

# MaxiWall High-Rise Internal Wall System



## Technical Guide

**BigRiver**

Building Australia for over 100 years

**MAXI**WALL

## Our Story

With over 110 years in the timber industry, Big River is now one of Australia's largest timber manufacturing and marketing businesses, with a diverse business servicing all Australian States and many international projects.

Big River owns and manages sales and distribution outlets in Sydney, Brisbane, Townsville, Adelaide, Melbourne, Sunshine Coast and Perth, servicing the construction and building industry as well as the manufacturing sector with a diverse range of timber products and other associated construction materials such as Maxiwall – a strong yet lightweight walling panel made from Autoclaved Aerated Concrete (AAC) and reinforced with corrosion protected steel mesh.

Maxiwall is sourced from world class production facilities using German technology and automated processes to ensure each Maxiwall panel is of optimum quality and consistency.

Big River provides customers with the security of a full support network, and technical expertise at every stage of the product lifecycle. This is the guarantee of quality and service that Big River has based its 100 years of success on.

## Strategic intent

Our focus is on developing products and systems that get the job done, embracing the idea of customer needs, satisfaction and price sensibility.

We are committed to delivering new and innovative building systems that provide a more comfortable and sustainable “home living” experience.

## 1.0 Contents & Use of Manual

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This technical guide contains design, installation and technical information intended for use as a general guide by qualified design and building construction professionals including licensed builders in the construction of party walls for high-rise.

This document does not substitute the necessary knowledge, experience and judgment of qualified design and building construction professionals. They should be consulted to ensure that the specific building systems, its components and installations are suitable for the projects and conform to building codes under Australian laws.

Big River is not responsible for ensuring the correctness or suitability of the systems or compliance with federal, state or local laws and regulations, including building, environmental and other codes.

## 2.0 MaxiWall Panel

The MaxiWall Autoclaved Aerated Concrete (AAC) wall panel is a durable, lightweight, steel reinforced innovative building panel that offers excellent benefits as an external wall system for high-rise residential buildings. Some of the benefits include:

- Environmentally friendly – no toxic gases or hazardous waste
- Quick installation – reduced time and labour costs
- Fire resistant – helps prevent spread of fire
- Energy efficient – high thermal mass and thermal isolation
- Excellent soundproofing – reduces noise transmission significantly
- Durability – not affected by harsh climatic conditions

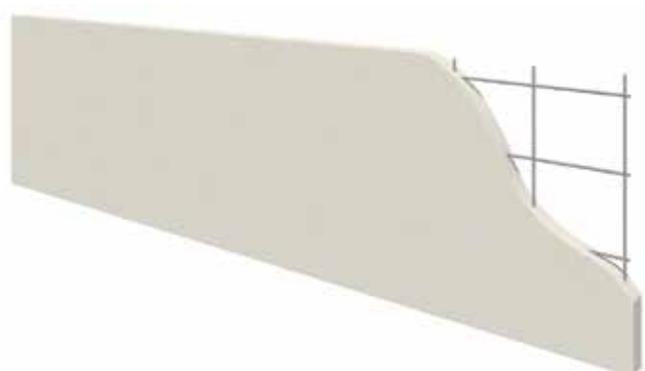
MaxiWall wall panels are manufactured using the latest state-of-the-art German production technology and plant. Made from cement, fine aggregates, lime and water, an expansion agent is added to the mixed slurry which causes it to rise like dough containing closed air pockets that results in its lightweight and energy efficient benefits. The material is molded and wire-cut into dimensioned panels and cooked with steam (autoclaving). AAC has been used in Europe for more than 70 years and continues to be widely accepted in Australia since its introduction over 20 years ago.

Building homes with MaxiWall wall panels will deliver a quieter, cooler and more comfortable “home living” experience. With four times greater thermal resistance than standard house bricks, the amount of energy required to heat or cool is greatly reduced thus resulting in cost savings to homeowners.

MaxiWall wall panels are lighter than other concrete and masonry products allowing for faster installation, easier handling and more flexible solutions to external wall system requirements.

MaxiWall wall panels are available in the following dimensions and steel reinforcement.

<b>Thickness:</b>	75mm
<b>Width:</b>	600mm
<b>Length:</b>	1350 to 3000mm
<b>Reinforcement:</b>	Single steel mesh, centrally located
<b>Steel wire:</b>	4 x 5mm longitudinal and transverse bars



## 3.0 Advantage & Benefit



### **Strong & Durable**

MaxiWall steel reinforced panels have that solid feel of traditional bricks. With an approved external render finish MaxiWall is not affected by our harsh Australian climatic conditions and will not degrade under normal conditions.

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### **Cost Effective**

MaxiWall lightweight panels are easy to handle on-site with standard construction tools and quick to build with resulting in lower labour costs.

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### **Fire Resistant**

MaxiWall is manufactured from aerated concrete and is non-combustible and therefore suitable for fire-rated applications such as boundary and party walls in residential and commercial applications.

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### **Safe**

MaxiWall does not contain any toxic substances or odours, and will not harbour or encourage vermin.

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### **Energy Efficient**

MaxiWall has a closed aerated structure which gives it superior thermal insulation properties compared to concrete or brick veneer. MaxiWall is therefore a smarter choice for lower heating and cooling energy consumption.

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### **Superior Acoustics**

MaxiWall also has superior soundproofing and acoustic insulation properties.

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### **Sustainable**

MaxiWall is a cleaner, greener and more sustainable choice. On a volume comparison, MaxiWall has manufacturing, embodied energy and greenhouse gas emission impacts significantly less than those of concrete and bricks.

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### **Proven & Backed By Big River**

AAC was invented in Sweden over 70 years ago and is widely used in building throughout Europe as well as other regions in the world. Its popularity amongst architects, builders and homeowners in Australia has been growing significantly over the past 20 years.

MaxiWall is now available and supported in Australia through the established national sales and distribution network of the Big River Group

## 4.0 MaxiWall Internal Wall System

The MaxiWall internal wall system is designed for the construction of internal non-load bearing walls within concrete frame structures. The types of wall include separating, intertenancy, shaft and partition walls.

The system comprises of 75mm thick MaxiWall AAC panel embedded with reinforcing corrosion protected steel mesh in longitudinal and transverse directions, installed spanning vertically between concrete floor and soffit, supported at the floor by base angle and screw connections and by a deflection track at the top. The panel joints are fully filled with thin bed mortar.

Discontinuous walls are constructed by installing a second substrate of AAC panel or studs of normally cold-formed steel. Additional cavity spaces can be achieved by using furring channels or battens. Insulation is installed to cavities as specified in order achieve the required soundproofing performance and wall linings for the right surface finishing.

For fast, construction flexibility and the ability to make easy adjustments on site, the MaxiWall wall panels can be procured in standard lengths of 1350mm, 1800mm, 2400mm, 2550mm, 2700mm, 2850mm and 3,000mm and in width of 600mm.

### Typical view of an internal wall



## 5.0 Design Consideration

The MaxiWall internal wall is an effective and economical construction material. To capitalise on the product benefits and architectural features the following considerations are important:

- ✓ Structural Performance (Panels are considered non-load bearing)
- ✓ Fire Resistance Level (FRL)
- ✓ Sound insulation performance (Rw+Ctr values)

When constructed in accordance with details in this manual, panels will comply with the requirements of Volume One of the National Construction Code for nonload bearing internal walls.

It is important to select the appropriate wall configuration and fixing method outlined in this manual for the specific site conditions. Ensure the Project Engineer approves the selected detailed design documentation as complying with NCC requirements.

Typical loads for a non-load bearing internal wall in a high-rise residential building are expected to be:

- Out-of-plane loads due to internal wind pressures
- Live load due to human impact; 0.5kPa
- R-Value in Table 1 is calculated based on the mean dry thermal conductivity density  $\lambda_{10dry}$  (50%) as per BS EN 12602:2008 Clause 4.2.13, Table 4.

The structural performance of the 75mm MaxiWall wall panel has been independently tested and verified by the structural reliability verification method BV1 of the NCC Volume One.

The technical information contained in this manual for the construction of internal non-load bearing walls for high-rise residential buildings using the 75mm MaxiWall AAC wall panel are typically classified as Class 2 buildings and therefore Volume One of the National Construction Code applies.

Any variation of the wall system arrangements, components and finishes outlined in this manual is beyond the scope of this manual. It must therefore be referred to the relevant professional consultants for verification of design, specification and sitespecific confirmation of compliance with NCC requirements.

The MaxiWall wall panel has been issued with CodeMark™ Certificate of Conformity. This certification provides a nationally and internationally accepted process for products assessment for compliance.

## 6.0 System Component

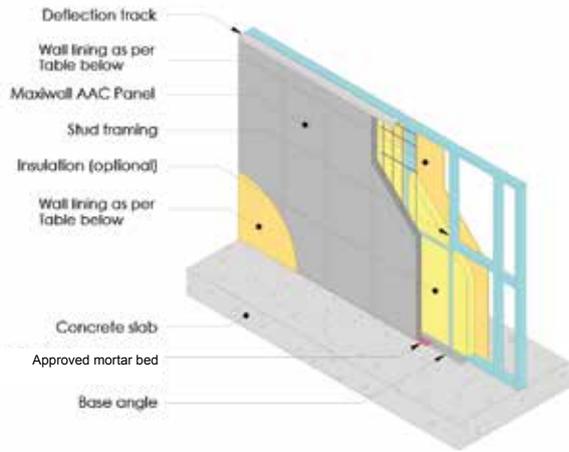
<b>Thin-Bed Mortar</b>	A thin-bed bonding mortar with high adhesion strength specifically manufactured for the placement of MaxiWall wall panels where levelling and bonding application is required for wall construction. The mortar helps in the integrity of an airtight construction for sound insulation and fire protection at the base of the panels.
<b>AAC Adhesive</b>	The adhesive for MaxiWall wall panels is a factory prepared blend of carefully selected raw materials such as cement, graded aggregates and strengthening and performance additives. It is a dry mixed product used as a structural thin bed adhesive for adhering the panels in the construction of walls.
<b>Patch Compound</b>	A pre-mixed, water based jointing and patching compound used for repairing minor chips, cracks and damage particularly to the corners and edges. It can also be used as a filler compound.
<b>Joint Sealant</b>	Designed for sealing joints and wall penetrations that are subjected to high humidity and movements. The joint sealant provides superior integrity for fire and acoustic sealing. Even when excessively stretched sealants help maintain the joint's integrity.
<b>Anti-Corrosion Paint</b>	Used for coating and protection of the exposed steel reinforcement mesh from corrosion after cutting.
<b>Fasteners</b>	14-10x65 screws installed with 2 screws per panel with spacing not greater than 300mm centres maximum. Screw 100mm from edges or ends of panels.
<b>Supporting Channels</b>	Base Angle: 50mmx50mmx0.8 BMT Deflection Head Track: 76mmx50mmx0.8 BMT
<b>Steel Frame</b>	Stud: 64mmx0.75 BMT (Minimum) Track: 64mmx0.55 BMT Furring Channel: 28mm, 40mm, 50mmx0.75 BMT

Note: System components must be supplied by approved supply partners. Refer to [www.bigrivergroup.com.au](http://www.bigrivergroup.com.au)

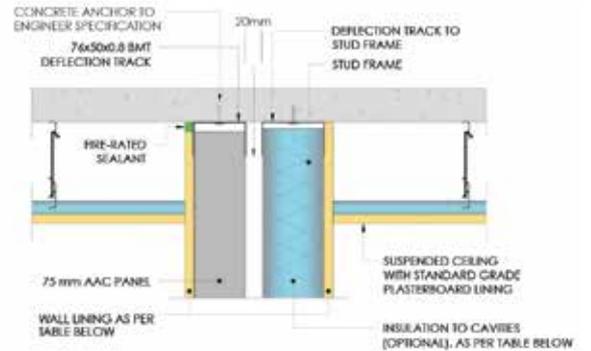
# 7.0 Intertency Wall

## Type A: With concealed services on one side

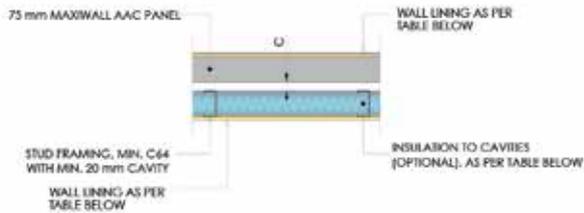
### Isometric Detail



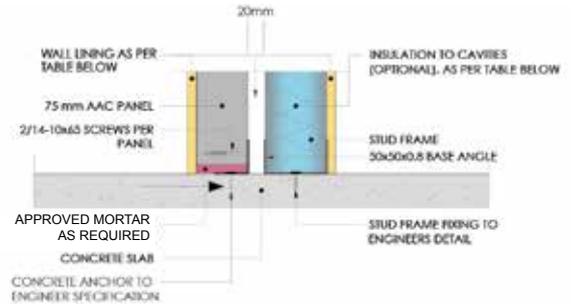
### Head Fixing



### Plan Section



### Base Fixing



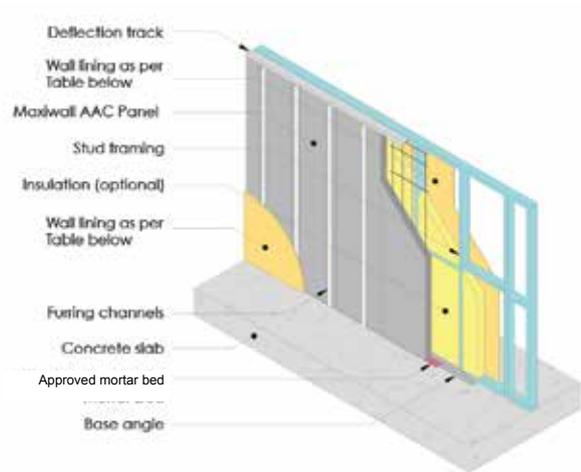
Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
A	Lining 1 75mm MaxiWall wall panel 20mm cavity Steel stud Insulation type 3 or 4 * Lining 2	13mm water resistant plasterboard	13mm water resistant plasterboard	185mm	-/120/120	59	52	Yes
		13mm standard plasterboard	13mm standard plasterboard	185mm	-/120/120	58	50	
		13mm fire resistant plasterboard	13mm fire resistant plasterboard	185mm	-/120/120	59	52	
		16mm fire resistant plasterboard	16mm fire resistant plasterboard	191mm	-/120/120	59	52	

'Insulation Type 3: Polyester 75mm thick of at least 14kg/m3 density \*\* Discontinuous Construction

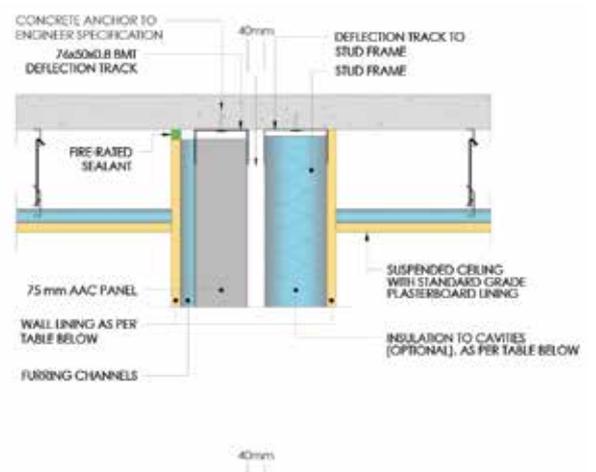
Insulation Type 4: Glasswool 75mm thick of at least 11 kg/m3 density

## Type B: With concealed water services

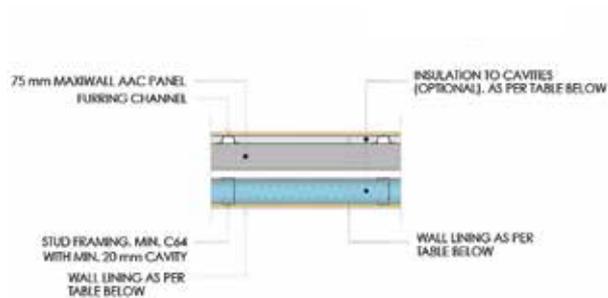
### Isometric Detail



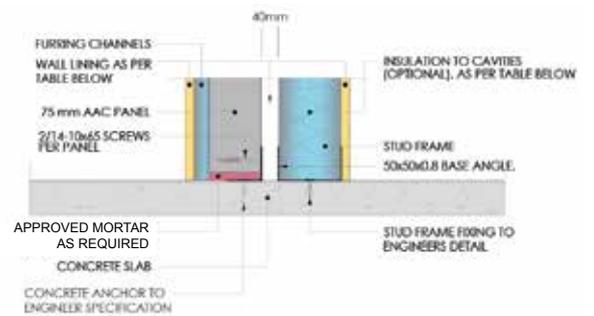
### Head Fixing



### Plan Section



### Base Fixing

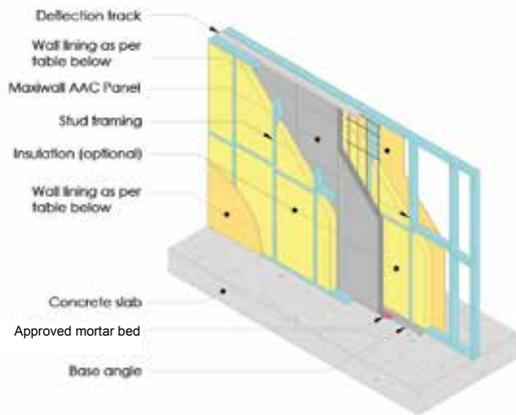


Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
B1	Lining 1 Furring channel 28mm using Betafix clips Insulation type 3 * 75mm MaxiWall wall panel 40mm cavity Steel stud Lining 2 Insulation type 4 *	13mm water resistant plasterboard	13mm water resistant plasterboard	233mm	-/120/120	64	51	Yes
B2	Lining 1 28mm furring channel using Betafix clips Insulation type 5 * 75mm MaxiWall wall panel 40mm cavity Steel stud Lining 2 Insulation type 4*	16mm fire resistant plasterboard	13mm water resistant plasterboard	236mm	-/120/120	65	50	Yes

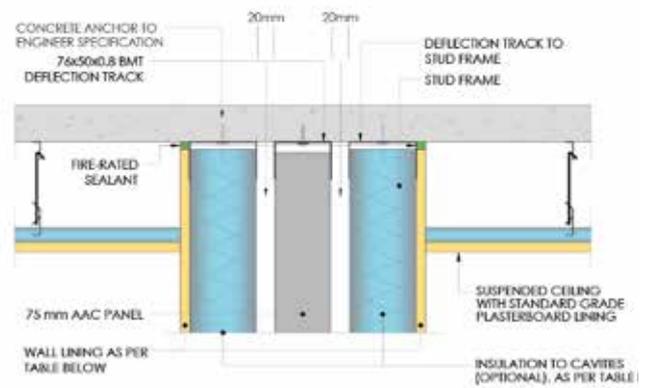
\*Insulation Type 1: Glasswool 100mm thick of at least 11 kg/m<sup>3</sup> density; Insulation Type 3: Earthwool E2905 50mm thick of at least 14kg/m<sup>3</sup> density \*\* Discontinuous Construction  
 Insulation Type 2: Polyester 100mm thick of at least 14kg/m<sup>3</sup> density; Insulation Type 4: Earthwool acoustic grade E4333 90mm thick of at least 20kg/m<sup>3</sup> density;  
 Insulation Type 5: Polyester 50mm thick of at least 14kg/m<sup>3</sup> density

## Type C: With large services on both sides

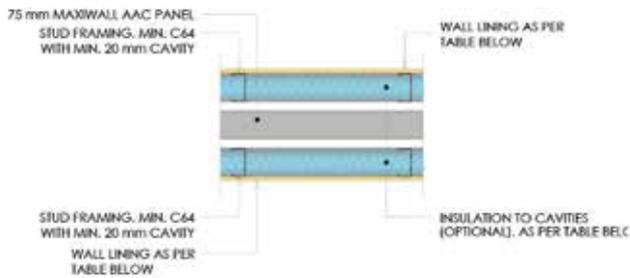
### Isometric Detail



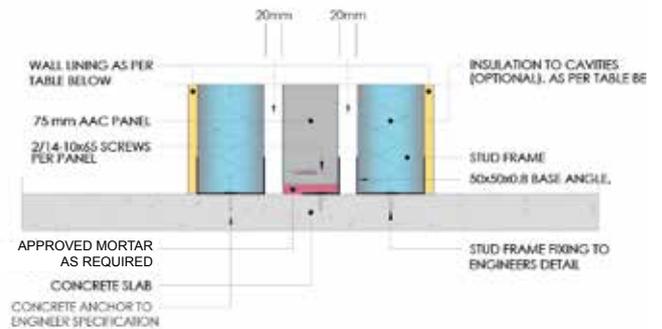
### Head Fixing



### Plan Section



### Base Fixing

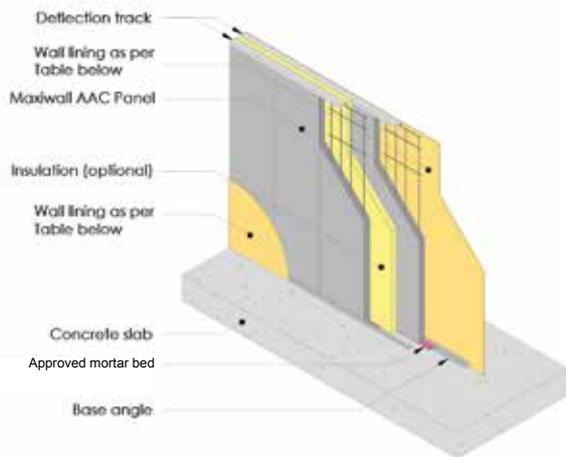


Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
C1	Lining 1 Steel Stud Insulation type 1 and 2 * 20mm cavity 75mm MaxiWall wall panel 20mm cavity Steel stud Insulation type 1 or 2 * Lining 2	13mm standard plasterboard	13mm standard plasterboard	269mm	-/120/120	63	50	Yes
		13mm fire resistant plasterboard	13mm standard plasterboard	269mm	-/120/120	63	51	
		16mm fire resistant plasterboard	16mm standard plasterboard	275mm	-/120/120	64	53	
		13mm sound resistant plasterboard	13mm sound resistant plasterboard	269mm	-/120/120	64	53	

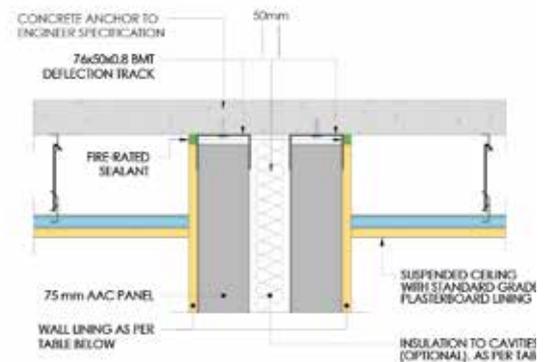
\*Insulation Type 1: Glasswool 100mm thick of at least 11 kg/m<sup>3</sup> density \*\* Discontinuous Construction  
Insulation Type 2: Polyester 100mm thick of at least 14kg/m<sup>3</sup> density

## Type D: Where high acoustic performance is required

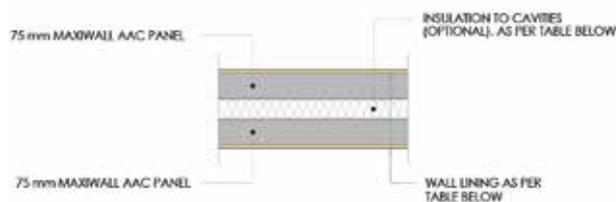
### Isometric Detail



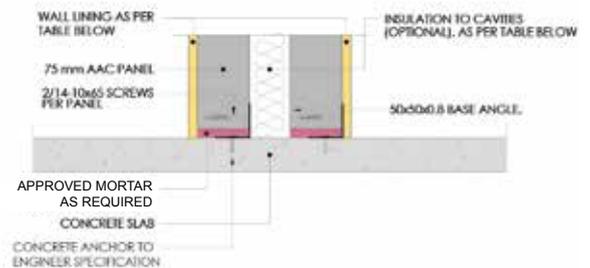
### Head Fixing



### Plan Section



### Base Fixing

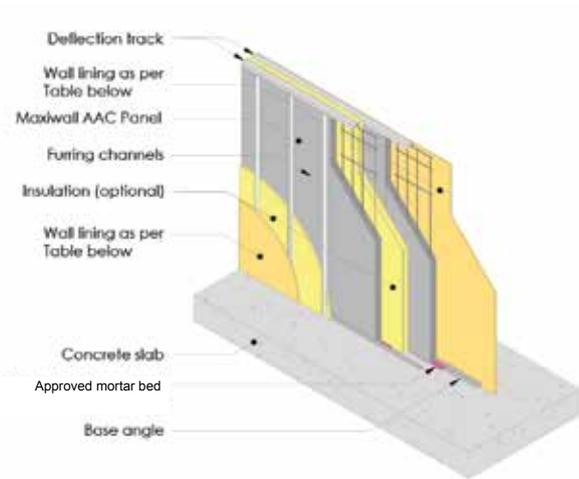


Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
D1	Lining 1 75mm MaxiWall wall panel 50mm cavity Insulation type 6 * 75mm MaxiWall wall panel Lining 2	13mm standard plasterboard	13mm standard plasterboard	226mm	-/120/120	57	51	No
		13mm water resistant plasterboard	13mm water resistant plasterboard	226mm	-/120/120	57	52	
D2	Lining 1 75mm MaxiWall wall panel 75mm cavity Insulation type 3 * 75mm MaxiWall wall panel Lining 2	10mm standard plasterboard	10mm standard plasterboard	245mm	-/120/120	56	50	No
		13mm standard plasterboard	13mm standard plasterboard	251mm	-/120/120	57	52	
		13mm water resistant plasterboard	13mm water resistant plasterboard	251mm	-/120/120	58	53	

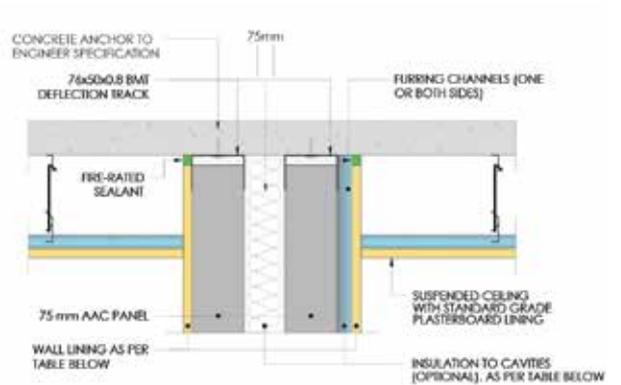
\*Insulation Type 1: Glasswool 100mm thick of at least 11 kg/m<sup>3</sup> density \*\* Discontinuous Construction  
 Insulation Type 2: Polyester 100mm thick of at least 14kg/m<sup>3</sup> density

## Type E - Where high acoustic performance is required with water services

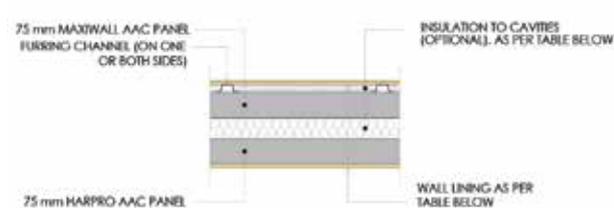
### Isometric Detail



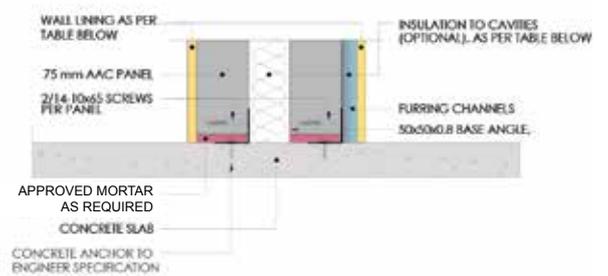
### Head Fixing



### Plan Section



### Base Fixing



Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
E	Lining 1 28mm furring channel 75mm MaxiWall wall panel 75mm cavity with Insulation 3, 4 and 8 75mm MaxiWall wall panel Lining 1	16mm fire resistant plasterboard	13mm standard plasterboard	282mm	-/120/120	65	55	No
	Lining 2 50mm furring channel 75mm MaxiWall wall panel 75mm cavity with Insulation 3, 4 and 5 75mm MaxiWall wall panel Lining 2	16mm fire resistant plasterboard	13mm standard plasterboard	304mm	-/120/120	66	54	

\*Insulation Type 3: Polyester 75mm thick of at least 14kg/m3 density \*\* Discontinuous Construction

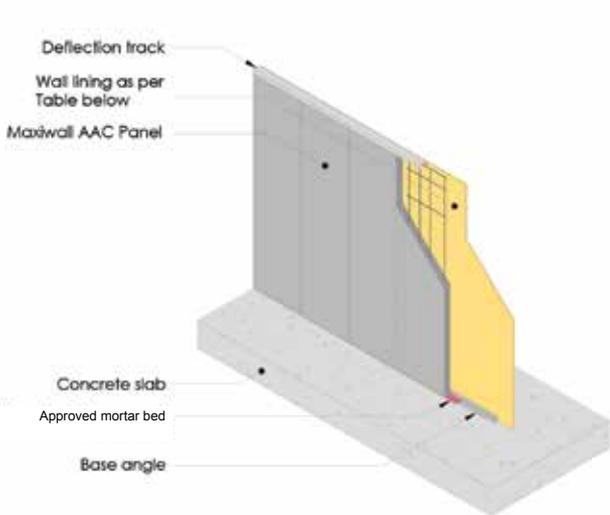
Insulation Type 4: Glasswool 75mm thick of at least 11 kg/m3 density Insulation

Type 5: PolyesCtoern tcyrpeete A sSlabB3, MSB3 orTSB3 Insulation Type 8: polyester type ASB2, MSB2 orTSB2

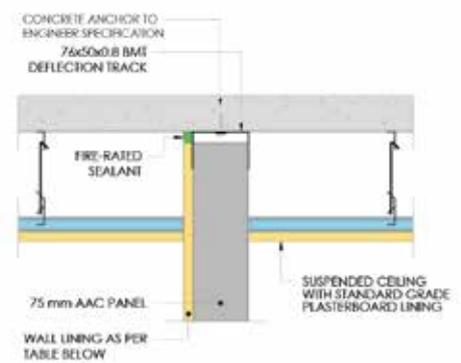
# 8.0 Shaft Wall

Type F - For partition between services and wet non-habitable rooms

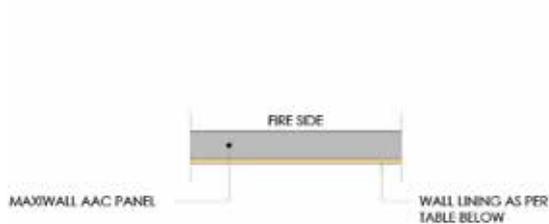
## Isometric Detail



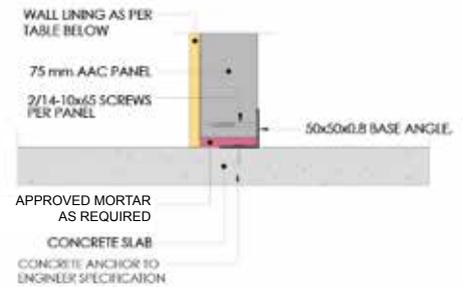
## Head Fixing



## Plan Section



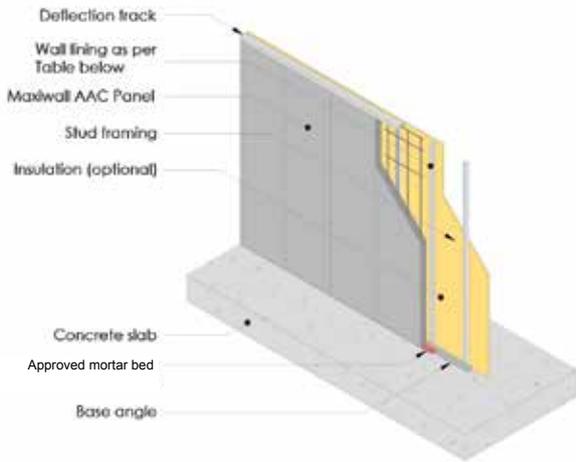
## Base Fixing



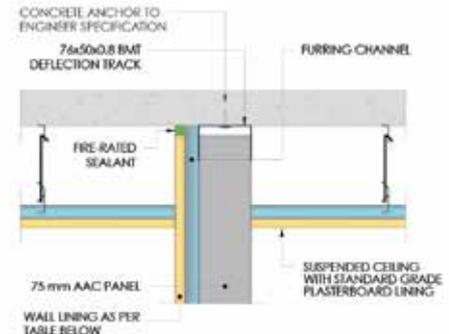
Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
F	75mm MaxiWall wall panel (exposed to fire) Lining 1	13mm standard plasterboard 13mm water resistant plasterboard	-	88mm minimum	-/120/120	35	32	No

## Type G - For partition between services and dry habitable rooms

### Isometric Detail



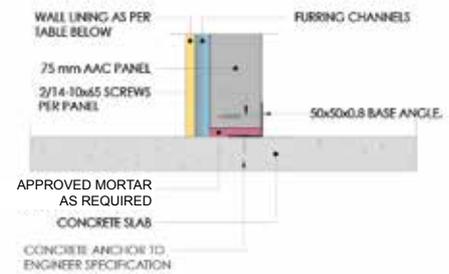
### Head Fixing



### Plan Section



### Base Fixing



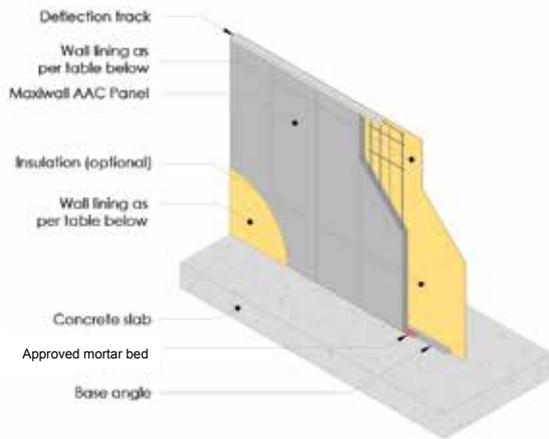
Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
G	75mm MaxiWall wall panel (exposed to fire) Furring channel Insulation type 5* Lining 1	2x 13mm standard plasterboard with 28mm furring channel	-	129mm	-/120/120	43	40	No
		13mm standard plasterboard with 40mm furring channel		128mm	-/120/120	50	40	
		13mm fire resistant plasterboard with 40mm furring channel		128mm	-/120/120	51	42	
		16mm fire resistant plasterboard with 28mm furring channel		119mm	-/120/120	50	40	

Insulation Type 5: Polyester type ASB3, MSB3 or TSB3 \*\* Discontinuous Construction

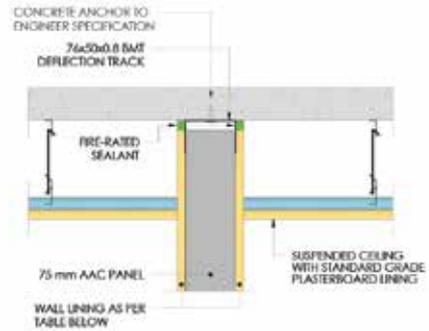
# 9.0 Common Wall

## Type H - Where fire rating is required on both sides

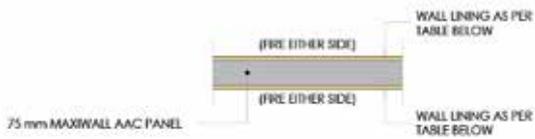
### Isometric Detail



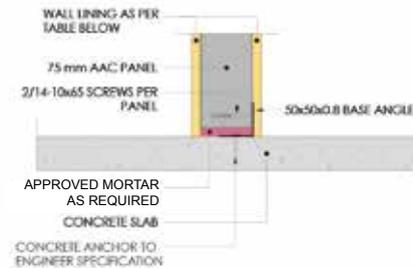
### Head Fixing



### Plan Section



### Base Fixing

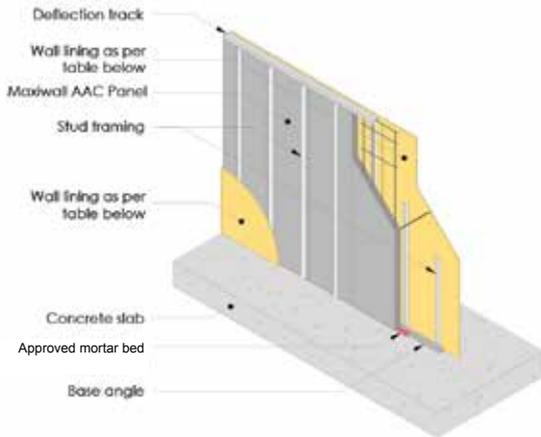


Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
H	Lining 1 75mm MaxiWall wall Lining 2	13mm standard plasterboard	13mm standard plasterboard-	101mm	-/120/120	36	34	No

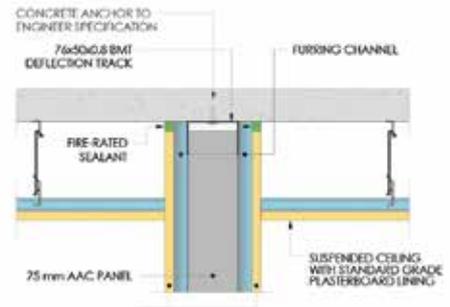
insulation Type 8: Polyester type ASB2, MSB2 or TSB2

**Type I - Where concealed services are required on both sides**

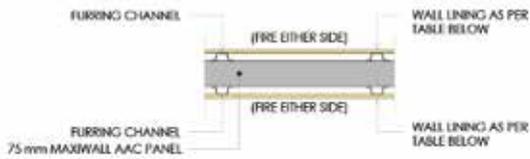
**Isometric Detail**



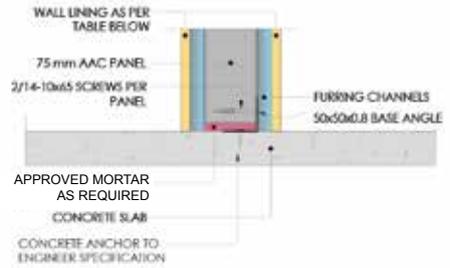
**Head Fixing**



**Plan Section**



**Base Fixing**

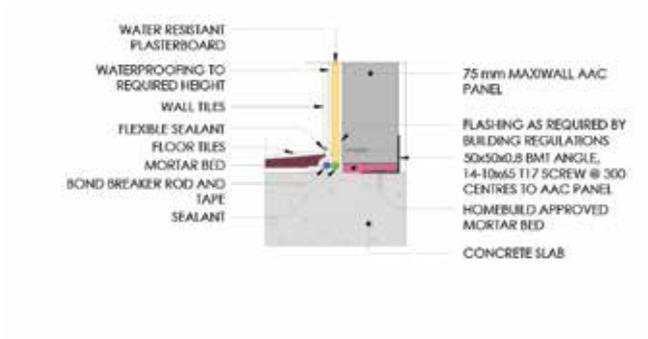


Wall Types	Description	Lining 1	Lining 2	Wall Thickness	FRL	Rw	Rw+ Ctr	DC**
I	Lining 1 Furring channel 75mm MaxiWall wall panel	16mm standard plasterboard with 28mm furring channel	13mm standard plasterboard	160mm minimum	-/120/120	41	31	No
	Furring channel Lining 2	13mm standard plasterboard with 50mm furring channel	13mm standard plasterboard	201mm minimum	-/120/120	41	31	

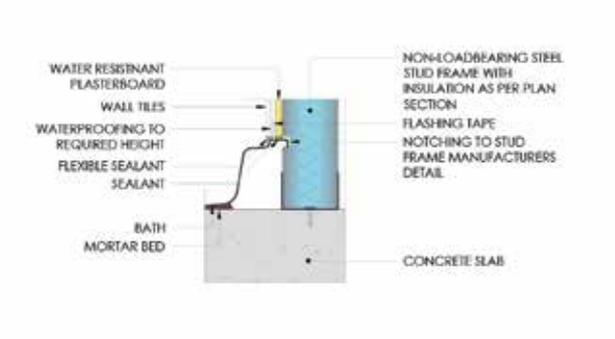
# 10.0 Construction Detail

## Wet Area Detail

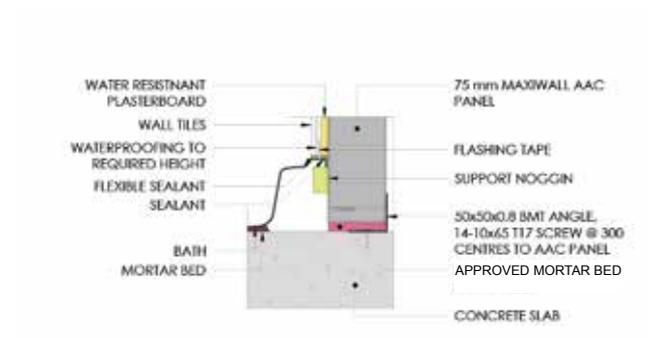
### Shower against AAC



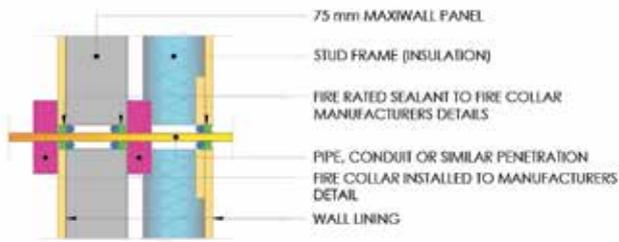
### Bath against stud frame



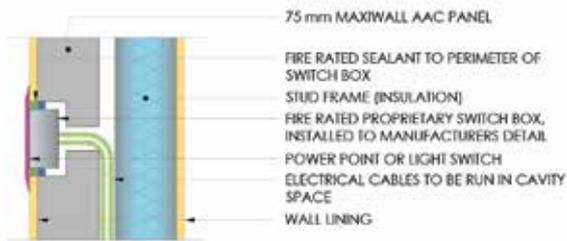
### Bath against AAC



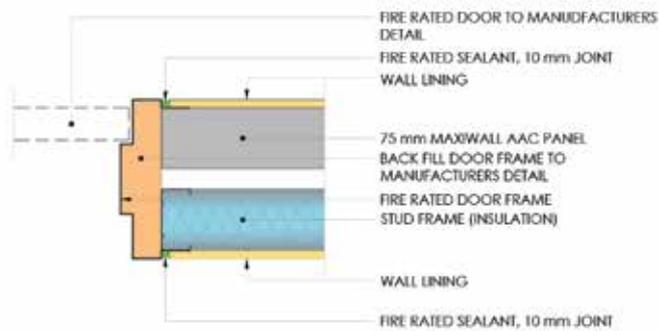
### Pipe/Conduit Penetration Detail



### Cable + Switch Box Detail



### Fire Door Detail



### Vertical Control Joint



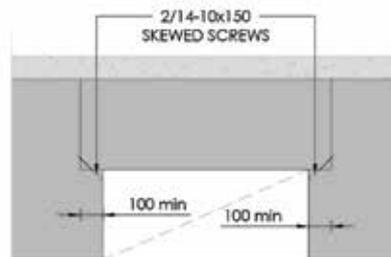
### Corner Fixed Joint



### Corner Control Joint



### Head Opening Detail



## 11.0 Product Declaration

### 1. Durability & Maintenance

Autoclaved aerated concrete has high porosity and relatively low alkalinity compared to traditional concrete. As a cement-based material, AAC resists water, rot, mold and mildew and can be precisely shaped and conform to tight tolerances when used in building construction.

MaxiWall wall panels are embedded with a steel mesh that is coated with corrosion resistant paint applied in a two-dip coat process. If panels are cut apply anti-corrosion paint on the exposed steel. In typical applications, the completed external wall system is protected from moisture ingress by moisture proof sealed joints and an external surface coating. Where there is significant and prolonged exposure to moisture, a waterproof tanking membrane must be applied to the panel surface.

Acid, certain salts and acidic gases can attack AAC and therefore special treatment and attention is required for applications subject to these conditions.

### 2. Fire Resistance

The NCC requires that walls separating sole occupancy units are to be fire rated in order to avoid the spread of fire to the degree necessary to enable evacuation. The requirements for a wall are stated as a fire resistance level (FRL) in minutes for three different characteristics: structural adequacy, integrity and insulation, example: 120/60/30. For non-load bearing walls the structural adequacy value is not required and therefore stated as dash, example: -/60/30. Designers must refer to Part C of the NCC Volume I for each individual project, as the requirements for conditions are likely to be different. The various internal non-load bearing walls have been assessed to achieve the FRL grading period represented in the tables on the installation detail pages.

The performance of the 75mm MaxiWall wall panel in a non-load bearing application has been tested in accordance to AS1530.4-2005 and the results prove that the tested wall achieved an FRL of -/120/120 in respect to the requirements of the NCC. It is pertinent that an experienced and qualified fire engineer be engaged to provide project specification and professional advice for individual projects. Penetrations or chasing through the fire rated walls are likely to cause the fire rating to become reduced. Any penetrations or chasing proposed for the project must therefore be carefully assessed and approved for compliance by the fire engineer.

### 3. Acoustic Performance

The NCC requires separating walls between sole-occupancy units of high-rise residential buildings to be insulated against airborne sound transmission as well as impact generated sound in certain cases. Refer to Part FP5.2 & F5.5 of the NCC Volume One. The requirements for airborne transmission states the following:

- / An  $R_w + C_{tr}$  of  $>50$  for wall separating sole-occupancy units; and
- /  $R_w$  of  $>50$  for wall separating a sole-occupancy unit from a plant

$R_w$  is the weighted sound reduction index and  $C_{tr}$  is the spectrum adaption term.

For impact-generated sound, the requirements state that the walls listed below must be of 'discontinuous construction'.

- Bathroom, sanitary compartment, laundry or kitchen in a sole occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or v' Sole-occupancy unit from a plant room or lift shaft

Discontinuous construction is defined as a wall having a minimum of 20mm cavity between two separate leaves and ensuring there is no mechanical linkage between the leaves except at the periphery. Designers should refer to Part F5 of the NCC Volume One for full details including variations to the above for Class 9c buildings.

The performance of the MaxiWall wall panel within numerous wall systems has been tested by CSIRO in accordance with AS/NS ISO 717.1-2004. The single leaf 75mm MaxiWall wall panel was tested to achieve an  $R_w (C:C_{tr})$  of 34 (-2;-3). PKA Acoustic Consulting has assessed the acoustic performances for the range of wall systems available from Big River. These evaluations are detailed in the tables on the installation pages. It is recommended that an acoustic consultant be engaged to provide acoustic specification and advice particularly with respect to the detailing of junctions for each individual project.

#### 4. Quality Assurance

Quality is important to our business. We strive to provide our customers with products and systems that meet and exceed their expectations. The MaxiWall wall panels are manufactured exclusively for Big River. The manufacturing operations and quality assurance of MaxiWall wall panels have been independently audited and certified to meet the requirements of the ISO 9001:2008 Quality Management Systems.

MaxiWall wall panels used in the internal wall systems for high-rise residential buildings are specifically developed to combine performance attributes for structural capacity, fire resistance and acoustic insulation. Subject to the conditions and exclusions set out under the MaxiWall Warranty Statement, Big River warrants that the MaxiWall wall panels sourced from its manufacturing partners are free from defects in materials and manufacture.

#### 5. Sustainability

Autoclaved aerated concrete offers sustainability in terms of material and performance. It uses approximately one-quarter of the concrete raw material and incorporates large quantity of air resulting in fewer raw materials used per square meter than many other building materials. It also has superior insulation properties compared to concrete and conventional masonry and is about one-fifth of the mass of concrete. The air-tightness in the system creates an energy efficient envelope and prevents unwanted air losses compared to conventional frame construction thus reducing energy use.

## 12.0 Wall Finishing

The finishing of the internal wall linings should follow the relevant manufacturer's specifications and standards. In order to achieve the desired performance outcomes for the MaxiWall internal wall systems, joints in linings must be set with the approved compound specified by the manufacturer. The perimeter of the linings should be sealed with fire-rated sealant to the concrete.

Walls in wet areas should be installed with waterproofing membranes and linings approved for wet area applications. Ensure that project specifications for detailing of wet areas are referred to. It is essential that the minimum specifications for domestic wet areas described in the AS3740-2010 Waterproofing be complied with. To maintain the integrity of waterproofing membranes adequate bond-breaker should be applied at internal junctions and corners.

MaxiWall wall panels are natural white to grey-white in colour. Slight variations may occur due to storage, raw materials and climate. Pores of different size at the surface are an inherent characteristic of autoclaved aerated concrete. The compounds and coatings must bond with the autoclaved aerated concrete to prevent moisture penetration yet allow breathability for moisture vapour.

## 13.0 Material Handling

### Panel Unloading

MaxiWall wall panels are shipped in packs of 10, stacked on the longitudinal edge. The packs are strapped to strengthened timber pallets and are wrapped in resilient plastic sheeting. Crane slings and forklifts may be used in accordance with standard industry practice. The Project Engineer is cautioned regarding the initial delivery of the panel packs that should be unloaded as close as possible to the installation area. Secondary handling of the panels increases the risk of damage, and installation of damaged panels may void the warranty.

### Storage & Protection

MaxiWall panel packs, when on construction site must be stored on a flat-grade level that is not prone to standing water, erosion or settling. It must be left on its edge to avoid sagging. The packs may be stacked up to 3 packs high on flat load-bearing stable platform so far as is reasonably practical and safe for workers and others. The packs should not be stacked if stored on un-level and natural ground.

MaxiWall wall panels should ideally be kept dry with attention paid to protecting panel ends, edges and surfaces. In adverse weather conditions the panels must be kept covered. Do not “shake-out” stored panels until they are ready to be installed. MaxiWall wall panels with a central single layer of reinforcement and length over 1800mm are at risk of cracking under their self-weight when carried or lifted from the horizontal or tilted from the vertical position. Adequate support must be provided when lifting. Panels must always be carried edge up. Lifting equipment must be used when necessary.

Most chipped corners and edges can be repaired with MaxiWall’s approved patching compounds, if reinforcing steel mesh is visible it must be protected using the approved touch-up paint. Panels that have surface or minor cracks are usable but if not sure contact an authorized Big River Group representative.

### Health & Safety

Material Safety Data Sheets (MSDS) are provided with all MaxiWall wall panels including major components associated with the system such as coatings, patching compound, thin-bed adhesive and reinforcement touchup paint. AAC building products contain Crystalline Silica (Quartz) that as dust is produced during cutting, grinding or drilling. It is categorized as a health hazard when inhaled. Approved dust masks and protective safety glasses or goggles must be worn for dust generating operations.

All AAC products are to be handled and worked on-site with the appropriate protective clothing. Protective gloves must be used for all construction operations. It is the responsibility of the builder/site supervisor to ensure that installation contractors adhere to safe work practices and suitable clothing.

## 14.0 Material Property

**Table 1. - MaxiWall Wall Panel Physical Properties & Tolerances**

No.	Description	Characteristics	Specifications
1	Dimensional tolerance	Length Width Thickness	$\cong \pm 3.0$ mm $\cong \pm 1.5$ mm $\cong \pm 2.0$ mm
2	Physical	Dry density Working Density	$\cong 510$ kg $\cong 675$ kg
3	Strength	Compressive strength Modulus of rupture	$\cong 3.50$ Mpa $\cong 0.75$ Mpa
4	Acoustic	Weighted sound reduction	34 dB
5	Thermal	Thermal resistance value (R-value)	0.6
6	Steel mesh	Position from center of panel	$\pm 3.0$ mm

**Table 2. - MaxiWall Wall Panel Weight Informationw**

Length (mm)	Panel weight (kg)	10 panels on pallet weight (kg)
1200	36	397
1800	54	595
2200	66	728
2400	72	794
2550	77	845
2700	81	900
2850	86	943
3000	90	992
Thickness 75mm, Width 600mm		

## 15.0 Standard & Compliance

### Appendix A

No.	Standard Compliance	Description
1.	NCC Volume One: Part BP1.1 (a). (b)i,ii, iii	For non-load bearing internal walls. Installation must be performed as per this technical manual.
2.	NCC Volume One: Part CPI, CP2&CP4	For non-load bearing internal walls. Maximum FRL (-/120/120) applies to systems where junction detailing has been approved by a fire engineer.
3.	NCC Volume One: Part FP5.2, FP5.3, FP5.5 & FP5.6	For non-load bearing internal walls, including NT state and territory variation.
4.	NCC Volume One: Part 2.1.1 (a), (b) i, ii, iii	For non-load bearing internal walls. Installation must be performed as per this technical manual.
5.	NCC Volume One 2014: Part P2.4.6	For intertenancy walls, including NT state and territory variation.
6.	AS/NZS 1170.0	Structural design actions - Part 0: General principles
7.	AS/NZS 1170.1	Structural design actions - Part 1: Permanent, imposed and other actions.
8.	AS/NZS 1170.2	Structural design actions - Part 0: Wind actions
9.	AS 1530.4	Methods for fire tests on building materials, components and structures - Part 4: Fire resistance test of elements of construction
10.	AS/NZS 4600	Cold-formed steel structures
11	AS/NZS ISO 717.1	Acoustics - Rating of sound insulation in buildings and of building elements -Part 1: Airborne sound insulation
12	ABCB Handbook	Sound Insulation
13	NCC 2013/1	National construction code, Volume One Class 2 to Class 9 Buildings, Australian Building Codes Board, 2013
14	PKA-A145, A146, A102	Acoustic performance assessment of a products or system (PKA Acoustic Consulting)
15	0232B-R1A	Structural design report Ultimate strength capacities of the Big River AAC panel external wall systems (Building Products Certification Pty Ltd)
16	IGNIS-2014-260-CoC-V01	Certificate of conformity complies with requirements of the national construction code 2014-Volume 2- Building code of Australia in relation to Housing Provision 3.7.1.3 External wall of class 1. 60/60/60 (Ignis Solutions Pty Ltd)
17	Report i443a	Total R" Thermal performance calculation to AS/NZS 4859.1:2001/Amdt 1 Dec 2006 (James M Fricker Pty Ltd)
18.	2015-324	Fire safety evaluation Report (Ignis Solutions Pty Ltd)

## 16.0 Responsibility & Warranty



### Responsibility

The final specification and certification of the external wall system using MaxiWall 75mm AAC wall panels lie solely with qualified design and building construction professionals responsible for the project. These professionals would generally comprise of structural engineers, fire engineers and acoustic engineers. The design consideration, fixing specifications and installation details in this manual represent common types of construction and detailing practice used in Australia. A competent professional must approve any variations or alternatives to the technical information described in this manual.

### Disclaimer

The information contained in this technical manual is only advisory and general in nature. It is not intended to substitute advice or consultation from registered building construction professionals to ensure designs, systems and installation for projects conform to the National Construction Code and Building Codes of Australia including any other laws imposed by the States or local councils. The user of this manual understand and agree that MaxiWall, its member companies, its officers, agents and employees shall not be liable in any manner under any theory of liability for the user's reliance on this manual. The user agrees to release, hold harmless and indemnify MaxiWall, its member companies, successors, assigns, officers, agents and employees from any and all claims of liability, costs, fees (including lawyer's fees), or damages arising in any way out of the use of this information.



## PRODUCT WARRANTY

### MaxiWall 75mm Autoclaved Aerated Concrete Panels

<b>Provided by:</b>	Big River Group Pty Ltd Trenayr Road, Junction Hill NSW 2460 <b>02 6644 0907</b>
<b>Product type:</b>	MaxiWall 75mm autoclaved aerated concrete panels.
<b>Warranty statement:</b>	Big River warrants that its MaxiWall 75mm autoclaved aerated concrete (AAC) building panels are free from defects in materials and manufacture subject to the conditions and exclusions set out in the Product Warranty.
<b>Warranty cover:</b>	This Warranty covers the above product type that has defects in materials or workmanship due solely to improper manufacture. Defects include but not limited to structural defects, dimensional discrepancies beyond acceptable tolerances and failure to meet product quality standards and specifications as set forth in our approved Technical Manuals.
<b>Warranty conditions:</b>	This Warranty shall only apply where the relevant building system constructed complies with Big River approved Technical Manuals for High- Rise Residential Internal Wall System and External Wall Panels for Low-Rise Residential Buildings. Ensure registered professionals, such as licensed builders, architects and engineers are consulted to determine that the design, system and installation are suitable for the project and conforms to the Building Code of Australia.
<b>Warranty period:</b>	Subject to the conditions and exclusions, set out under this Warranty, Big River warrants that its MaxiWall AAC 75mm panels are sourced from reputable manufacturers or suppliers and are covered by their respective guarantees or warranties and any warranties imposed by the Australian Consumer Law. The term of warranty is 7 years from the date of purchase.



## PRODUCT WARRANTY

<b>Warranty exclusion:</b>	This Warranty shall not cover any defect arising from non-compliance of structural design in accordance to the Building Code of Australia, faulty installation, environmental conditions that are beyond Big River control, modifications, alterations, failure to comply with the conditions of cover, force majeure or any other cause or damage not resulting from defects in materials or workmanship due solely to improper manufacture.
<b>Warranty settlement:</b>	Subject to the legal rights of a consumer under law, if any of the MaxiWall AAC 75mm panels are so defective, Big River will, subject to verification and inspection of such defects by a MaxiWall representative and at its sole option: either replace the products or supply equivalent products, repair the defective products or reimburse for the replacement and repair of the products. Big River will not be liable for any punitive, indirect, special, incidental or consequential damages other than what is stated in the Product Warranty.
<b>Associated materials warranty:</b>	This Warranty does not cover any materials, components or system associated with or supplied by third parties. Please refer to your supplier's warranty terms and conditions.
<b>Warranty Claims:</b>	Homeowners should contact their Builders. Builders wishing to make a claim under this Warranty should contact an authorised Big River distributor or representative. Otherwise please contact Big River directly on 1300 881 958. Claims for warranty must be presented in writing to Big River and will require proof of purchase itemizing the panel sizes, and batch numbers, name of project and nature of defects along with the proof when the panels were installed.

*Except as provided herein, Big River makes no express or implied warranties. This Warranty is exclusive of all other warranties and shall not be extended, altered or varied except by a written instrument signed by an authorised representative of Big River.*

## Contact Us

For all sales and technical enquiries please contact the experts at Big River:

**Phone:** 1300 881 958

**Email:** [info@bigrivergroup.com.au](mailto:info@bigrivergroup.com.au)

For all technical enquiries please contact:

**Phone TECHSERV:** 02 9630 5288

For your nearest Big River branch or to download information:

**Visit:** [www.bigrivergroup.com.au](http://www.bigrivergroup.com.au)

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Big River Group Pty Ltd  
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