

zerobound

fire rated boundary wall systems



INSTALLATION GUIDE VERSION 4.3



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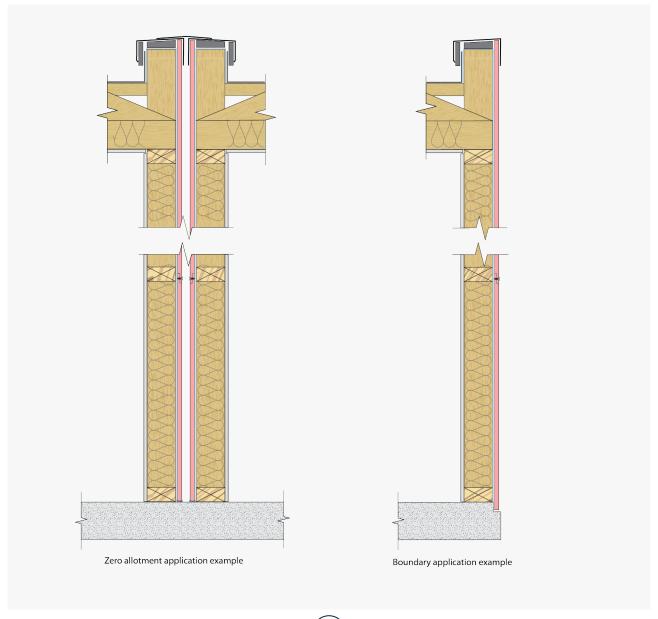
INTRODUCTION

Zerobound fire rated boundary wall system has been designed to offer a solution to zero allotment boundary walls between neighbouring walls or where a fire rated wall is required.

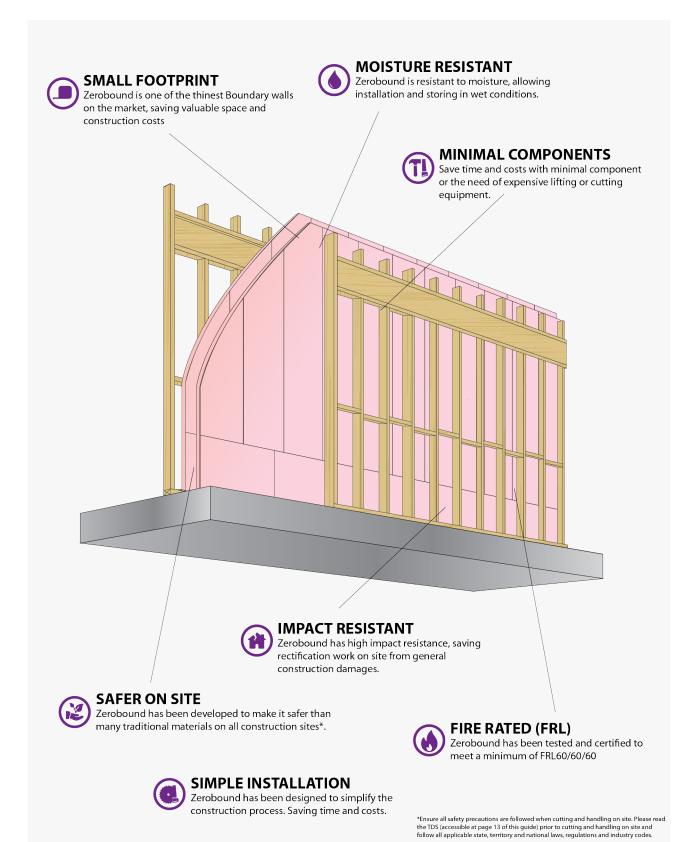
Zerobound allows the flexibility of independent construction of adjacent dwellings, offering a time and cost solution for multi residential developments, while offering high performance fire protection.

Advantages

- · Simple construction process with minimal components
- · Minimal wall footprint (min. approx. wall width: 94mm based on 70mm studs)
- · Flexible construction with individual unit builds, saving valuable time and costs
- No access to adjoining properties to build or place walls
- FRL60/60/60 with the 14mm panel, and FRL90/90/90 with the 22mm panel



BENEFITS



DESIGN CONSIDERATIONS

General Design

IMPORTANT: Specific projects will require the use of particular construction techniques and products. It is the responsibility of the building designer, specifier and other relevant user(s) to determine that any product purchased by them from CBMA, including the chosen system, is suitable for all intended uses and the specific requirements of the relevant project. The user must ensure that its use of any products purchased from CBMA complies with the appropriate rules and regulations of the NCC and all other applicable laws and regulations. This installation guide does not cover all aspects of construction on a project and is produced by CBMA as a guide only. It is the responsibility of the building designer, builder, engineer and other relevant user(s) to confirm that all further details, or design considerations (whether or not referred to in this installation guide) are specified and approved by the relevant professionals and/or authorities prior to commencing construction.

Fire Resistance

Zerobound zero allotment boundary wall system has been tested and/or assessed in accordance with AS1530.1 and AS1530.4 by accredited NATA approved laboratories.

Fire performance requirement for external walls of buildings that is satisfied by the Zerobound external wall cladding system that has a FRL of not less than 60/60/60 when using the 14mm panel and 90/90/90 when using the 22mm panel for structural adequacy, integrity and insulation. A (Fire Resistance Level) FRL 60/60/60 (14mm panel) and 90/90/90 (22mm panel) included performance measures for Structural Adequacy, integrity and insulation is proven by full-scale testing to Australian Standard AS1530.4. All fire rating are based on the product being installed strictly as per the Zerobound install guide.

Termite and Moisture Management / Builders Wrap

Zerobound panels are termite resistant and moisture resistant, however it is still the responsibility of the designer and builder to ensure that all termite and damp resistance requirements are implemented as per any NCC requirements and meet the requirements of AS/NZS4200.1.

The wrap/sarking does not have any effect on the fire rating of the Zerobound system, however when installed due to condensation management requirements of the designed building, it is a requirement that any wall wrap/sarking meets NCC Clause C2D10 (6)(f), that does not exceed 1mm in thickness and have a flammability index not greater than 5. All builders wrap/sarking must be installed as per AS/NZS4200.2. Sarking requirements are to be determined by the building designer. Correct installation of the wall wrap is important to assist with any required condensation management of the building.

Structural and Framing Requirements

Zerobound can be installed onto timber or steel framing in accordance with AS1684 - 'Residential timberframed construction', AS/NZS4600 - 'Cold formed steel structures', the NCC, and all relevant standards and manufactured specifications. The external wall is to be designed and constructed in accordance with all NCC regulations with minimum stud dimensions of 70mm (depth) for Timber, and 90mm (depth) for steel x 35mm (width) with maximum of 450mm stud spacings. Light-gauge steel framing shall be minimum 0.8mm BMT. Load bearing walls will be designed to meet all relevant standards and regulations for applied loads and wind pressures for AS4055 Wind Classifications N1, N2 or N3.

It is important the frames are square and true, prior to installing Zerobound. A recommended flush frame tolerance of up to 4mm over a 3000mm length will offer maximum results in construction and performance. STEEL FRAMES must have a thermal break with a minimum value of R0.2m2 K/W installed over top of the approved wall wrap on every stud prior to Zerobound panels being installed. Thermal breaks are to be timber or non-combustible thermal break such as fibre cement batten.

Weather Resistance

All framing, flashings, damp proof, building wrap to be installed as per manufacturers instructions and meet all applicable standards and building codes. Zerobound has been tested to the requirements of AS/ NZS 4284:2008 and Verification Method F3V1 & H2V1.

Zerobound system as been assessed to meet AS4055 wind classifications N1, N2 & N3. Zerobound has not been tested for cyclonic conditions.

Any exposed walls must use approved external fire rated sealant to seal gaps (excluding shiplap joints) prior to coatings.

Boundary/Cavity clearanceIt is the responsibility of the builder/designer to ensure that the building is designed to meet all NCC and local regulations regarding boundary clearances and fire requirements. CBMA recommends a minimum cavity of 20mm between boundary walls when enclosed/capped, this equals 10mm each side of the surveyed boundary line. Once again, this is the responsibility of the builder/designer to confirm the requirements for their particular project and building.

DESIGN CONSIDERATIONS

Coastal Areas

Zerobound is supplied with stainless steel fixings as standard. However when used in areas within 1km of a coastal areas or subject to high salt spray or in a corrosivity zone as per AS4312, additional coatings or protection may be required. Zerobound is not suitable for C5 zones. A minimum of Stainless steel fixings are to be used.

Coatings and boundary walls

Zerobound panels are manufactured with moisture shield technology built into the panels. The Zerobound panels have been tested uncoated by a Nata accredited laboratory based on verification methods F3V1 and H2V1 to pressures of 300 Pa static and 490-980Pa cyclic pressure with no leakage. The moisture shield technology offers moisture resistance when used in a zero allotment application and is not visible or fully exposed to the elements. Where the wall is used in a zero allotment and is not visible or fully exposed to the elements, notification markings must be visible on the wall and/or in the meter box prior to enclosing. Zerobound is designed as a zero allotment wall, however where Zerobound is exposed to the elements, the wall must be coated with an approved coating/cladding within 6 months of being installed, or immediately if exposed after 6 months, with a system approved by the coating manufacturer. This may be paint, texture, render or additional non combustible cladding, depending on your finish requirements. All coatings must be installed as per the coating manufacturers instructions.

It is the responsibility of the relevant builder and other end user(s) to determine the appropriate coatings for the specific project (including but not limited to whether to use a shared flashing to enclose the wall or to coat the panel) and to ensure that the chosen method complies with all relevant laws, regulations, codes and industry standards.

Generally render systems require a mesh system and should be applied to the rough side of the panels, and is recommended to install the panels in a horizontal layout, as well as correct application of an acceptable primer to offer maximum adhesion - this must be confirmed with the approved coating manufacturer and applied as per their recommendations. It is important that a membrane/sealer as recommended by the render manufacturer is used to ensure no moisture ingress can cause failure to the render system.

Zerobound can also have non-combustible cladding applied over the top (Diagram 39) to offer an aesthetically pleasing and high quality finish on prominent walls, while still offering a FRL rating. It is important to ensure that all fixings for the cladding/battens are fixed through the Zerobound panels and into the frames. Zerobound panels are not to be used as a structural fixing point.

CBMA recommends screw fixings over nails to offer a better finish for the exposed wall prior to coating. Any expansion/movement joints should be installed as required and is the responsibility of the building designer to determine and detail any locations to coincide with the building movement joints/requirements or at a recommended 5.4m and floor levels.

If the wall is exposed in the future, the wall must be immediately coated as per the above requirements.

National Construction Code (NCC)

Zerobound has been tested and appraised to the following performance requirements and deemed to satisfy provisions of the NCC Volume 2 and is applicable to AS4055 wind classifications N1, N2 & N3. Fire performance requirement for external walls of buildings that is satisfied by the Zerobound external wall cladding system that has a FRL of not less than 60/60/60 for structural adequacy, integrity and insulation. A (Fire Resistance Level) FRL 60/60/60 included performance measures for Structural Adequacy, integrity and insulation is proven by full-scale testing to Australian Standard AS1530.4.

Weatherproofing Performance Requirements as an external wall is achieved by detailing to prevent the penetration of water has been verified by prototype testing by an accredited testing laboratory in accordance with the requirements of AS/NZS4284 and Verification Method F3V1 and H2V1.

Total R-value of external wall requirements, where the thermal performance:

14mm/22mm panels timber frame with R2.5 batts is RT(summer) 2.2 m²K/W & RT(Winter) 2.3 m²K/W 14mm/22mm panels timber frame with R2.7 batts is RT(summer) 2.4 m²K/W & RT(Winter) 2.4 m²K/W 14mm/22mm panels steel frame with R2.5 batts is RT(summer) 1.8 m²K/W & RT(Winter) 1.9 m²K/W 14mm/22mm panels steel frame with R2.7 batts is RT(summer) 1.9 m²K/W & RT(Winter) 1.9 m²K/W

In accordance with AS/NZS 4859.1:2018 incorporating the effects of thermal bridging.

CBMA Zerobound is rated at a minimum of RW=43dB (14mm panel) as per assessments by Cogent Acoustics.

Certifications

All CBMA testing and assessments have been performed by accredited NATA Laboratories, including Warrington Fire, CSIRO and others. However, all installs must be inspected by a building surveyor or another licensed professional to ensure that the product has been installed correctly and the construction meets all relevant building regulations.

It is the responsibility of the builder and other relevant user(s) to ensure that the construction has met all building regulations and that Zerobound has been installed as per the installation guide and/or any other laws, regulations, industry standards or requirements.

COMPONENTS

The Zerobound system has been designed to simplify the construction process with minimal components and trades required to complete the install of the system.

Zerobound panels utilise CBMA's innovative shiplap system which assists in a simple installation process. Additionally, offering a FRL (Fire Resistance Level) with all Zerobound systems when installed in conjunction with the Installation guide.



Zerobound Panel

Code	Size (coverage)	m ² per sheet	Weight per m ²
ZB270614SL	2700(w) x 600 (h) x 14mm (d)	1.62m2	17.3kg
ZB270622SL	2700(w) x 600 (h) x 22mm (d)	1.62m ²	26.5kg



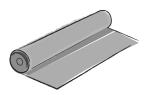
Fire Rated Sealant

Code	Description	Size	
Firesealant600	Fire rated sealant 600ml	600ml	



Screws + Brackets

Code	Size	
8Gx20CL3	8G x 20mm SS Screw - Loose	
8Gx40CL3	8G x 40mm SS Screw - Loose	
	8G x 16mm SS stitching screw	Supplied by others
	2.5 x 50mm SS Coil Ring Nails	Purchased separately
FZBracket	Aluminium Firezone Bracket	Purchased separately
	Steel Angle Bracket	Supplied by others



Builders Wrap

Code	Size		
NCwrap405	Builders Wrap - 1350x30m (40.5m2)		Purchased separately

Zerobound system may require further products to complete the install of the Zerobound system. These items are to be sourced by the builder (and are not included in any quoted prices provided by CBMA).

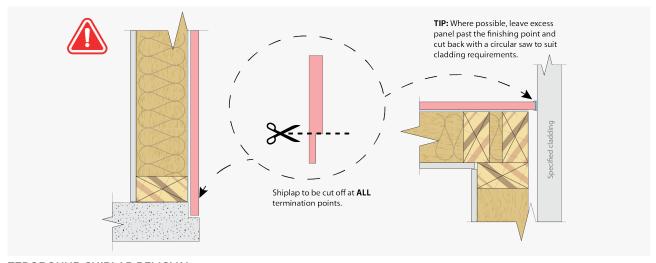
Additional items may include but are not limited to:

- Flashings
- Insulation
- · Plasterboard lining
- · Cladding materials
- · Fire rated mineral wool



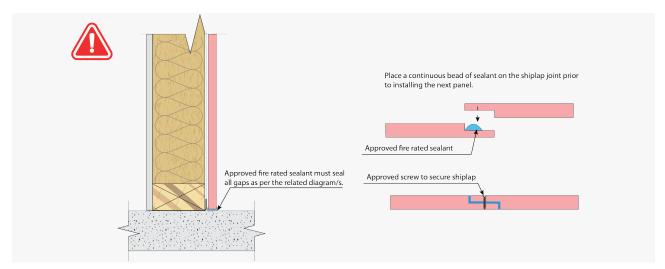
Panel Shiplap Removal Requirements and Sealant

All sheets starting or terminating from floor, roof or wall junctions **MUST** have the shiplap removed to ensure full width of sheet is in contact with the ground, roof and/or cladding to ensure full fire ratings are met. All shiplap joints and gaps must be filled with the approved fire rated sealant - Gaps should not exceed 5mm unless stated otherwise in this guide. Failure to remove the shiplap at termination points or not include the fire rated sealant will affect the final fire rating.



ZEROBOUND SHIPLAP REMOVAL

FIG



ZEROBOUND SEALANT EXAMPLE

FIG 2

Linings and insulation

All linings must be a minimum of 5.4kg/m2 density and insulation a minimum of R2.5 to meet the R-values as specified in this guide (page 7). Alternative linings or insulation maybe used if different acoustic rating or R values are required outside of the numbers stated in this guide. All linings and insulations must be installed as per the relevant manufacturers installation requirements.



Screw Layout

To ensure Zerobound system works to its maximum performance requirements, fixing placement must be followed as outlined in Diagram 2.

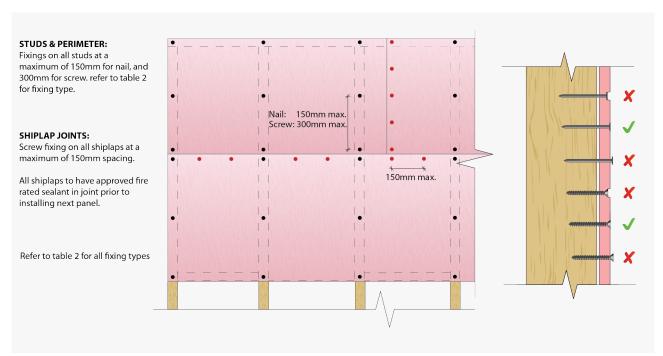
All fixings supplied by CBMA are stainless steel. Zerobound is not suitable for C5 zones.

Fixings should be no less than 12.5mm from any edge and 25mm from any corner. Screw fixing from shiplap should be approx. 15mm from the shiplap edge. Nail guns should be set up to offer a flush finish.

FRL RATING		SUPPLIED	Timber		Steel		Shiplap Joint	
			Fixing	Maximum spacing	Fixing	Maximum spacing	Fixing	Maximum spacing
60/60/60 (14mm)	2.5 x 50mm Coil Ring Nails	purchased separately	✓	150mm				
60/60/60 (14mm)	8G x 40mm CSK Timber Screw		✓	300mm				
60/60/60 (14mm)	10G x 30mm Wingtip CSK Screw	purchased separately			✓	300mm		
60/60/60 (14mm)	8G x 16mm Stitching Screw	supplied by others					✓	150mm
60/60/60 (14mm)	8G x 20mm CSK Screw						✓	150mm
	7					I		
90/90/90 (22mm)	2.7 x 60mm Coil Ring Nails	supplied by others	✓	150mm				
90/90/90 (22mm)	8G x 50mm CSK Timber Screw		✓	300mm				
90/90/90 (22mm)	10G x 40mm Wingtip Screw	purchased separately			✓	300mm		
90/90/90 (22mm)	8G x 25mm CSK Screw						✓	150mm

ZEROBOUND FIXING TABLE

TABLE 2



ZEROBOUND SCREW LAYOUT EXAMPLE

INSTALLATION CONSIDERATIONS

Zerobound Layout

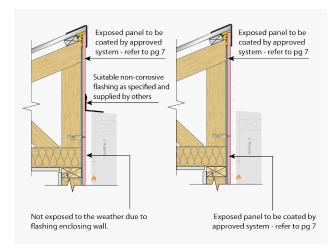
Zerobound panels can be installed in the standard horizontal orientation to minimise wastage and time, but can also be installed in other orientations allowing more options depending on build type.

TYPICAL LAYOU

ZEROBOUND PANEL LAYOUT EXAMPLES

Zerobound Coating

The builder/designer will need to determine if the wall requires coatings as per page 7. The following diagram is an example of when coatings are required.

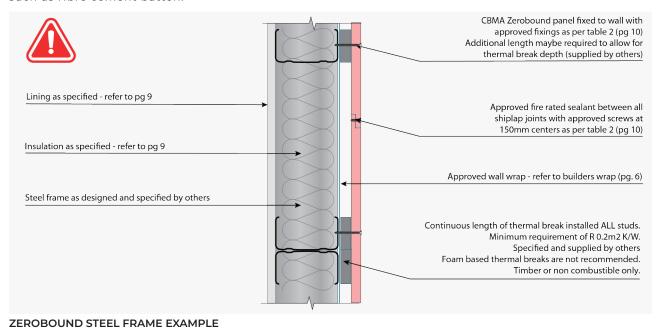


ZEROBOUND COATING EXAMPLE

Steel Frame / Battens

Zerobound can be utilised with steel frame (0.8BMT) and continue to reach a minimum FRL as specified in table one in this install guide.

As per the National Construction Code (NCC) Volumes 1 & 2, both residential and commercial buildings must have a thermal break of R0.2m2 K/W installed between the external cladding and metal frame, due to the higher thermal conductance of metal framed walls. This is also a requirement for the Zerobound system. The thermal break must be either timber or non-combustible and corrosion resistant material such as fibre cement batten.



INSTALLATION CONSIDERATIONS

Modular

If installing Zerobound in a Zero boundary configuration and modular construction is required, It is important that safe handling of the Zerobound system is considered. Lifting and erection of walls and modules need to consider the weight and lifting requirements. Below is an approximate weight** of modules, to assist in a safe handling plan.

Hairba - CWall	Length of Wall						
Height of Wall	2400mm	3000mm	3600mm	6000mm			
2400mm	155kg	190kg	225kg	360kg			
2700mm	175kg	215kg	260kg	405kg			
3000mm	190kg	240kg	285kg	450kg			
3600mm	230kg	290kg	345kg	535kg			

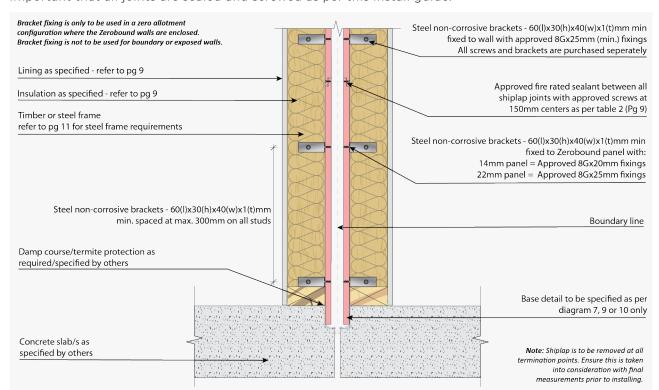
ZEROBOUND APPROXIMATE MODULAR WEIGHTS

TABLE:

**Weights are based on 14mm Zerobound panels and 90x45 pine studs. This chart is to be used as an indication only and may not reflect a final built wall module. Other factors that may affect the weight include, but are not necessarily limited to, wall design, Zerobound panel thickness, moisture levels in materials, additional fixings and lifting equipment. It is the responsibility of the builder, installer and other relevant user(s) to confirm the final actual weight. The user accepts all responsibility for determining the actual weights and lifting of any modules.

Bracket Fixing

Where the frames of the wall are built in situ, the walls are in a zero allotment configuration, and access to install screws are not available, Zerobound can be installed by sliding panels into the cavity and using the recommended steel brackets to fix back to the frame. You may also fix the shiplap joints on the Zerobound panels from the inside. This option is to only be used when both walls are Zerobound and in a zero allotment option and not exposed to the weather. Both or either wall can be bracket fixed. It is important that all joints are sealed and screwed as per this install guide.



ZEROBOUND BRACKET FIXING EXAMPLE



Handling and Cutting:

Zerobound panels are developed to avoid many hazardous materials without compromising performance. Safety precautions should always be taken and followed when handling and cutting panels.

Carrying and handling:

Due to the fibreglass partials in the panels, long sleeve shirts and gloves should be worn when carrying the panels to avoid any irritation.

Cutting:

Zerobound panels can be cut with a standard tungsten tip saw blade. Cutting should not be done in enclosed areas and an appropriate dust control/collection system should be used as per all worksafe recommendations, site requirements and all other Health & safety standards. CBMA recommend wearing appropriate Personal Protection Equipment (PPE) such as hearing protection, eye protection, dust mask, and gloves.

Storage:

Zerobound panels should be flat and off the ground and protected from the weather. Extra care should be taken to not damage any shiplap edges.

Technical Data Sheet

The technical data sheet (TDS) and information on the Zerobound panels including safe disposal and handling can be downloaded directly from the CBMA website:

CBMA recommends downloading the latest install guide directly from the CBMA website:



www.cbma.com.au



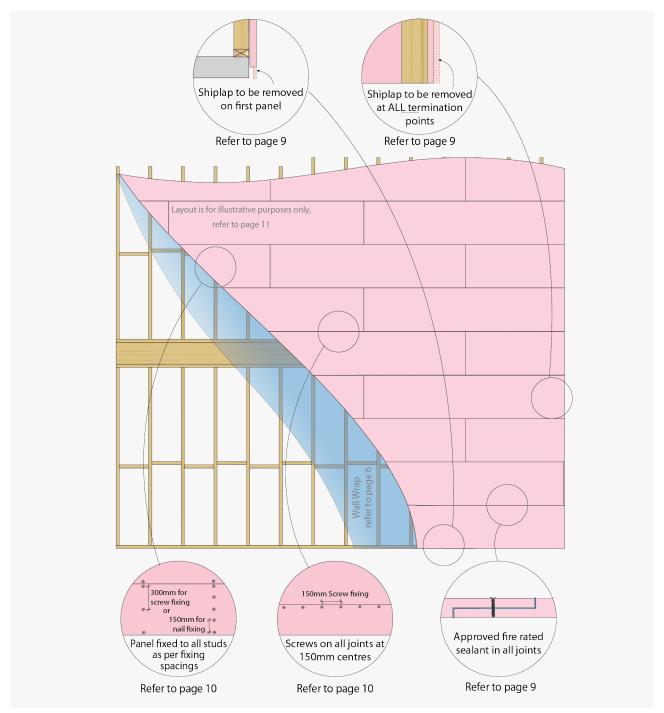
Zerobound Install Guide

Warranty.

Compliant Building Materials Australia Pty Ltd (CBMA) warrants the Zerobound panel to remain free of defects in material and manufacture for 7 years when installed as per this install guide. For further details on our product warranty please contact CBMA.

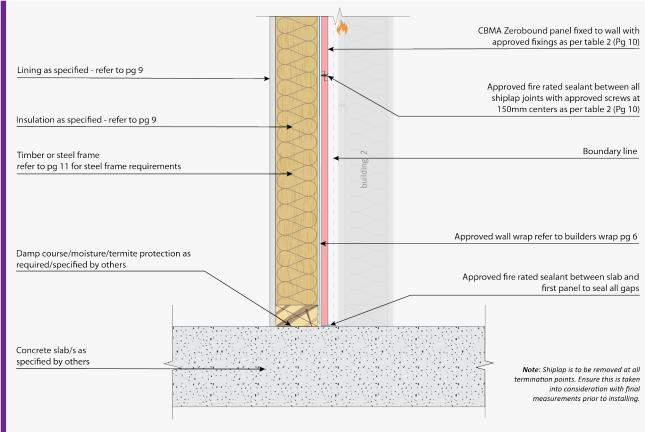
OVERVIEW EXAMPLE

The following example is for illustrative purposes and is to offer a quick reference guide to key points to installing the Zerobound wall. However this diagram does not cover all aspects of the install. The Zerobound guide must be read in full to ensure full compliance of the installation.

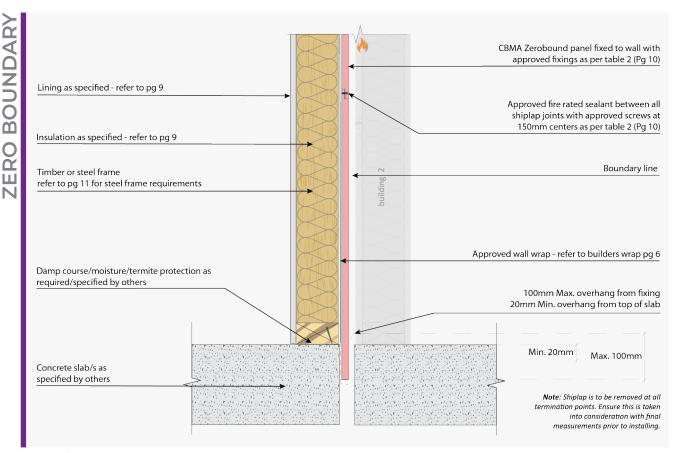


LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS NOT TO SCALE. THIS EXAMPLE DOES NOT REPRESENT YOUR LAYOUT, BUILD OR ALL INSTALLATION REQUIREMENTS. THIS DIAGRAM IS NOT A REPLACEMENT FOR THE INSTALL GUIDE. INSTALL GUIDE MUST BE READ AND FOLLOWED IN FULL.

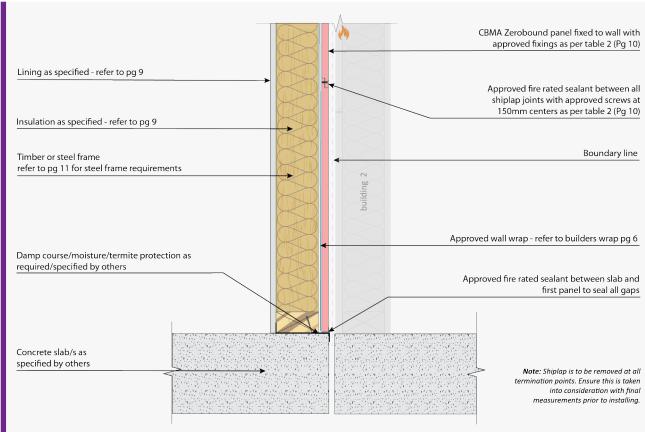
Technical Drawings



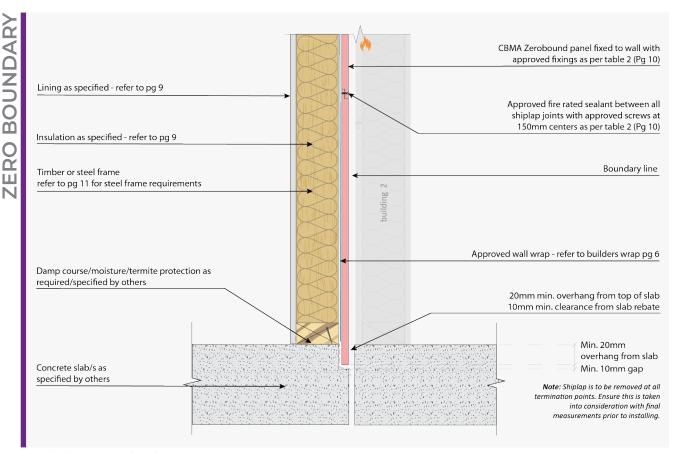
ZEROBOUND TYPICAL SOLID SLAB DETAIL



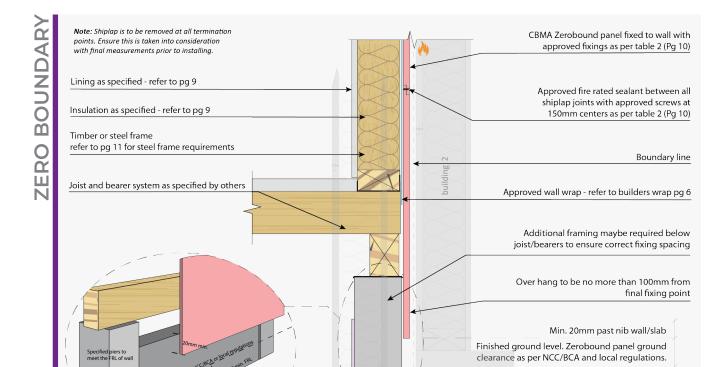
ZEROBOUND TYPICAL BOX SLAB DETAIL



ZEROBOUND TYPICAL SETBACK SLAB DETAIL



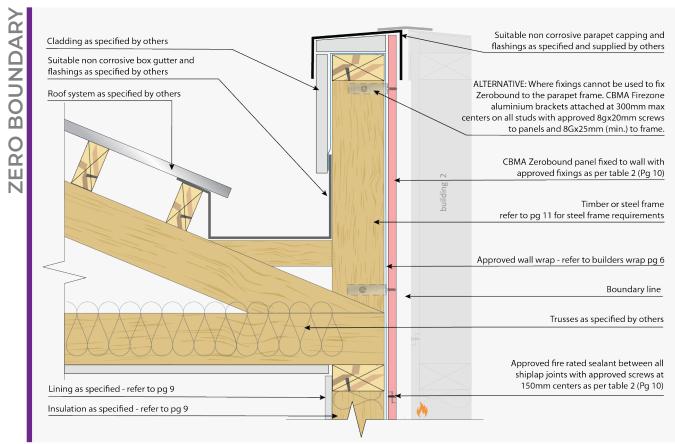
ZEROBOUND TYPICAL SLAB REBATE DETAIL



Continuous concrete / masonry foundation as specified by others, to meet the FRL of the wall.

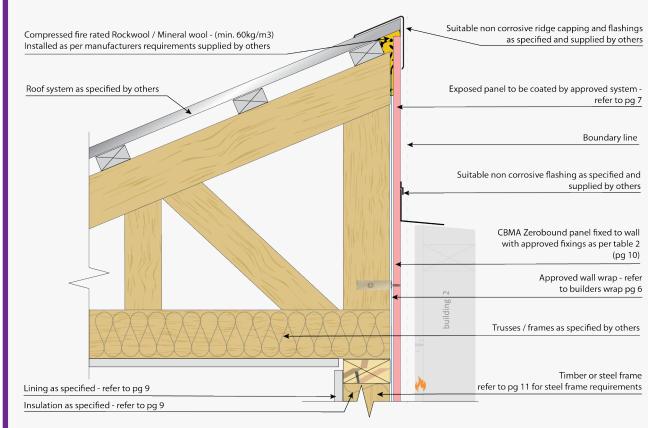
ZEROBOUND TYPICAL SUB FLOOR DETAIL

DIAGRAM 11

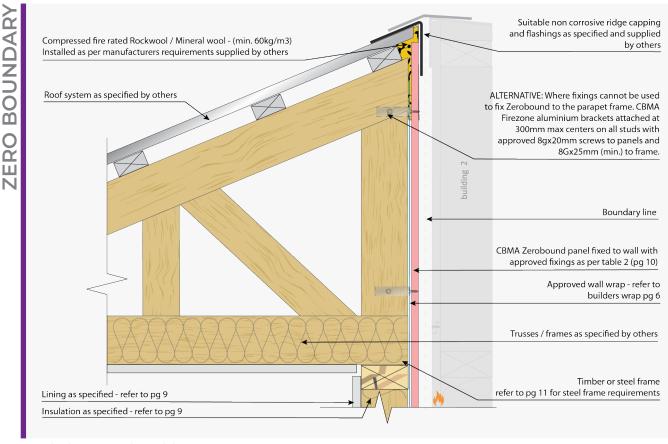


ZEROBOUND TYPICAL PARAPET DETAIL



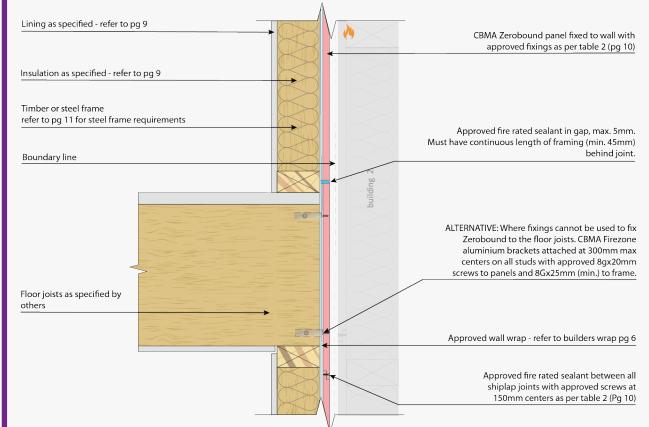


ZEROBOUND TYPICAL EXPOSED WALL/ROOF DETAIL



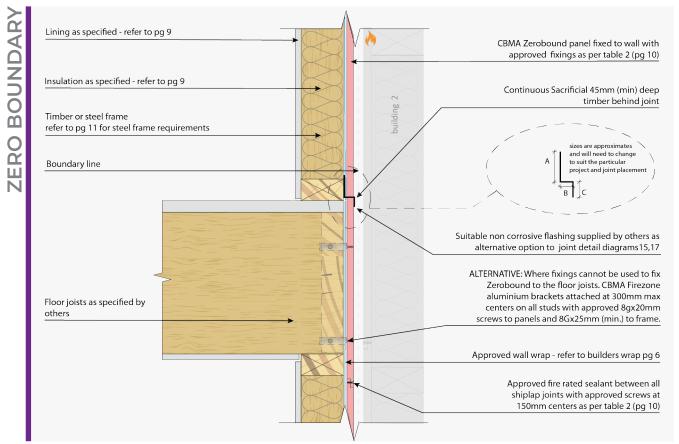
ZEROBOUND TYPICAL ROOF DETAIL



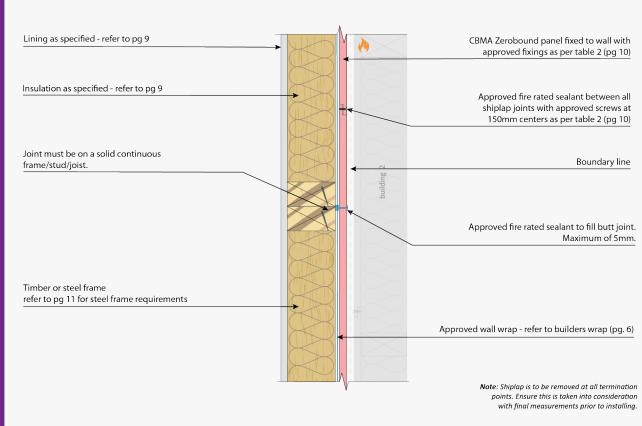


ZEROBOUND TYPICAL FLOOR LEVEL DETAIL

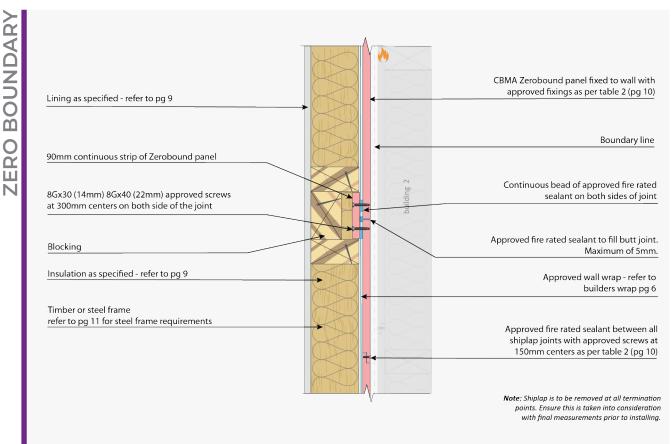
DIAGRAM 15



ZEROBOUND TYPICAL ALTERNATIVE FLOOR LEVEL DETAIL

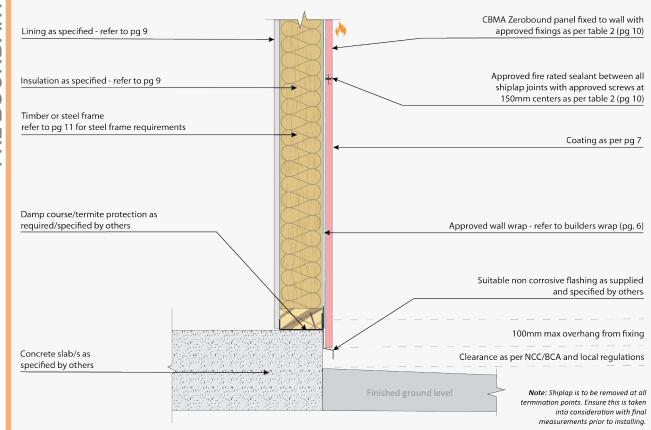


ZEROBOUND TYPICAL BUTT / EXPANSION JOINT DETAIL

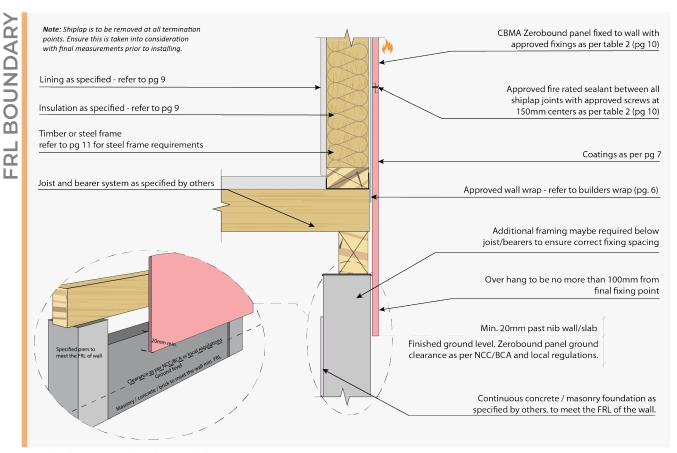


ZEROBOUND TYPICAL ALTERNATIVE BUTT/EXPANSION JOINT DETAIL



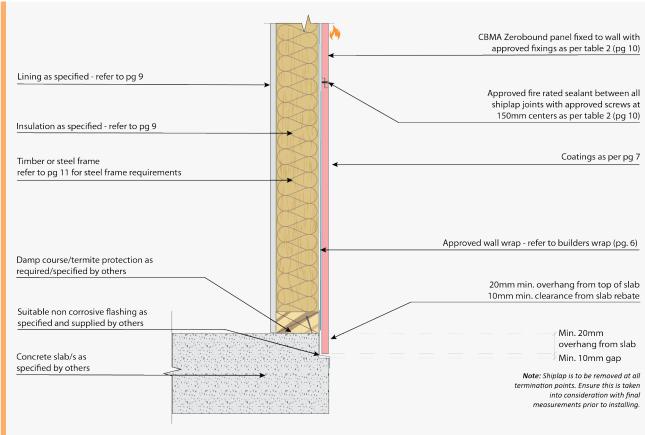


ZEROBOUND TYPICAL CLADDING GROUND CLEARANCE DETAIL

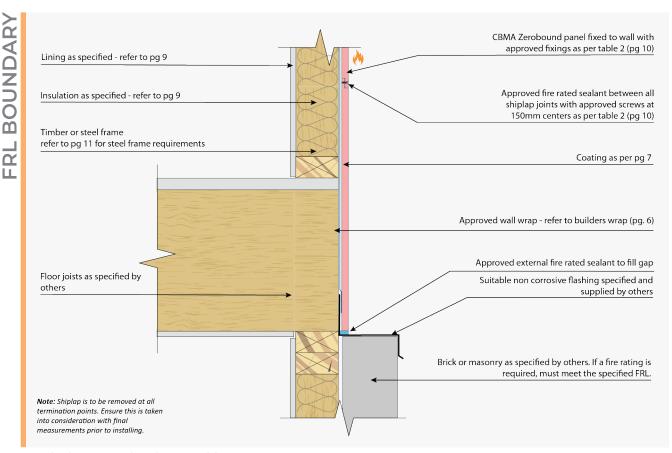


ZEROBOUND TYPICAL SUB FLOOR DETAIL

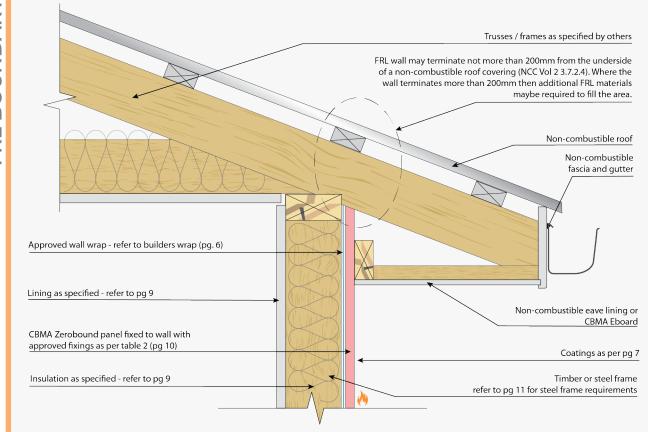




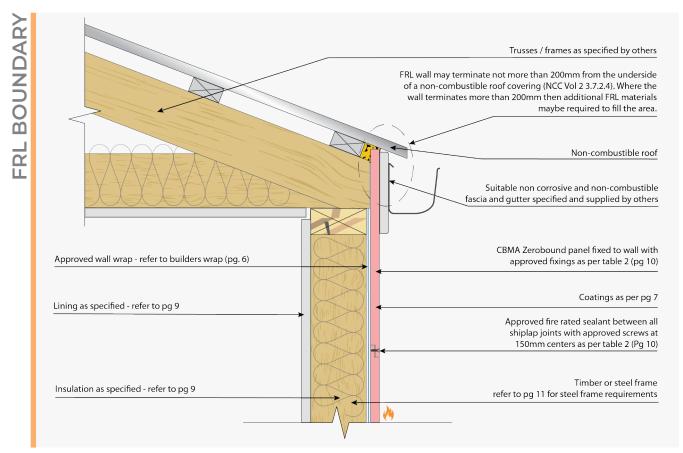
ZEROBOUND TYPICAL REBATE SLAB DETAIL



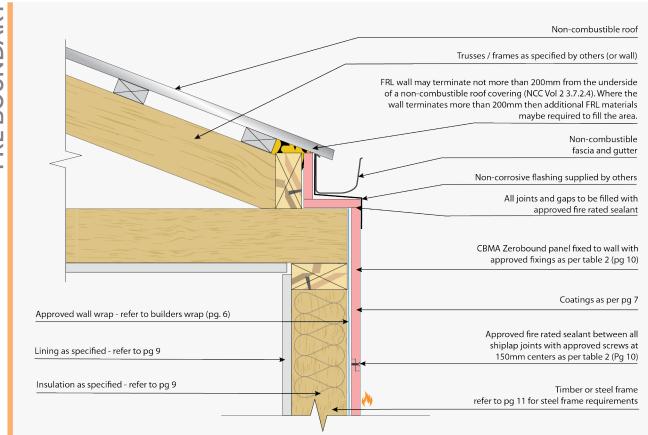
ZEROBOUND TYPICAL OVER MASONRY DETAIL



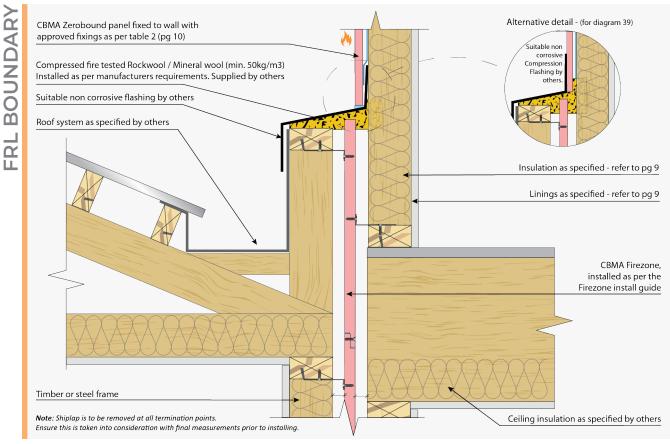
ZEROBOUND TYPICAL EAVE DETAIL



ZEROBOUND TYPICAL NO EAVE DETAIL

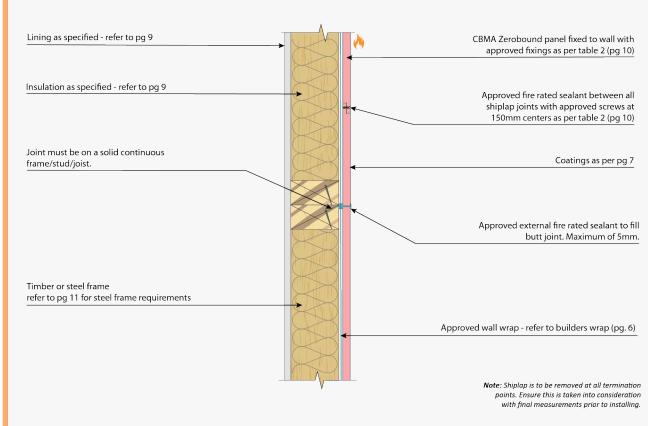


ZEROBOUND TYPICAL REBATED EAVE DETAIL

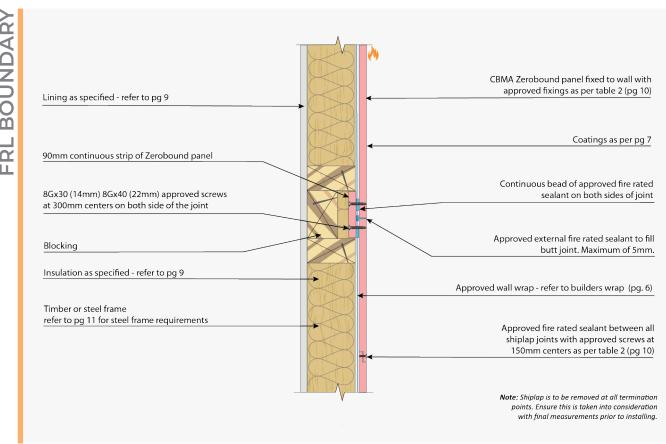


ZEROBOUND TYPICAL PARTY WALL JUNCTION DETAIL





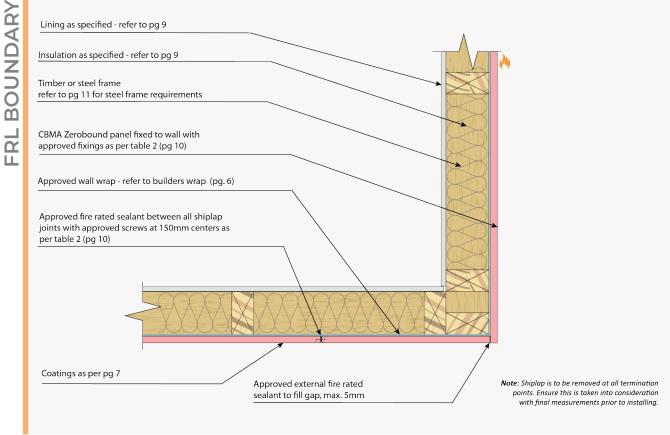
ZEROBOUND TYPICAL HORIZONTAL / VERTICAL EXPANSION JOINT DETAIL



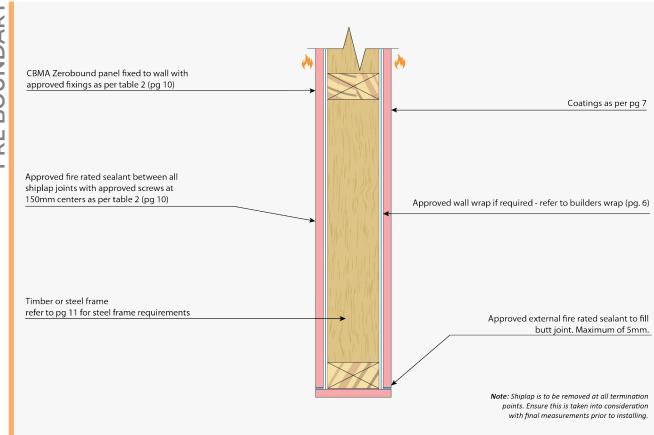
ZEROBOUND TYPICAL EXPANSION JOINT ALTERNATIVE DETAIL

ZEROBOUND TYPICAL INTERNAL CORNER DETAIL

DIAGRAM 29

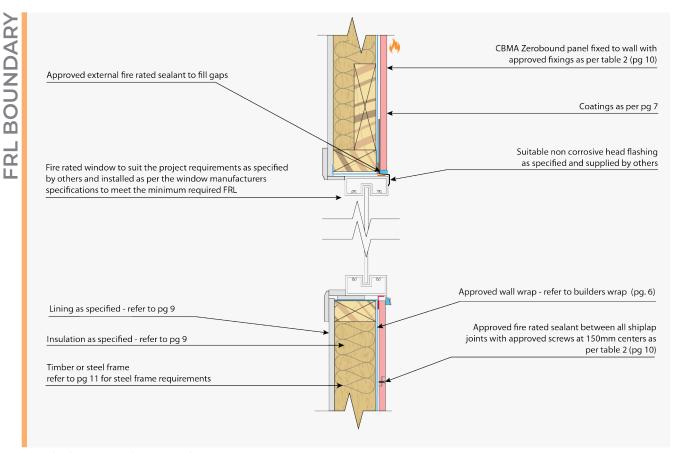


ZEROBOUND TYPICAL EXTERNAL CORNER DETAIL

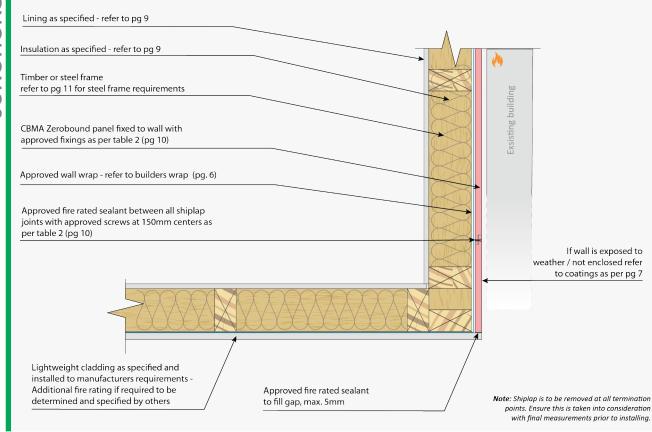


ZEROBOUND TYPICAL BLADE WALL DETAIL

DIAGRAM 31

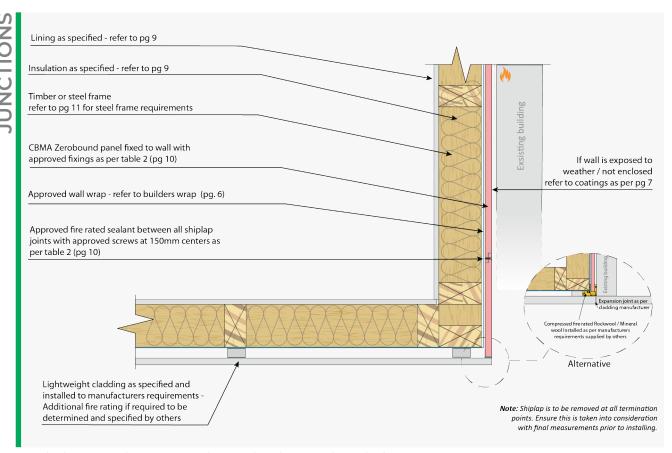


ZEROBOUND TYPICAL WINDOW DETAIL

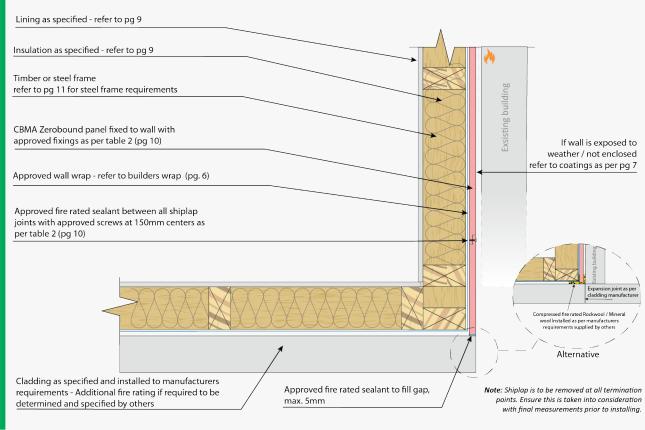


ZEROBOUND TYPICAL LIGHTWEIGHT CLADDING JUNCTION DETAIL

DIAGRAM 33

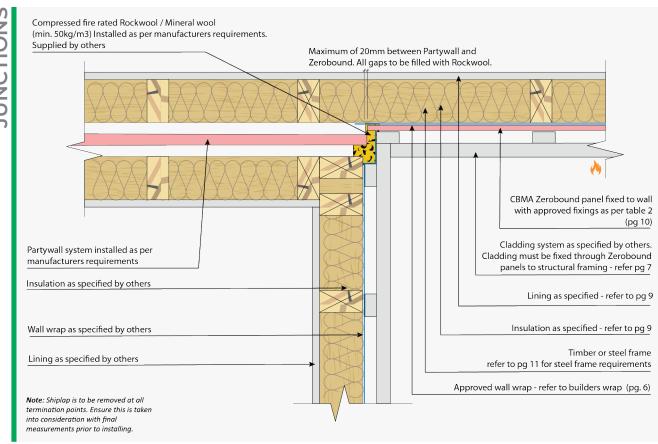


ZEROBOUND TYPICAL BATTEN LIGHTWEIGHT CLADDING JUNCTION DETAIL

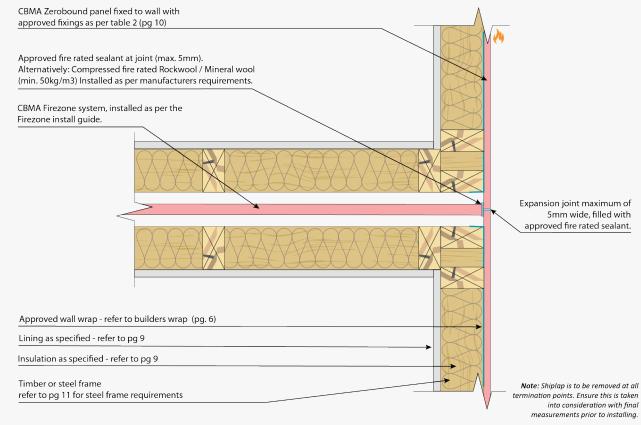


ZEROBOUND TYPICAL MASONRY JUNCTION DETAIL

DIAGRAM 35

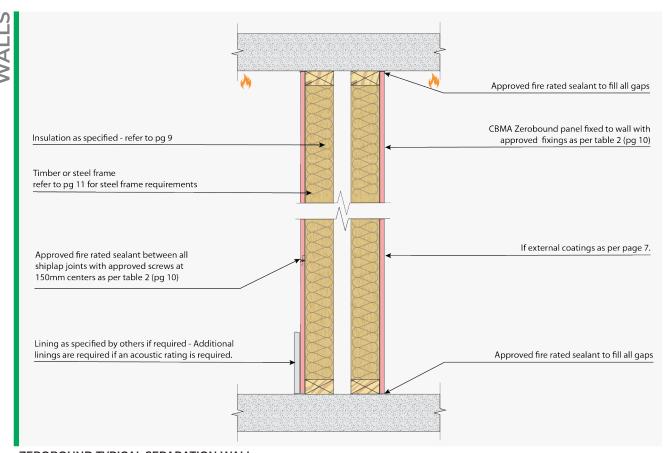


ZEROBOUND TYPICAL T JUNCTION DETAIL

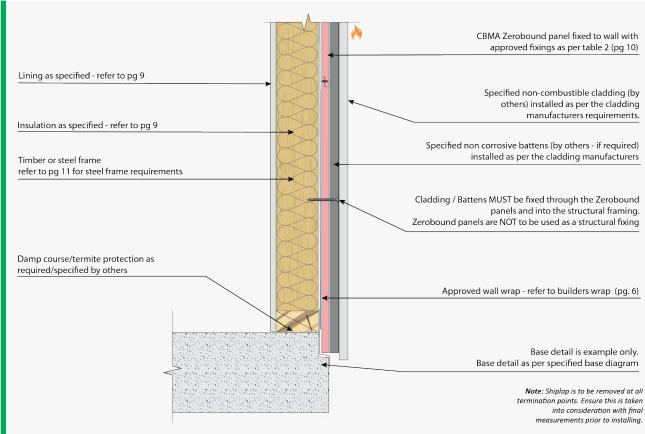


ZEROBOUND TYPICAL FRL JUNCTION DETAIL

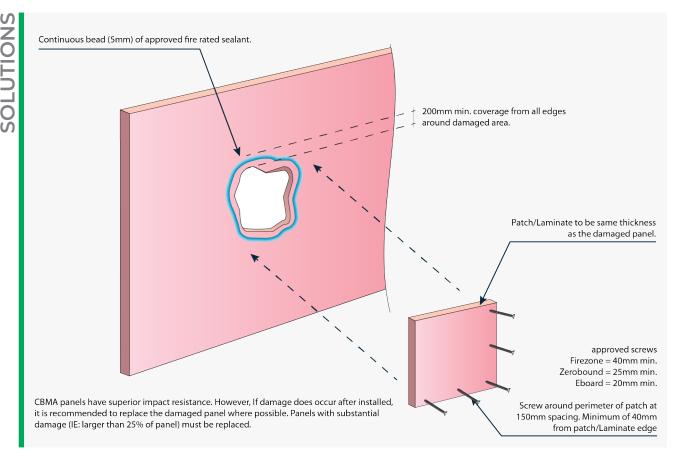
DIAGRAM 37



ZEROBOUND TYPICAL SEPARATION WALL



ZEROBOUND TYPICAL CLADDING OVER TOP DETAIL



ZEROBOUND TYPICAL PATCH DETAIL

NOTES

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NOTES

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