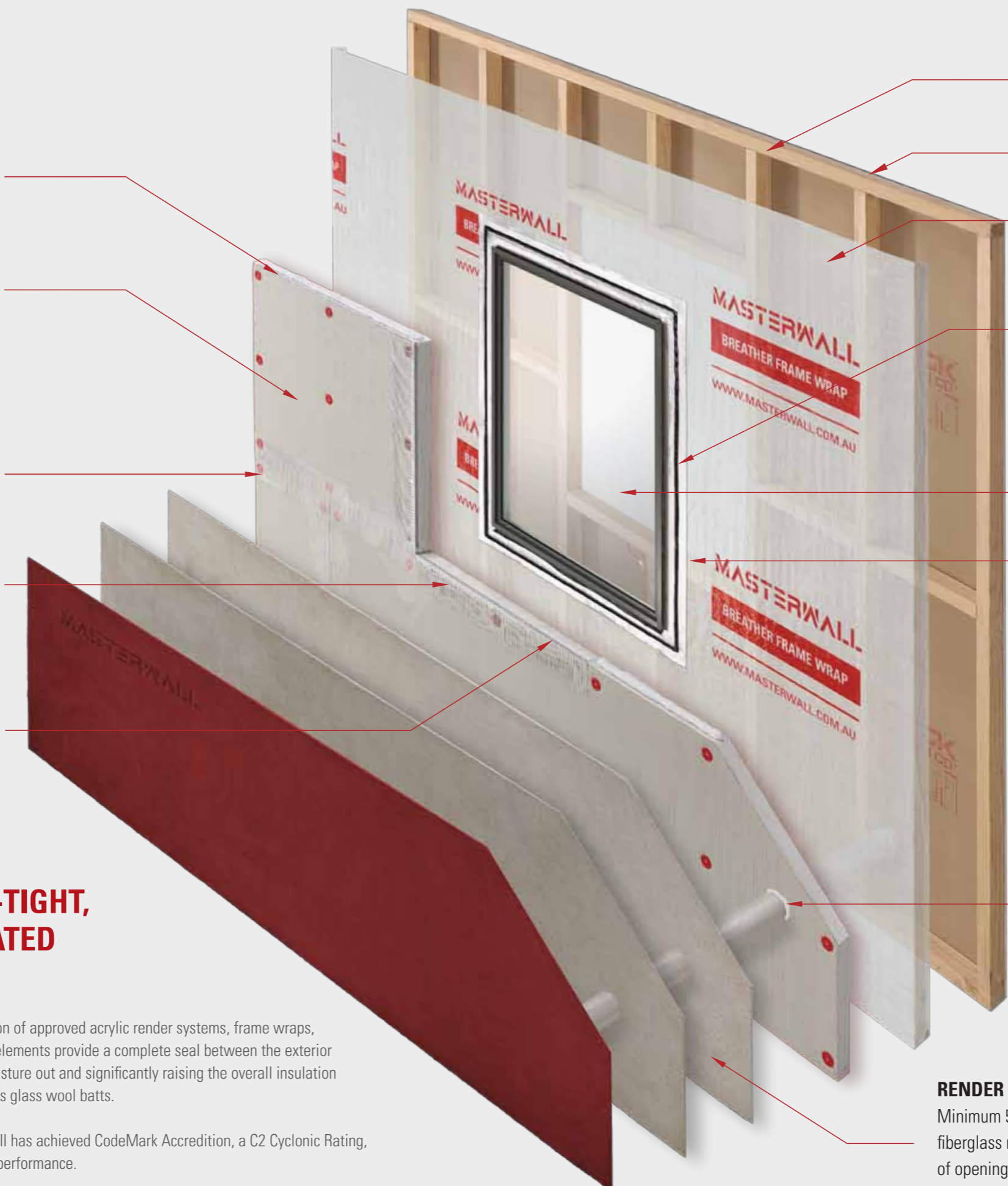
The MasterWall system has achieved a Bushfire Attack Level (BAL) 29 when tested to the rigorous AS1530.8.1-2007 test method of radiant bushfire simulation including burning ember attack. This is a complete system test incorporating all of the MasterWall components and complies with your choice of either a Watty! Granosite or Dulux Acratex render system.

### TECHNICAL SUPPORT

MasterWall Australia has an outstanding commitment to providing complete product support including an online Technical Centre - a one-stop resource for information about the MasterWall system. MasterWall Australia also offers a nationwide telephone technical help line offering advice from building design and installation techniques to help ensure that the MasterWall system is installed to provide optimum performance of the external building fabric.

### CYCLONIC RATING

The C4 Cyclone Rating demonstrates MasterWall's superiority under extreme weather conditions.



**POLYURETHANE FOAM SEALANT:**

100% flexibility ensures integrity and weatherproofing of joints.

**MESHED & PRIMED MASTERWALL PANELS:**

M grade polystyrene, light weight, designed to move with the frame  
(Thicknesses: 50/75/100/125mm R 1.7/2.3/2.9/3.6)

**FIXINGS:**

Pre-assembled 40mm button and class 4 screw sets provide the right fix for every situation.

**ALLOY EXTERNAL CORNERS:**

With integrated reinforcing mesh for strength.

**NO NEED FOR POST FORM REVEALS:**

No need to double frame to achieve brick like reveals.

**HOW WE BUILD A WEATHER-TIGHT, ENERGY EFFICIENT & INSULATED WALL SYSTEM**

MasterWall is a complete system which includes the application of approved acrylic render systems, frame wraps, trims, sealants and opening flashings. When combined, these elements provide a complete seal between the exterior and interior of a building, thereby keeping the weather and moisture out and significantly raising the overall insulation performance when compared with stand-alone products such as glass wool batts.

Apart from giving you great insulation performance, MasterWall has achieved CodeMark Accreditation, a C2 Cyclonic Rating, a Bushfire Attack Level (BAL) 29 and offers excellent acoustic performance.

From a design perspective, the system can be finished in a variety of architectural textures and finishes to create the look you want.

**TIMBER OR METAL STUD FRAME.**

**INTERNAL PLASTERBOARD LINING.**

**MASTERWALL BREATHER WRAP:**

A superior translucent breather type paper which provides a high performance vapor control.

**PREMIUM QUALITY MODIFIED LIQUID SEALANT:**

Creates a gasket seal between back of panel and the flashing tape.

**ALUMINIUM OR TIMBER WINDOW.**

**MASTERWALL SELF ADHERING FLASHING TAPE:**

A high performance flashing system uniquely formulated for MasterWall.

**POLYURETHANE FOAM SEALANT:**

All cavities around penetrations filled with polyurethane sealant.

**RENDER PROCESS:**

Minimum 5mm approved acrylic render system including fiberglass mesh jointing tape to all panels and 45° to all corners of openings.

## SHARING OUR RESEARCH AND KNOWLEDGE

When you choose MasterWall EIFS you not only get Australia's leading Insulated Wall system, you also are assured industry-leading support and the reassurance that all our Distributors and Accredited Installers are trained experts in the MasterWall system:

- Nationwide telephone technical support.
- Online resources including detailed construction manuals.
- Regular building seminars across metropolitan and regional Australia.
- Regular feedback to regulatory bodies; building surveyors (AIBS), Councils, the CSIRO & the MBA.

## NATIONAL DISTRIBUTION


MasterWall is available in most parts of Australia via our network of capital city and regional distributors who are experts in delivering the MasterWall system.

## WARRANTY

MasterWall Australia Pty Ltd warrants that its products are free from defects in materials and workmanship for a period of 7 years from the date of purchase. (For a full description of the Warranty refer to the MasterWall website).

## ONLINE SUPPORT

Further details are available on the Masterwall website including downloadable brochures:

-   
Step By Step Guide
-   
Architectural Specifications
-   
Installation & Construction Details

All of these booklets are available online at:  
[www.masterwall.com.au](http://www.masterwall.com.au)

YOUR LOCAL ACCREDITED INSTALLER / DISTRIBUTOR:

TO LEARN MORE:  
[WWW.MASTERWALL.COM.AU](http://WWW.MASTERWALL.COM.AU)

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 **MASTERWALL** | **K-SERIES**  **UMBRA** **SKYLINE** **MATRIX** **MASTERFLOOR** **MASTER ART** **X-SERIES**

MasterWall Australia offers a unique range of modern, insulating wall and floor construction solutions for residential & commercial projects. [www.masterwall.com.au](http://www.masterwall.com.au)