V2

Firestop 14mm System

PROBOARD.

Advanced Cladding Systems Pty Ltd

HIA
Member No. 1332198

CodeMark Australia
Certificate CM40370
CMI Certification

Firestop 90/90/90 FRL System Details

Installation Manual For Firestop 14mm

NCC 2022 (Amdt.2) – Volume 1 & 2 – Class 1 to 10

Index

Building Code Of Australia

ProBoard panels and ProBoard External Wall Systems have been rigorously tested and deemed to satisfy provisions and performance requirements of the National Construction Code (NCC 2022 Amdt.2) Volume 1 & Volume 2 , BCA, for use in class Class 1 to 10 buildings:

AS/NZS 1530.4:2014 - Fire-resistance tests for elements of construction. (10 mm ProBoard Panels)

ProBoard's Firebloc External Wall System been tested in a full-scale fire test (as per AS/NZS 1530.4:2005) and satisfied the Fire Performance Requirement by achieving a Fire Resistance Level (FRL) of 60/60/60 (Structural Adequacy for 60 minutes, Integrity for 60 minutes and Insulation for 60 minutes).

AS/NZS 1530.4:2014 - Fire-resistance tests for elements of construction. (14 mm ProBoard Panels)

ProBoard's Firestop External Wall System has been tested in a full-scale fire test (as per AS 1530.4:2005) and satisfied the Fire Performance Requirement by achieving a Fire Resistance Level (FRL) of 90/90/90 (Structural Adequacy for 90 minutes, Integrity for 90 minutes and Insulation for 90 minutes).

AS/NZS 1530.1 - Non-combustibility.

ProBoard panels have been tested for non-combustibility by an NATA approved testing laboratory and are deemed non-combustible.

AS/NZS 1530.3 – Determination of Early Fire Hazard Properties.

In accordance with AS 1530.3 - Methods for fire tests on building materials components and structures - Part 3: simultaneous determination of Ignitability 0, flame propagation 0, heat 0 and smoke release 0-1.

AS/NZS 4284:2008 - Testing of building facades.

ProBoard External Boundary Wall Systems have been tested by a NATA accredited testing laboratory in accordance with verification method F3V1 & H2V1 and achieved the weatherproofing performance requirement F3P1 H2P2 for up to N3 wind classification.

AS/NZS 4055 - Wind load for housing.

ProBoards External Boundary Wall Systems have been tested by a NATA accredited testing laboratory in accordance with AS/NZS 1170.2 Structural Design Actions Part 2) and achieved the Classification N1. N2 and N3 for screws installed @ 300 centres or 50mm x 2.5mm stainless steel coil ring nails @ 150 centres. NCC Volume 1 Specification C2D9 and achieved the requirements as an external wall of light weight construction.

Surface Indentation Test.

ProBoard External Boundary Wall Systems has been tested by a NATA approved testing laboratory in accordance with NCC Volume 1. specification C2D9, clause 5 (c) Reported to the requirements of clause (6e)

Sandbag Impact Test ASTM E695.

ProBoard panels have been tested by a NATA approved testing laboratory to the requirements of NCC Volume 1 specification C2D9, clause 5 (c) Reported to the requirements of clauses 6 (6) and (d)

Thermal Transmission 3.12.1.4.

10 mm ProBoard nominally achieves R0.02 m2 K/W, 14 mm nominally achieves R0.03 m2 K/W

Why Use ProBoard Panels

Advanced Cladding Systems was established to provide the Australian residential and commercial building sectors with a cladding that is cost effective and is fully compliant with Australian Standards. With the building industry becoming increasingly compliance focused, we are committed to providing one of the safest and compliant cladding panels in the Australian construction industry. We have called this panel ProBoard.

Highly versatile, our panels can be used in lieu of traditional cement sheeting or plaster. Our signature ProBoard panel is constructed from magnesium, which is a mineral that, when used as part of a cement mixture, can be cast into cement panels. Our panels are further strengthened by sheets of glass fibre mesh.

Your choice of cladding should be based on a careful assessment and prioritisation of each of the claddings following roles.

Cladding's primary objective is to shield the building from the weather and protect the building from fire. It is also a key element in the aesthetic appeal of the home which directly influences both the building costs and property values.

House cladding also has a significant effect on the environmental performance of your home and the initial impacts of the cladding, such as embodied energy, resource depletion and recyclability. These elements must be balanced against maintenance and durability. Other roles should include acoustic performance, thermal insulation and the capacity to deter pests / termites.

ProBoard's panels address's all the before mentioned issues.

ProBoard panels are water resistant and have been tested to Australian Standard 4284:2008 Weatherproofing – PASSED.

Non-combustible – Tested to Australian Standard 1530.1 Non-combustibility – PASSED.

Tested to Australian Standard 1530.4. ProBoard's 10 mm panels in our Firebloc System achieved an Fire Resisance Level (FRL) of 60/60/60. ProBoard's 14mm panels in our firestop system achieved a fire rating level (FRL) of 90/90/90.

Building costs – Only standard carpentry tools are required to install ProBoard panels and that, combined with quick installation systems, ensures that our panels are a price competitive cladding solution.

Property values – Can be finished with most external, ascetically pleasing finishing system that enhances the property's value.

Maintenance - Low maintenance due to the panels rot resistance and longevity.

Why Use ProBoard Panels cont.

Durability - High Impact.

Mould/mildew – ProBoard panels do not support the growth of mildew or mold

Acoustic qualities – Excellent acoustic qualities – ProBoard's Fireless Party Wall System achieves an acoustic rating up to 54 Ctr.

Thermal qualities – ProBoard panels have excellent thermal qualities.

Termite and pest resistant.

Environmentally friendly – Many environmental benefits come with ProBoard panels, one being the mining of the main element, magnesium. Magnesium is found on the earth's surface and requires no chemicals or energy sapping processes when mined.

The curing process of ProBoard panels captures carbon dioxide and is conducted at room temperature which makes the curing of our ProBoard panels an extremely green process. Our panels contain no asbestos or harmful chemicals. Off cuts can be reground and recycled because ProBoard panels are considered "nutritional waste", meaning they can be placed back into the soil as a nutrient.

Firestop 14mm 90 /90 /90 FRL System Details

Our Firestop External Wall System is a low cost, easy to install system that gives you an FRL of 90/90/90 using ProBoards 14 mm ship lapped panels. This system has been designed for use on external walls. The Firestop Wall System has been tested by way of a full-scale fire test conducted by NATA approved Warringtonfire.

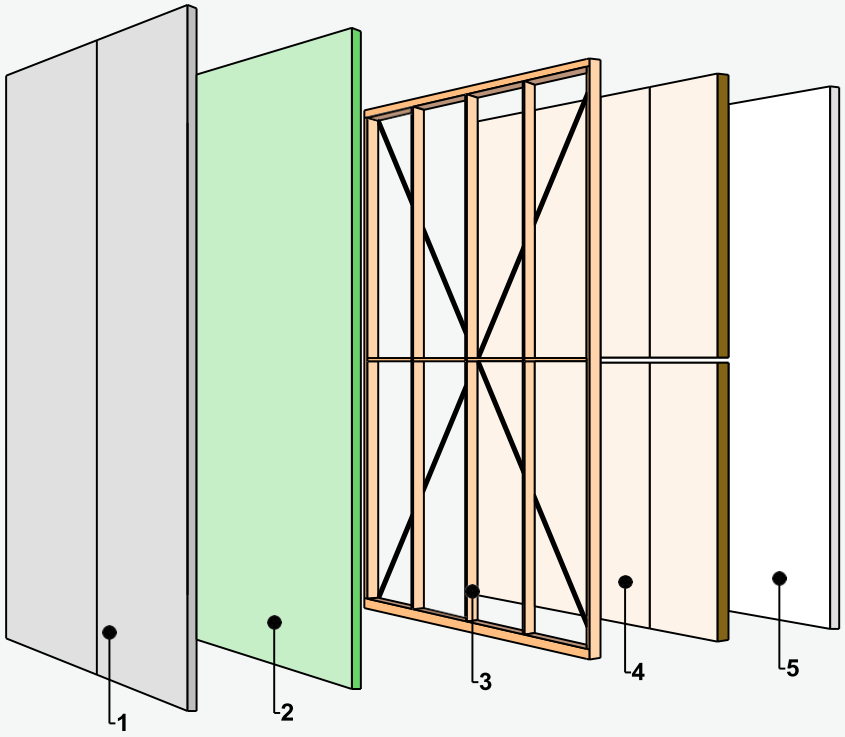
1. ProBoard 14mm shiplap panel. 90/90/90

2. Vapour permeable wall wrap must be installed in accordance with AS/NZS 4200.2:2017

3. Timber frame to AS1684.2 or AS1720.1. / Residential and Low-Rise steel framing. Part 1 & 2: Design Criteria as per AS/NZS4600 2018

4. Glass wool R2.5 batts minimum 20kg per m3.

5. 10mm plaster board.



ProBoard Panel Sizes

Board Name	Thickness	Width	Length	Weight	Edge Finish
ProBoard Panels	14mm	600mm	2700 mm	24Kg	Ship Lapped
	14mm	600mm	3000 mm	26kg	Ship Lapped

FRAMING REQUIREMENTS

TIMBER FRAME

Timber framing to be designed and constructed in accordance with AS 1684.2 or AS 1720.1 to BCA requirements. Timber dimensions of 90 mm x 45 mm at 600 mm maximum stud spacing or 90 x 35 at 450 mm maximum stud spacing.

Timber frame is to assume no axial strength contribution from wall linings. Some timber wall systems will have their axial load capabilities reduced due to the loss of section as the timber chars.

STEEL FRAME

The steel framing must be constructed and designed in accordance with AS/NZS 4600 or NASH standard - Residential and Low-Rise Steel Framing Part 1 or Part 2 The building designer must ensure that load bearing walls have been designed:

To resist all applied loads and assume no axial strength contribution form wall linings. Some wall systems will have capacities reduced. For steel, this is due to the steel weakning at temperature.

STORAGE AND HANDLING

When manually moving ProBoard panels carry horizontally. Care should be taken when handling the panels as not to damage the edges and surfaces. Persons moving the panels should have the appropriate Occupational Health & Safety training. All materials must be kept dry, preferably stored inside the building. If being stored outside, ProBoard panels are to be off the ground and protected from the weather. Store on a flat surface or on levelled supports ensuring the support covers the full width of the panel and spaced at the center point with no more than a 600 mm gap between supports.

SAFETY INSTRUCTIONS

The following safety precautions are recommended when cutting Proboard. Minimize the effects of dust by:

a) Providing adequate ventilation.

b) Use mechanical cutting tools fitted with dust extractor and storage bag.

c) Wear eye protection.

d) Wear an approved P2 mask.

In addition to the above, observe all Occupational Health and Safety regulations and Safe Work Method Statements.

ACCESSORIES

Screws and fire rated sealants are all available from Advanced Cladding Systems. If not using accessories supplied by Advanced Cladding Systems, the below mentioned accessories must be of an equivalent quality or better.

MECHANICAL FIXING:

Fixing	Purpose
8Gx20mm SS Class 304	Shiplap Join
8Gx40mm SS Class 304 OR 8GX40mm GALV	Studs & Perimeter
2.5x50mm SS Coil Ring Nails	Studs & Perimeter
Aluminium Brackets	Available from ACS
Steel L Brackets	Available from ACS

Fire Rated Sealants

Sealants must have a 4-hour fire rating when tested in accordance with AS1530.4 supplemented by AS4072.1 as well as BS476: part 20. Bostik FIREBAN is our recommended fire rated sealant for this system (Available from Advanced Cladding Systems).

Primer/Sealer:

ProBoard panels when put in a Zero-allotment application (uncoated) and are not visible or entirely exposed to the environment, do not require a primer/sealer, because it is in a dry state. However, in an instance where ProBoard panels are exposed to the outdoor elements for longer than 6 months or right away if exposed after 6 months, they are then required to be primer sealed (as per coating manufacturers guidelines) on all edges and face. All Coatings must be installed in accordance with the recommendations of the coating manufacturer. The decision as to what coatings are best for a given project belongs to the builder or other end user(s) (including but not limited to whether to use a shared flashing to enclose the wall or to coat the panel). It is recommended that ProBoard panels are rendered on the rough face and painted on the smooth face (please seek coating manufacturer render and painting specifications).

When installed in a Zero allotment application ProBoards prime/sealer markers are to be placed on the board or in the meter box. If primer/sealer markers are placed onto the board it must be visible on the wall for end user(s).

Important Construction Notes

Notes must be read before installation commences.

- ✓ Plan the job before commencing. Check the frame to ensure it is straight and plumb. Eaves, windows, doors and flashings should be installed before commencing.
- ✓ When planning out the installation of the ProBoard panels be sure to allow for any overhang at the commencement of the wall and the end of the wall.
- ✓ Always finish the bottom of the ProBoard panel as per BCA Requirement 3.5.4.7 Clearance between Cladding and Ground.
- ✓ Expansion joints (Primarily installed when Proboard panels are the finished painted or rendered materials) must be installed at a maximum of every 5 meters or as per working drawings and must be installed on individual studs. Install expansion joints vertically above and below windows and doors. On double storey or higher buildings install expansion joints horizontally between floors. For expansion joint details **(see Technical Drawings).**
- ✓ All warranties will be voided if the system, important notes, or the installation instructions are deviated from in any way.
- ✓ Before any finishing system is commenced, all surfaces must be thoroughly clean and free of all contaminants, dirt and grease. Any surface imperfections and irregularities (screw holes, etc.) should be patched with a stopping compound and sanded flush to the surrounding surface.
- ✓ If you are commencing the first ProBoard panel next to another cladding type, leave a 10 mm expansion joint between the ProBoard panel and the other cladding type. Fill all expansion joints with 4-hour fire rated sealant.

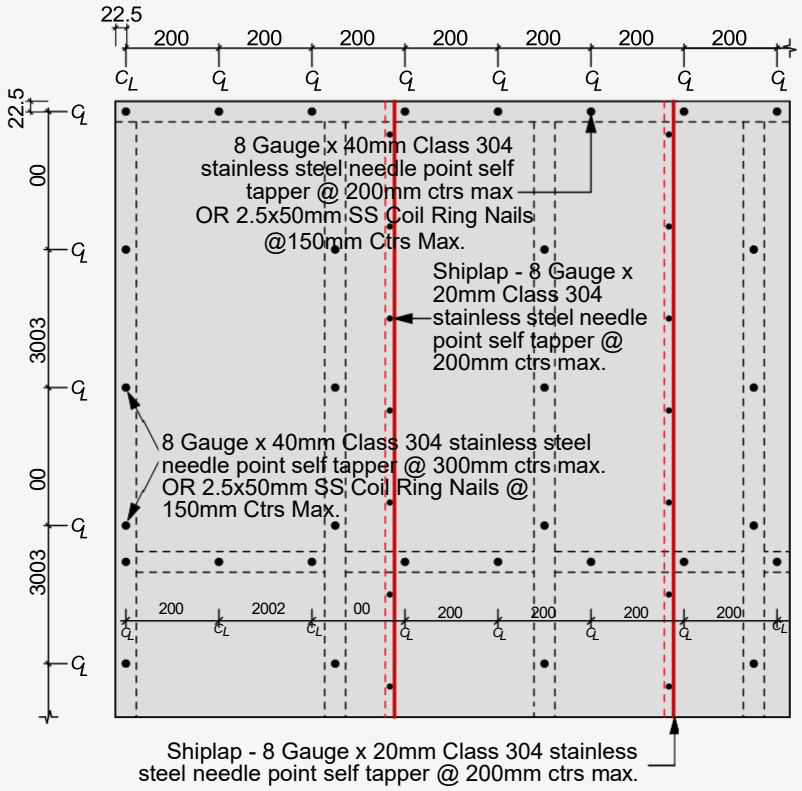
Firestop – Vertical Installation

14 mm ProBoard Panel

FRL 90/90/90

Ship Lap must be removed from the side of the first panel that is on the outside of the wall. No part of the panel, that has the potential to be exposed to fire, should be less than 14 mm in thickness.

Diagram 1



Installation of First Panel - See Diagram 1

Run a bead of sealant down all vertical shiplap joints and any square edged horizontal joints.

Fix the first panel approximately 22mm from the corner and 12mm – 15mm from the top sheet perimeter.

Approved screws, 8-gauge x 40 mm screws are to be fixed at a maximum of 300mm centers vertically and 200mm centers horizontally.

On ship lap joints, 8-gauge x 20 mm screws are to be fixed at a maximum of 200mm centers.

Screws are to finish 0.5mm below the surface of the board.

Firestop – Vertical Installation cont.

14 mm ProBoard Panel

FRL 90/90/90

Installation of Second Panel

After fixing the first ProBoard panel, run a small bead of fire rated sealant down the middle of the vertical shiplap of the installed panel and then a bead of fire rated sealant down the middle of the ship lap of the second board to be installed. Fix the second panel to the studs using 8-gauge x 40 mm Stainless screws. Fix at a maximum of 300mm centers. Fix the ship lap using 8-guage x 20mm screws at 200 centers maximum.

Repeat this process until all the panels are installed. Take care not to get any fire rated sealant on the face of the panel.

Before any finishing system is commenced, all surfaces must be thoroughly clean and free of all contaminants, dirt and grease. Any surface imperfections and irregularities (screw holes, etc.) should be patched and sanded flush to the surrounding surface.

Paint

If exposed to the elements a good quality external paint system should be applied as per manufacturer's instructions ensuring a good quality primer/sealer is first applied. ACS recommends Haymes Paints systems.

Stick On Finishes

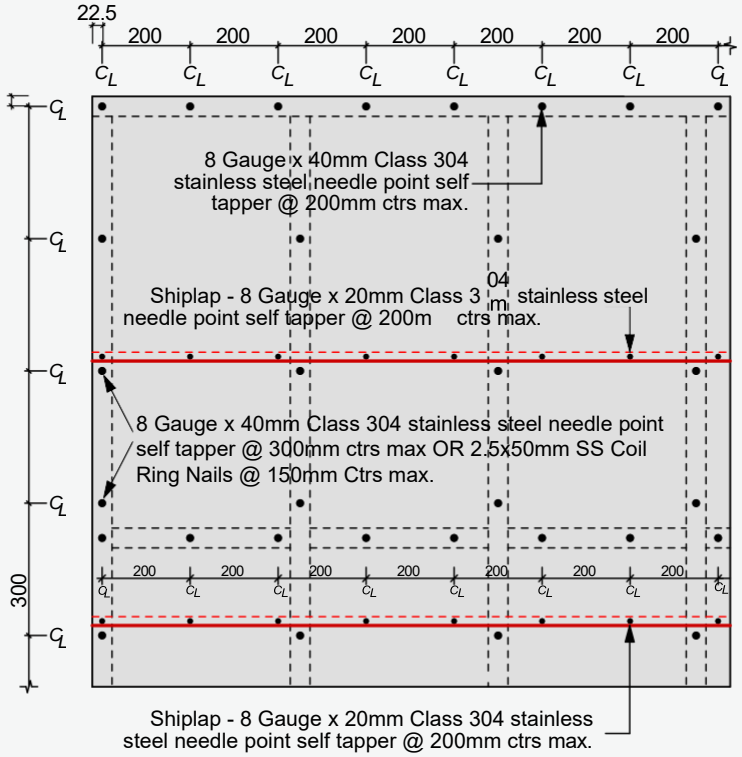
A good quality flexible tile adhesive should be used as per manufactures instructions. Extra screw fixings may be required because of the weight of the tiles. Check with Advanced Cladding Systems before commencing tile fixing.

Solid Render

If exposed to the elements Advanced Cladding Systems recommends Haymes systems or a good quality render system.

Firestop – Horizontal Installation

Diagram 1



Fixing Placement - See Diagram 1

Approved screws, 8-gauge x 40 mm screws are to be fixed at a maximum of 300mm centers vertically and 200mm centers horizontally.

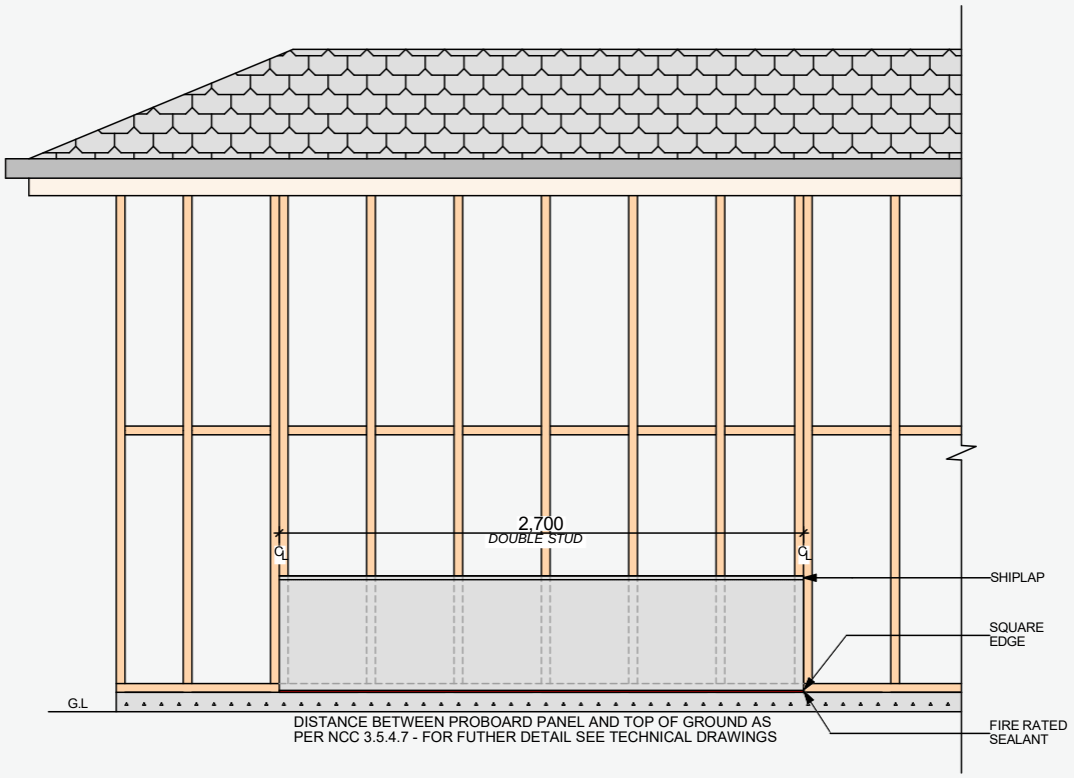
On ship lap joints, 8-gauge x 20 mm screws are to be fixed at a maximum of 200mm centers.

Screws are to finish 0.5mm below the surface of the board.

Firestop – Horizontal Installation cont.

Diagram 2

* single stud lay out permitted with use of back blocking of 100mm strip of 14mm Proboard on square edge if square edge finishes off stud. Screw fix either side of the join using 20mm Screws at 300mm MAX vertical centres to secure the panels at the join to the back blocking board.*



Double Stud Layout - See Diagram 2

When you are installing Pro Board panels horizontally it is suggested that noggins be installed on the flat. Where vertical joins are meeting (every 7th stud), it is recommended that a double stud is installed with the middle of the double studs being at 2700mm centers from the middle of the previous double stud. This reduces the chance of the ProBoard panel breaking away on the edge and gives your screws a better grip.

Installation of First Panel - See Diagram 2

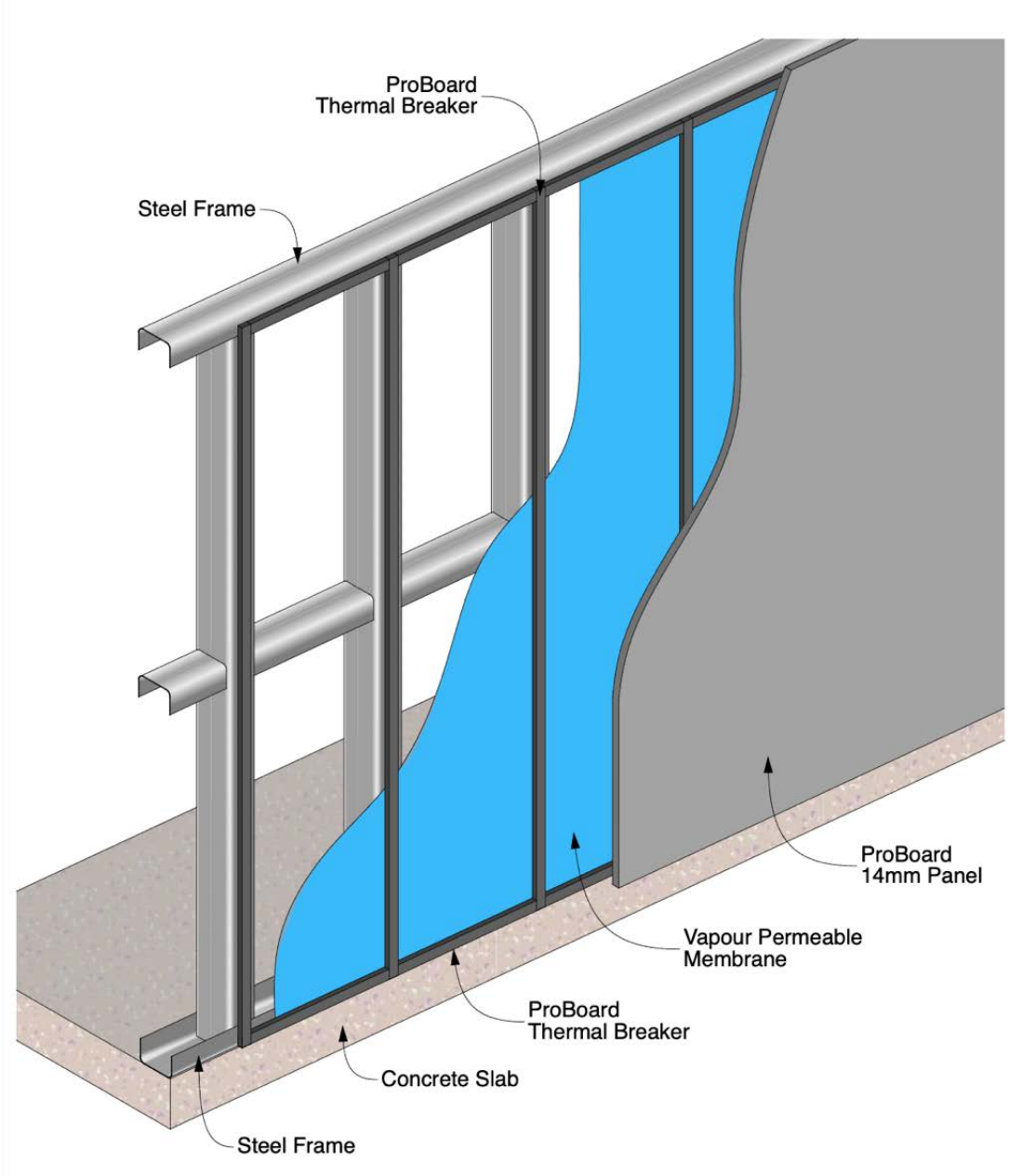
Commence installation third stud in from the end. Ensure the 2700mm panels join in the middle of every stud or in the middle of the double studs,

Remove one of the shiplaps. Install with the square edge (ship lap removed edge) facing down and the shiplap up the top. Fix as per **diagram 1**. Run a bead of fire rated sealant down the middle of the ship lap.

Steel Frame installation

ProBoard panels can be installed on steel frames to meet FRL requirements. AS per the National Construction Code (NCC) Volumes 1 & 2, a Thermal breaker of R0.2m2 K/W must be installed between the external cladding and metal frame, due to the higher thermal conductance of metal framed walls.

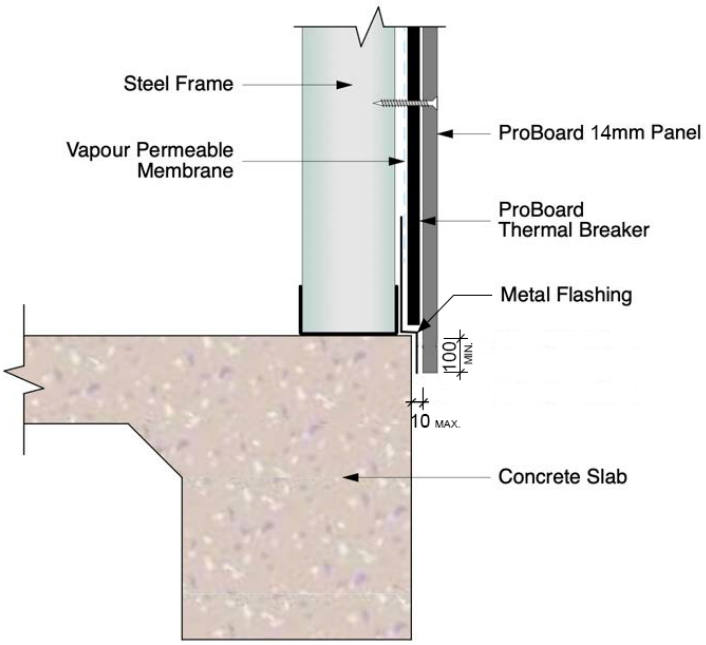
Install ProBoard Thermal Breaker strip continuously across the wall top plate. If there is cladding above the top plate (second storey) the strip is to be installed discontinuously to allow moisture to drain down the wall. Where non-combustible construction is required in the external walls of class 2-9 buildings of type A and B, the installation of the thermal break is required to be installed in accordance with Clause C2D10 (4)(f)(ii) of the NCC Vol.1.

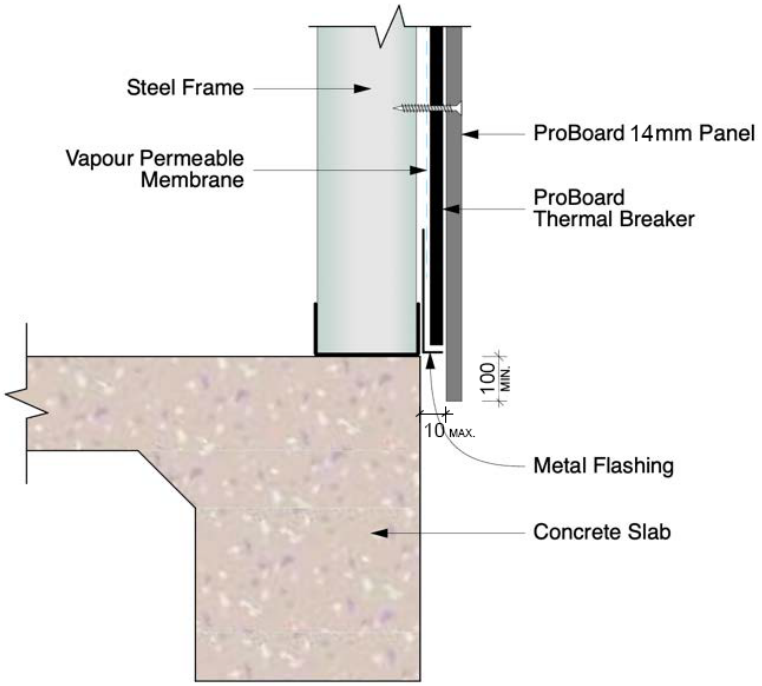


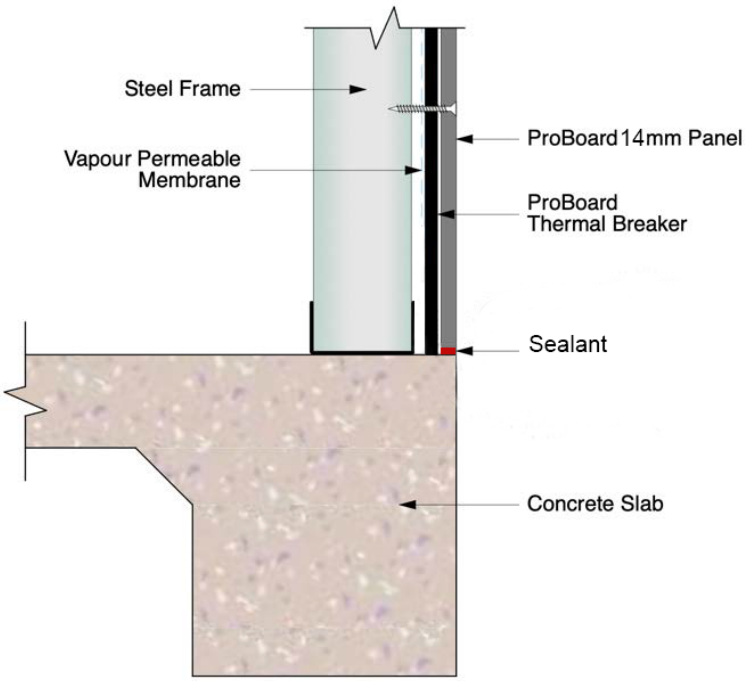
Steel Frame installation

Slab edge details:

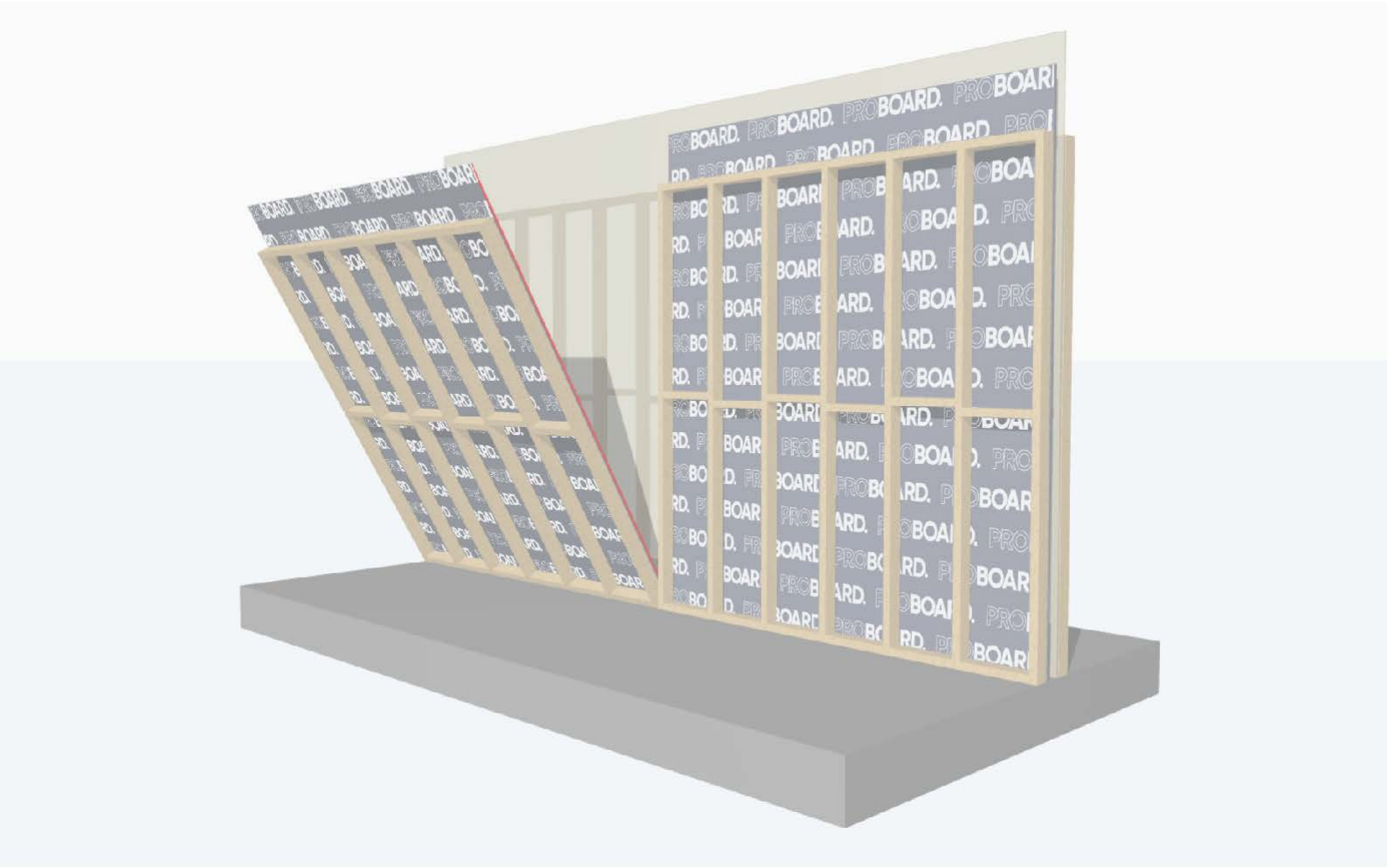
The following slab edge details are provided to illustrate a recommended method for different base junctions.







Zero Allotment Double Stud Butt Join Installation



Whilst installing ProBoard panels Vertically or Horizontally in a Zero allotment scenario, it is recommended that frames are built in smaller sections and stood separately rather than one long wall.

If the wall is a Firestop system (14 mm ProBoard panel) and the length of the wall is 2700 mm, the weight is approximately 180 kg.

It is recommended that the shiplap be removed (if vertical installation is being applied where the frames will meet) so that once the walls are stood the section between the two butt joins and two studs (steel or timber) can be filled with fire sealant, like our vertical or horizontal control joint details below.

Once the second section of wall is up and in place, fix the studs, bottom and top plates as per AS1684.4 Section 2.3, 2.4 and 2.5. Before fixing of frame to frame confirm these fixing methods with your engineer and/or building surveyor

Zero Allotment Floor Truss and Roof Truss Installation

Diagram 1

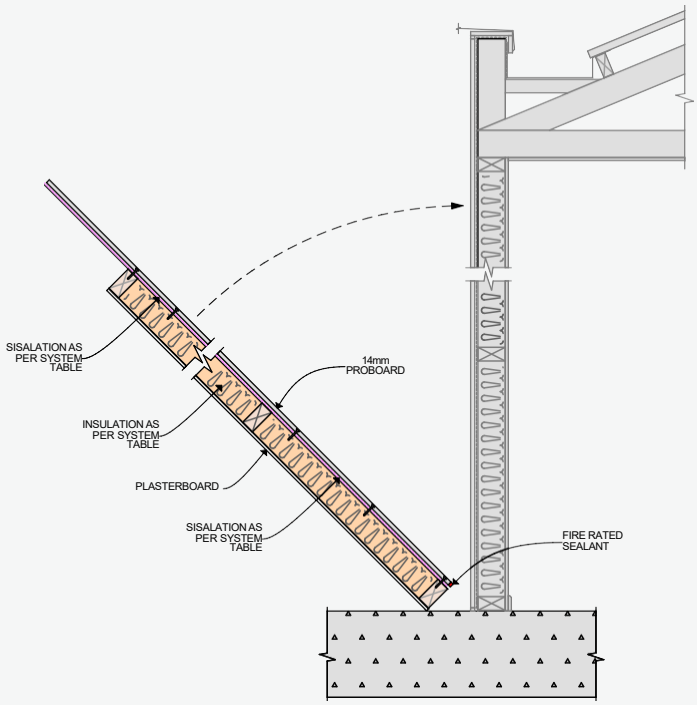
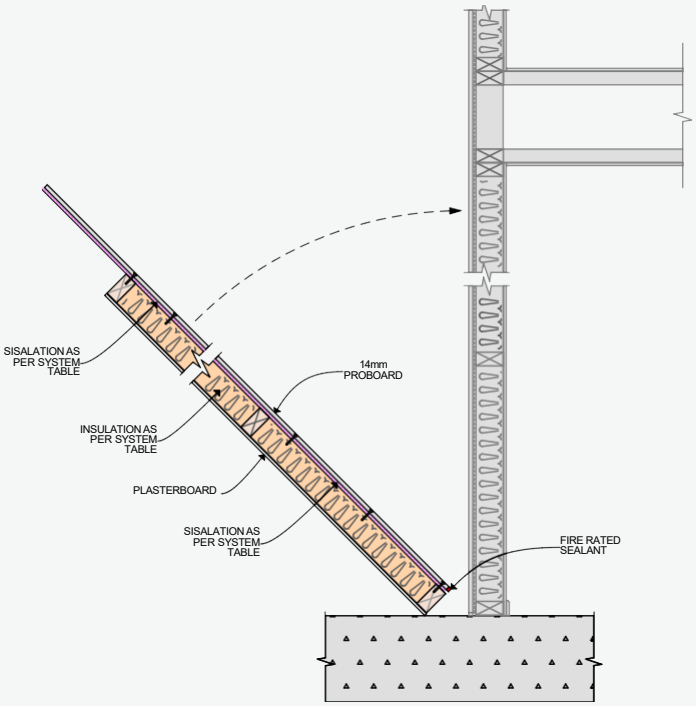


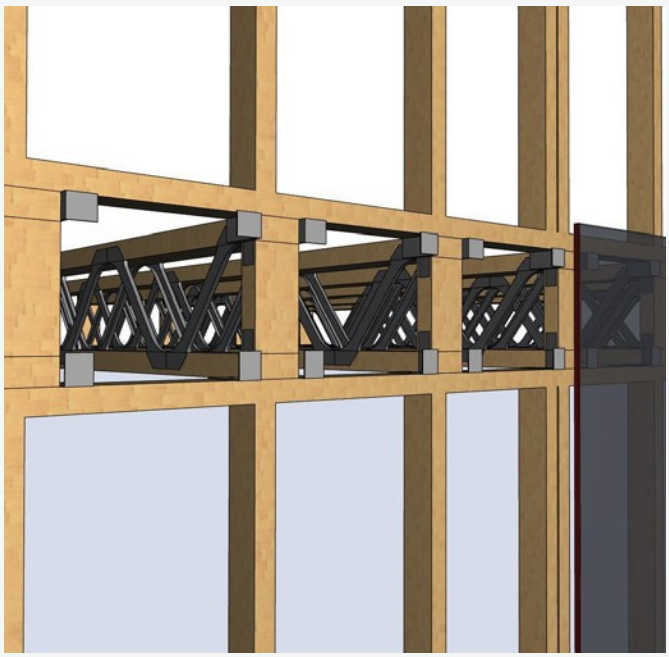
Diagram 2



Panel Installation - See Diagrams 1 and 2

When installing second wall leave enough of the ProBoard panel above the top plate to cover the height of the floor trusses or the roof trusses. If installing the wall in sections, ensure all lifting is as per Occupational Health and Safety requirements. After first section of wall is installed run a thick bead of fire-rated sealant down the side of the installed ProBoard panel. Brace the installed panel as required. Stand the next section of wall and butt up against the installed section and brace.

Diagram 3



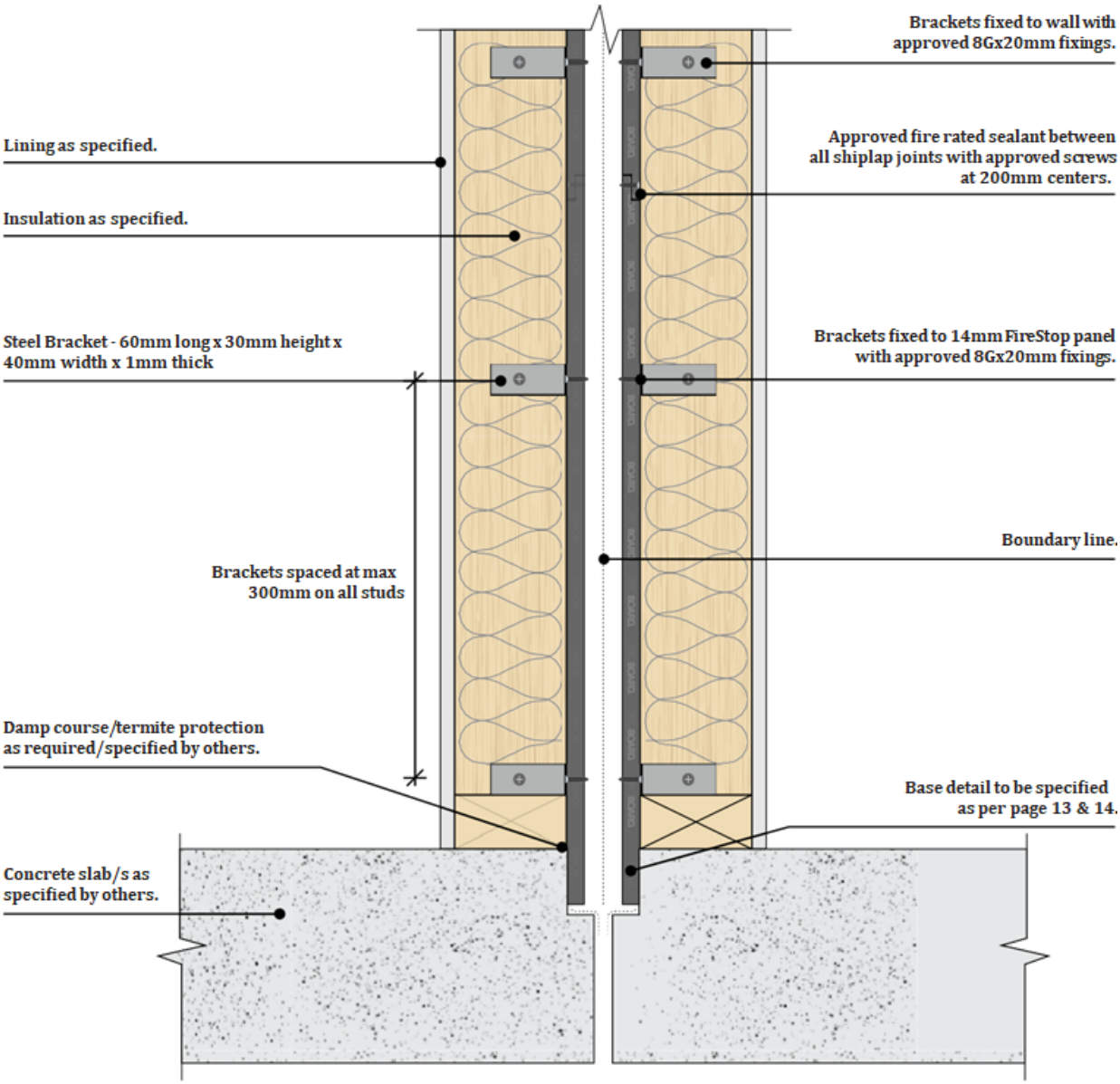
Bracket Layout and Fixing - See Diagram 3

Fix the first row of brackets to the top of the plate either side of the floor truss or roof truss at a maximum of 450 mm centres. Fix to the plates using Class 304 20 mm x 8-gauge screws.

Fix the upper row of brackets to the sides of every floor truss or roof truss at a maximum vertical distance of 300 mm from the bottom bracket. Fix to plates using Class 304 20 mm x 8-gauge screws.

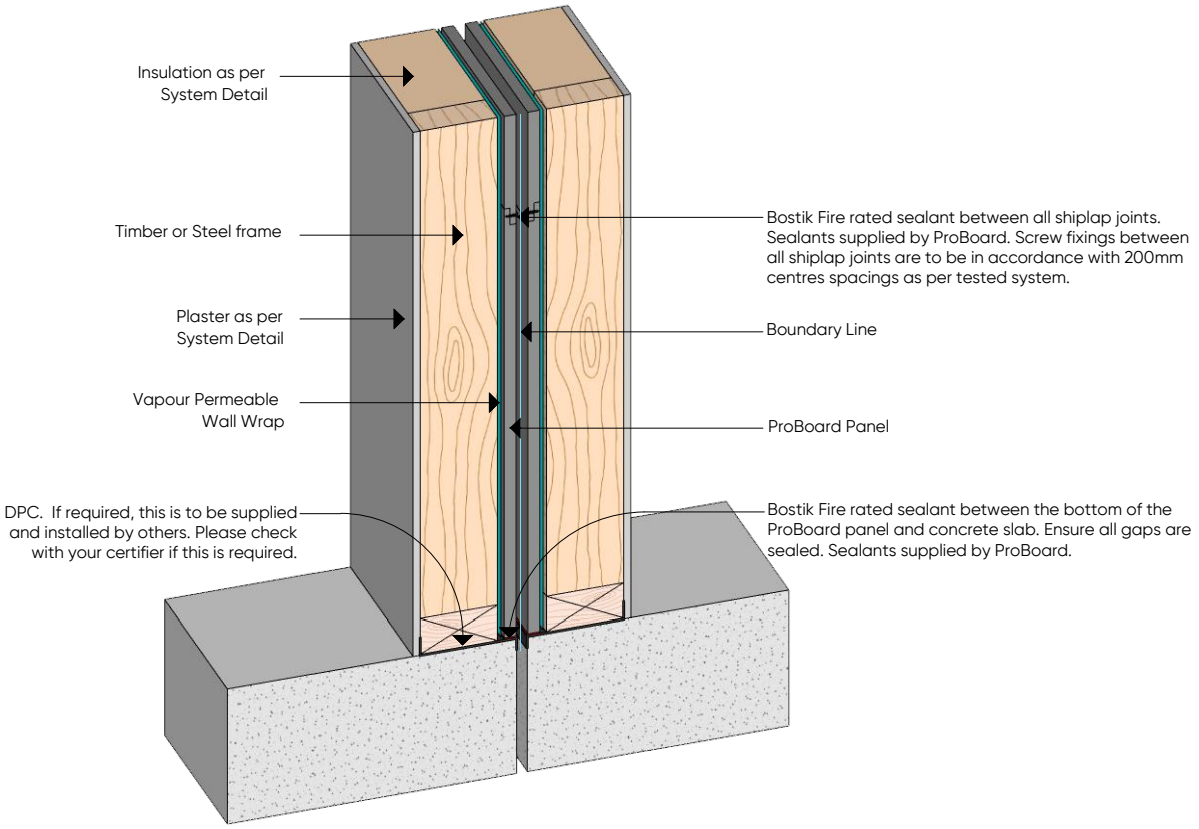
Fix all the brackets to the ProBoard panels using Class 304 20 mm x 8-gauge screws. Ensure there are two screws per bracket fixed to the ProBoard panel.

Bracket fixing is only to be used in a zero-allotment configuration where the ProBoard walls are enclosed. Bracket fixing is not to be used for boundary or exposed walls.

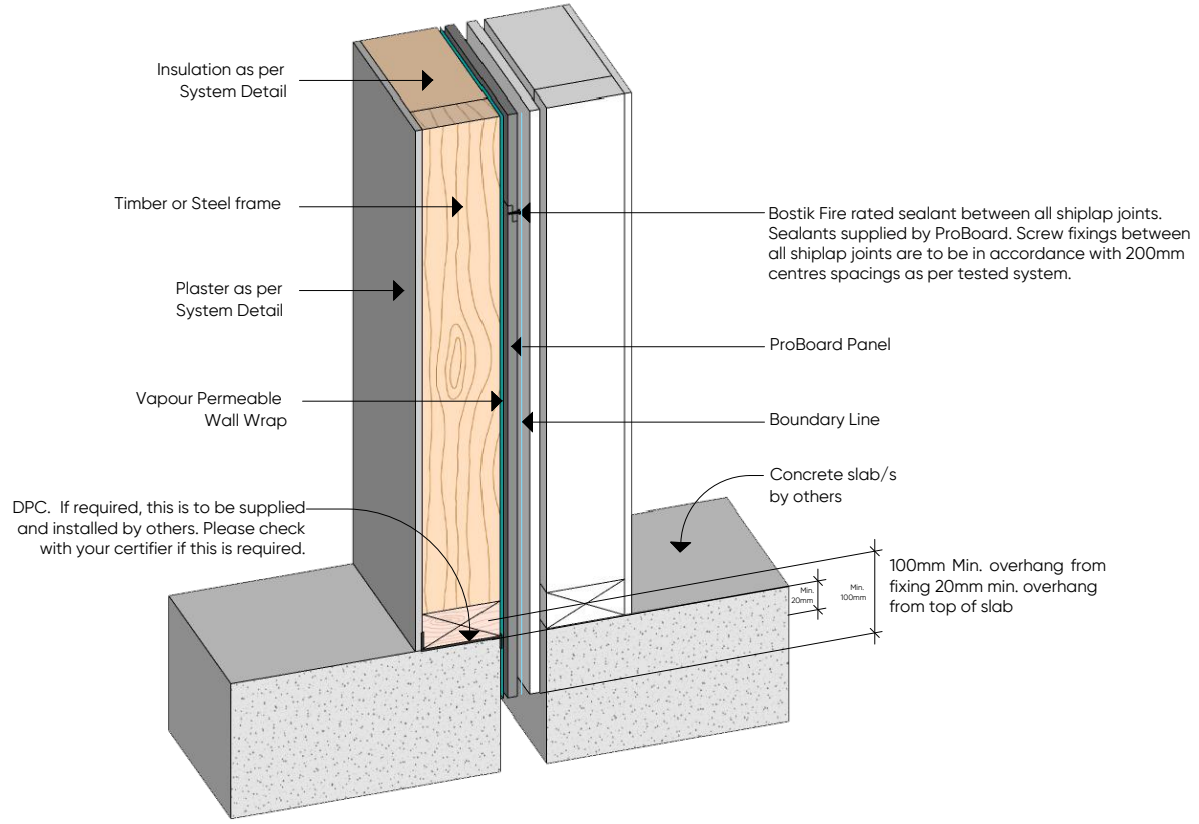


Note. Shiplap is to be removed at all termination points. Ensure this is taken into consideration with final measurement's prior to installing.

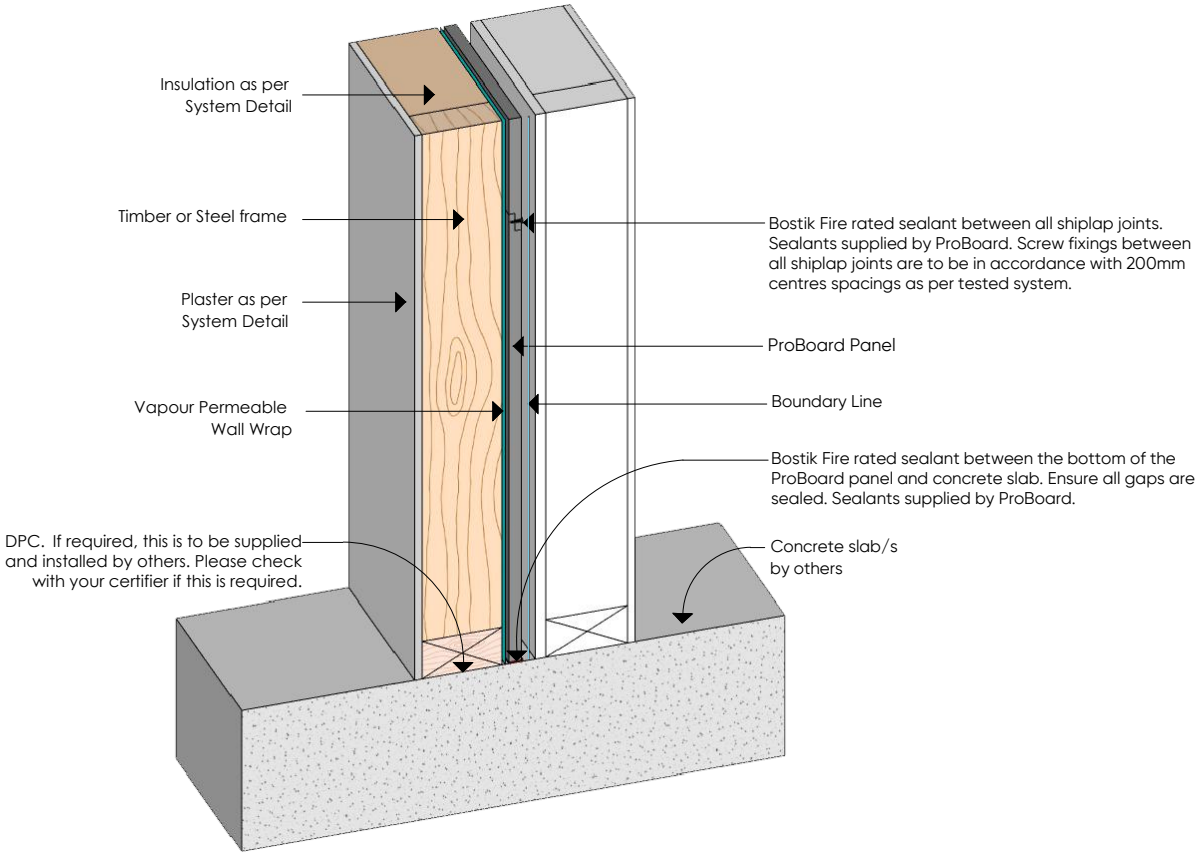
Zero Allotment Technical Details



PROBOARD BASE JUNCTION



PROBOARD BASE JUNCTION



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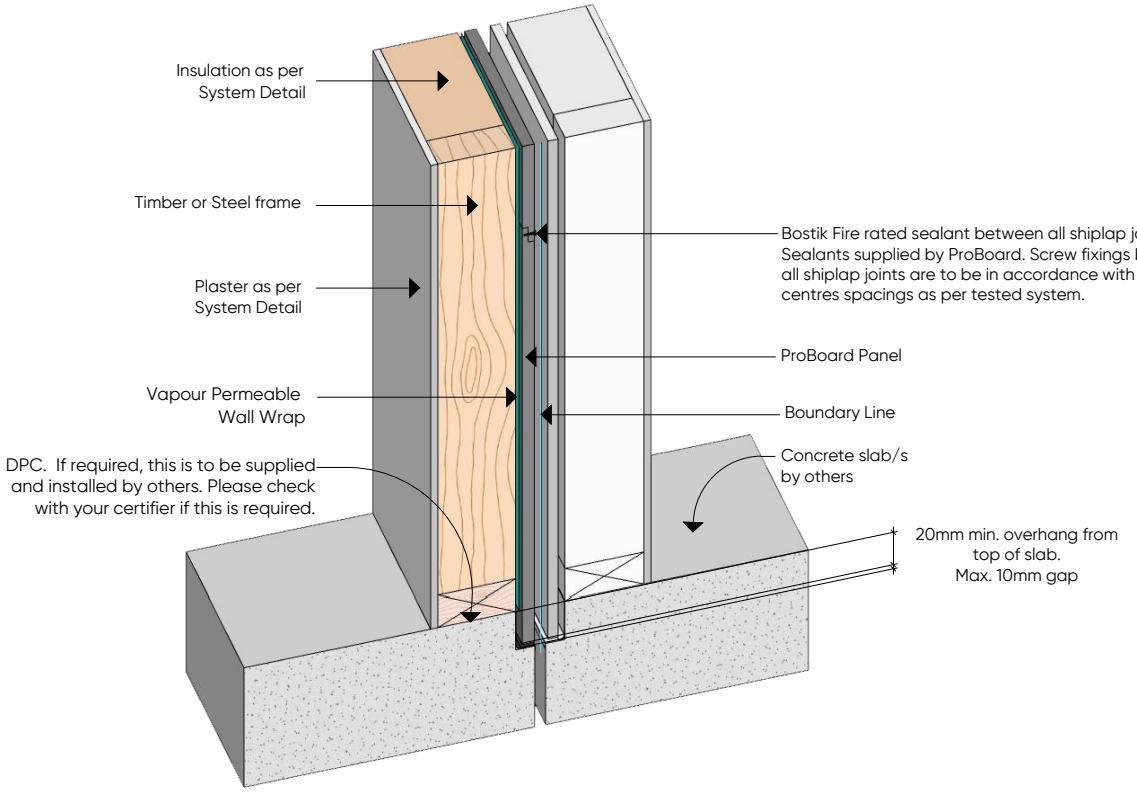

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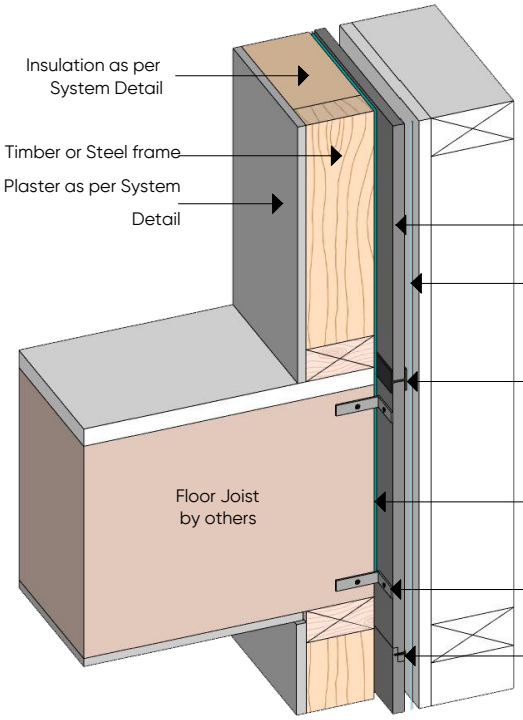
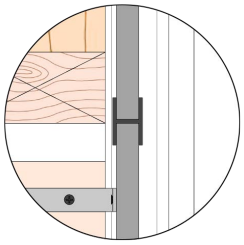


ProBoard Panel

Boundary Line

Proboard H channel connection, fire rated sealant either side of H channel.

Wall wrap

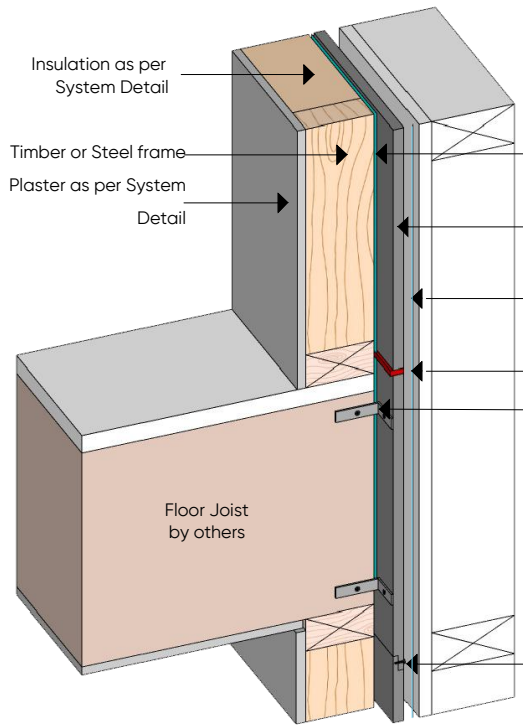


Approved fire rated sealant either side of H channel. H Channel does not need back Channel does not need back blocking or framing material behind it.

Alternative fixing solution. Please refer to diagram 3 on page 15. Note: if brackets are used internally along the entire wall, they must be Steel L brackets. If brackets are just being used in the floor and roof area, ProBoard Aluminium L brackets are permissible as per diagram 3.

Bostik fire rated sealant between all shiplap joints. Joints to be screwed at the appropriate centres. See earlier pages in manual for fixing spacings. Eg. 200mm Centres along the shiplap join.

PROBOARD FLOOR LEVEL DETAIL



Wall wrap

ProBoard Panel

Boundary Line

Fire rated sealant between panel butt joins. Panel must be back blocked with frame to use this method.

Alternative fixing solution. Please refer to diagram 3 on page 15.
Note: if brackets are used internally along the entire wall, they must be Steel L brackets. If brackets are just being used in the floor and roof area, ProBoard Aluminium L brackets are permissible as per diagram 3.

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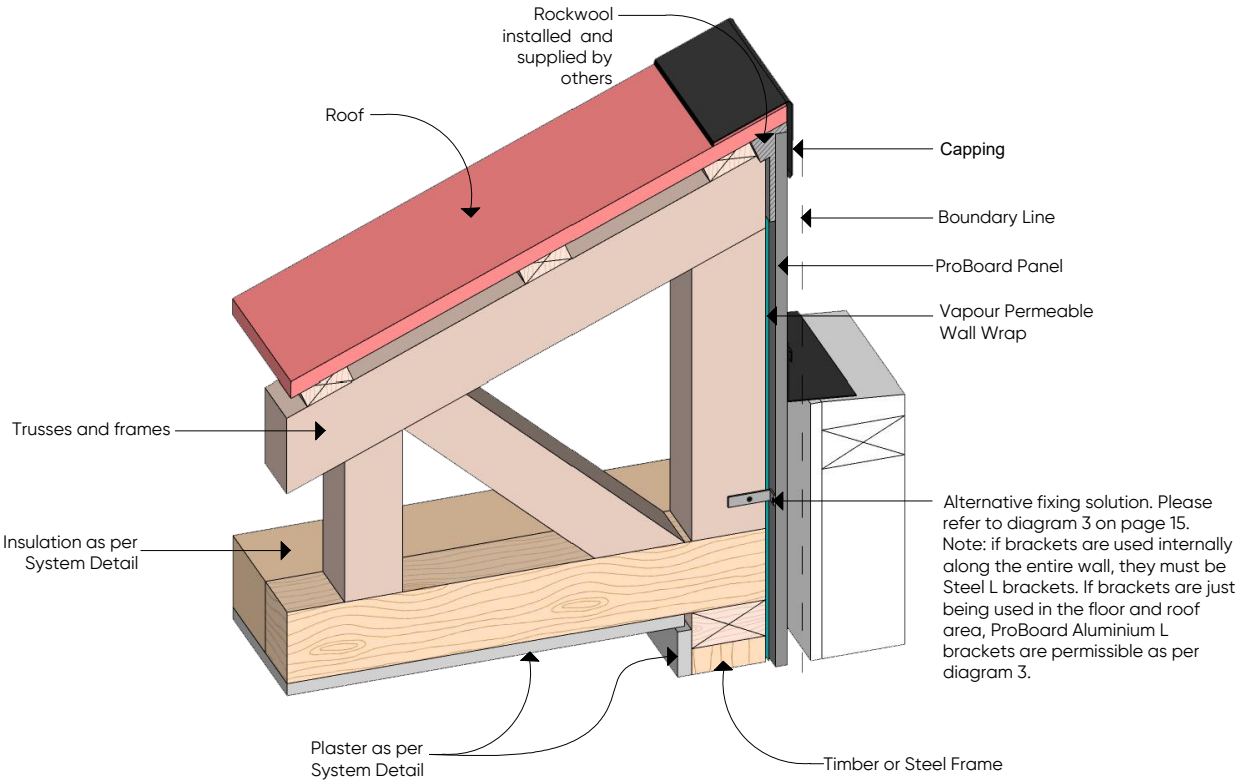
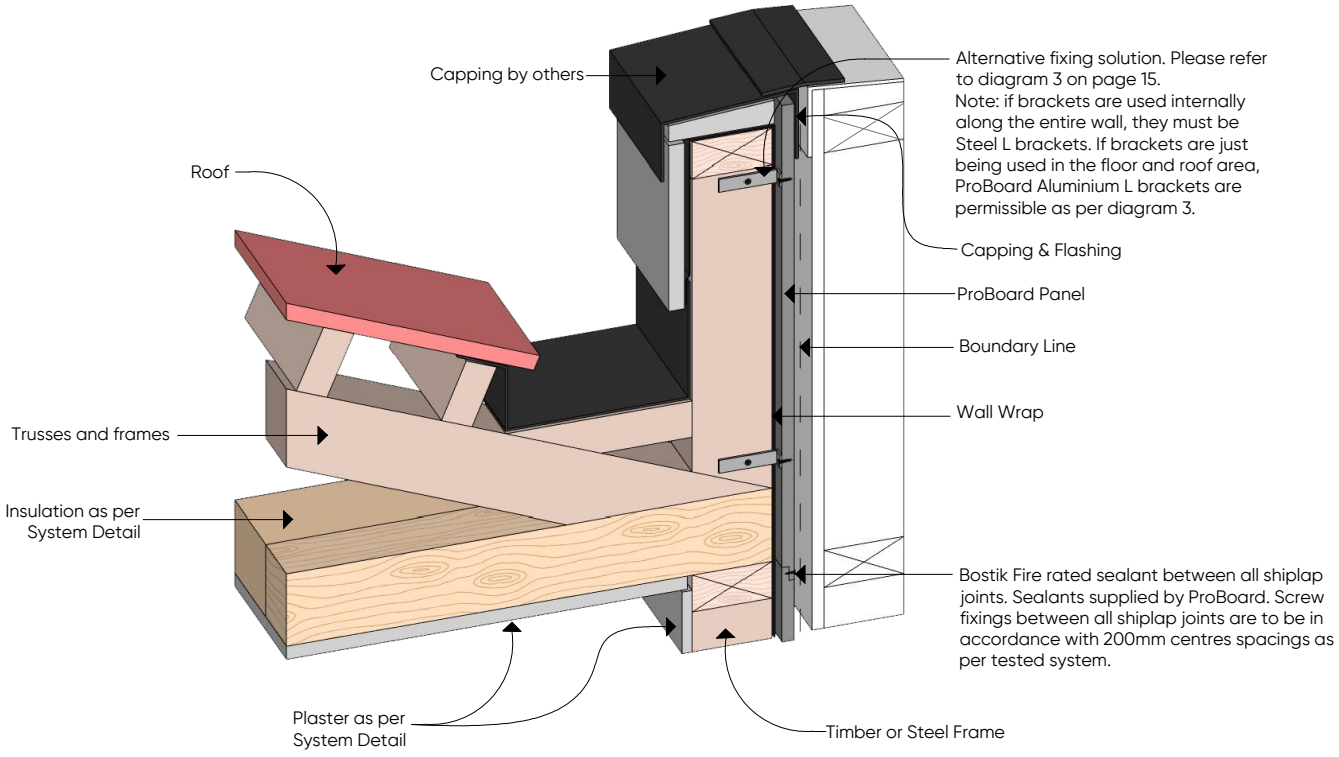
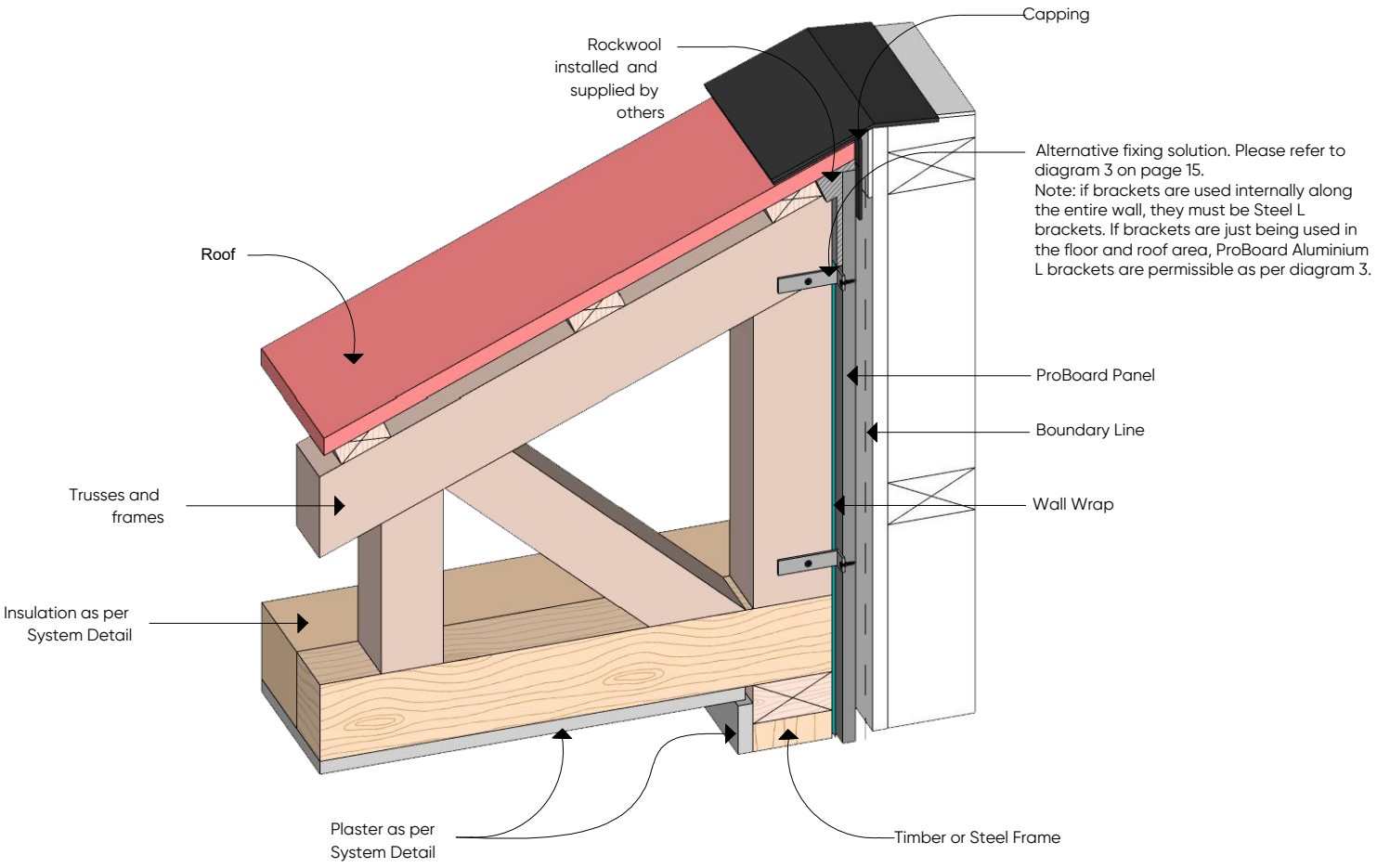


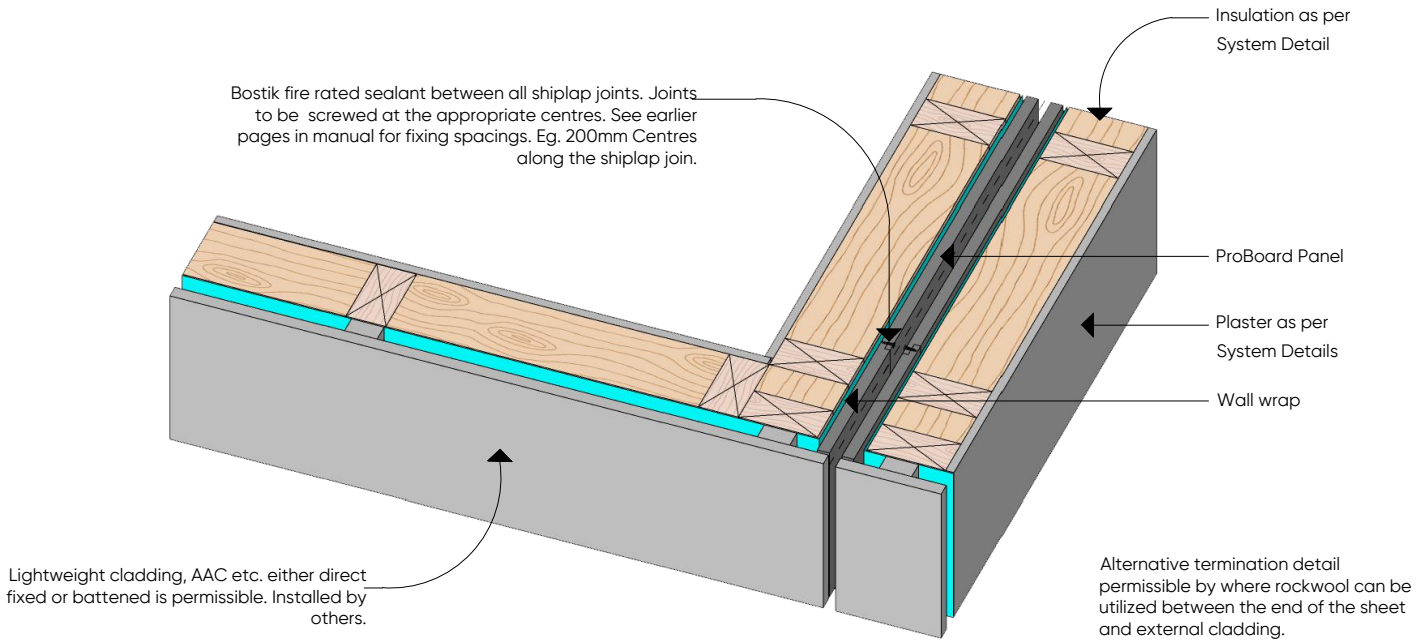
PROBOARD ROOF DETAIL



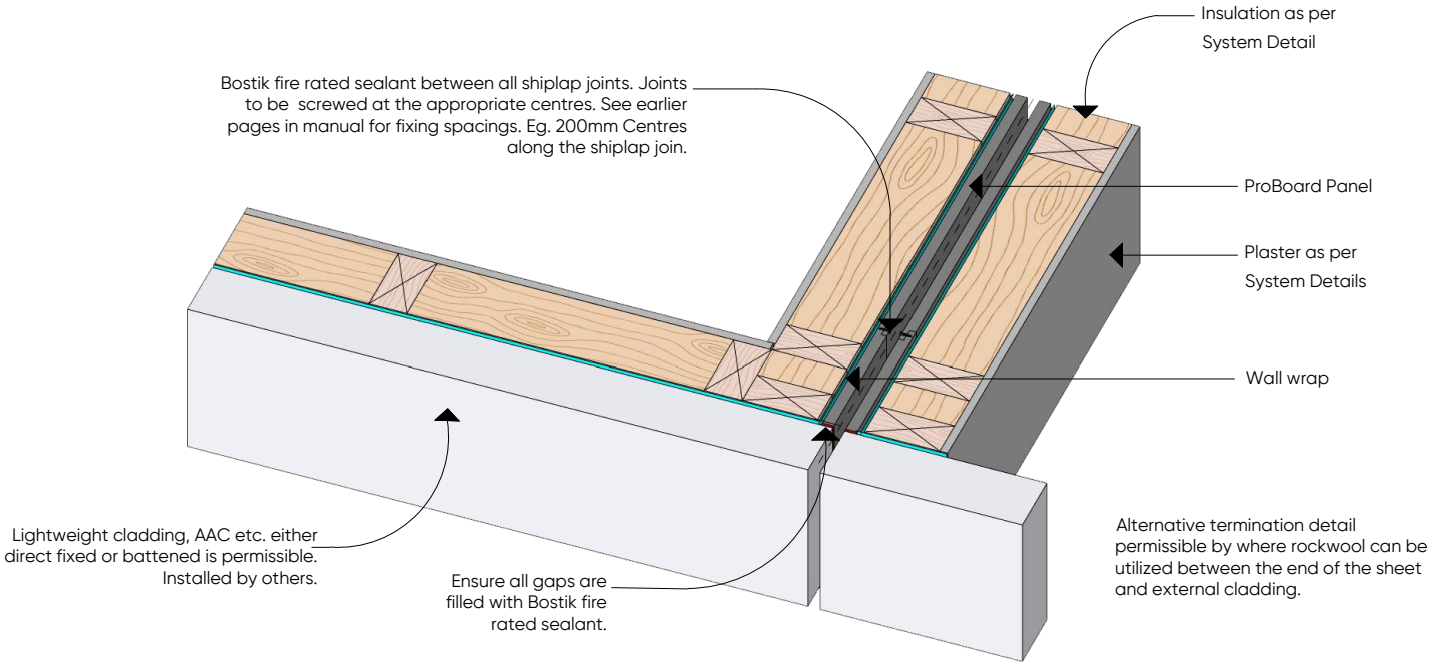
PROBOARD ROOF DETAIL



PROBOARD ROOF DETAIL

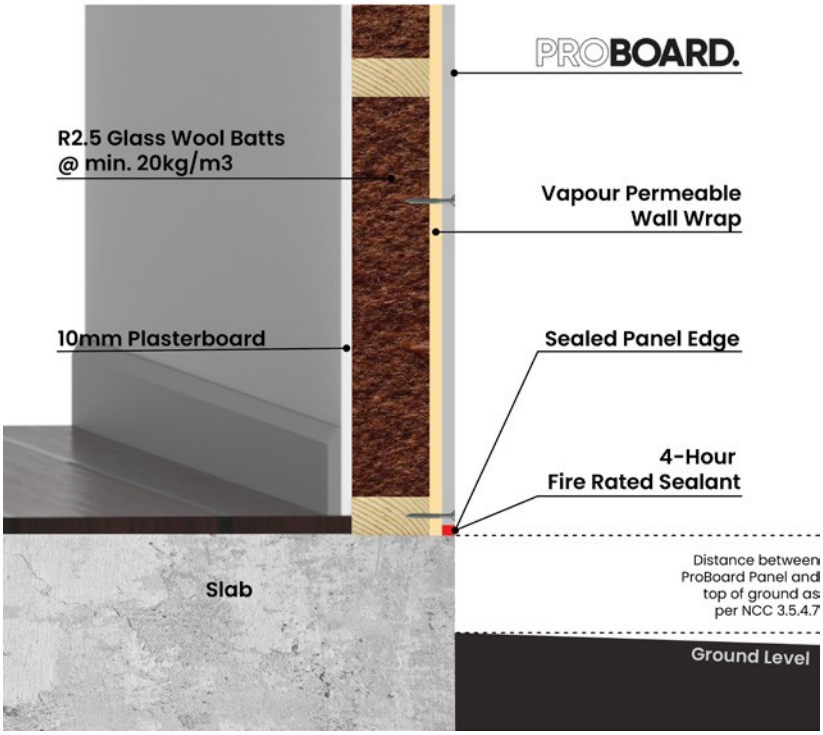


PROBOARD JUNCTION DETAIL

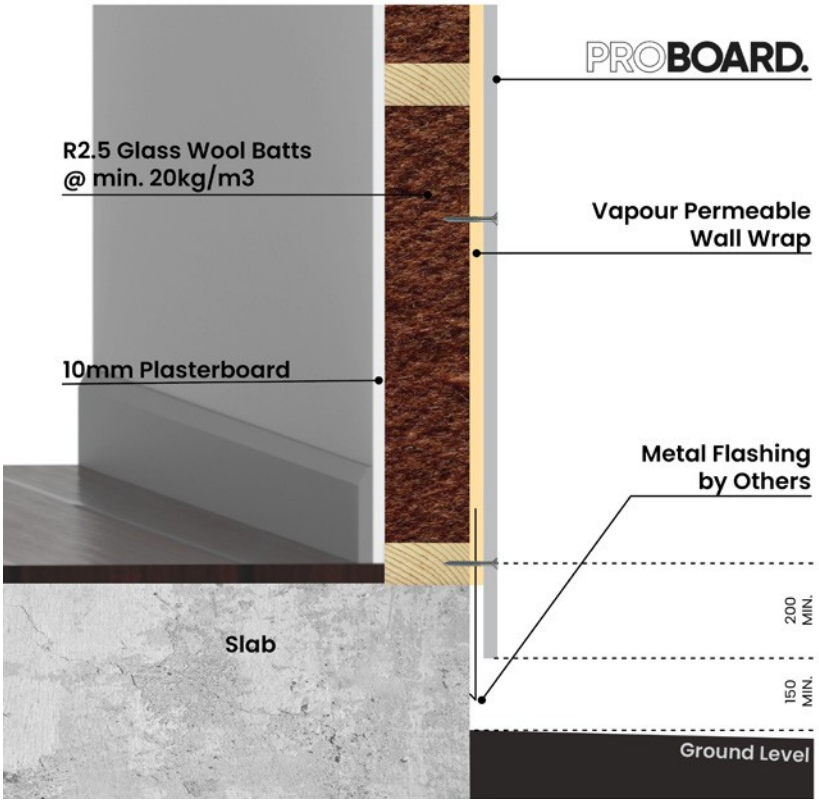


PROBOARD JUNCTION DETAIL

Typical Technical Drawings

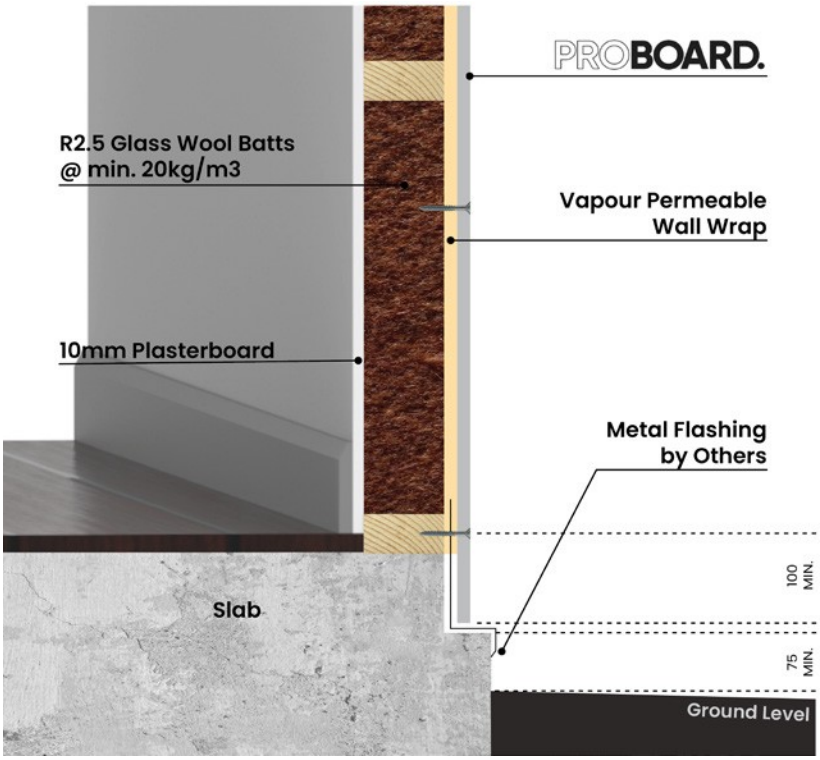


ProBoard Panel On Slab D1

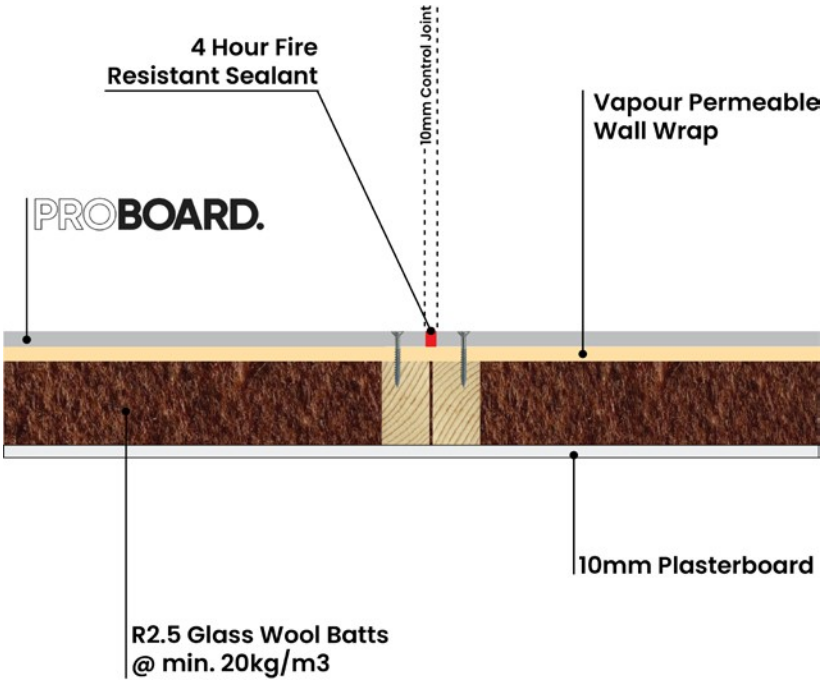


ProBoard Slab Over Edge D2

Typical Technical Drawings

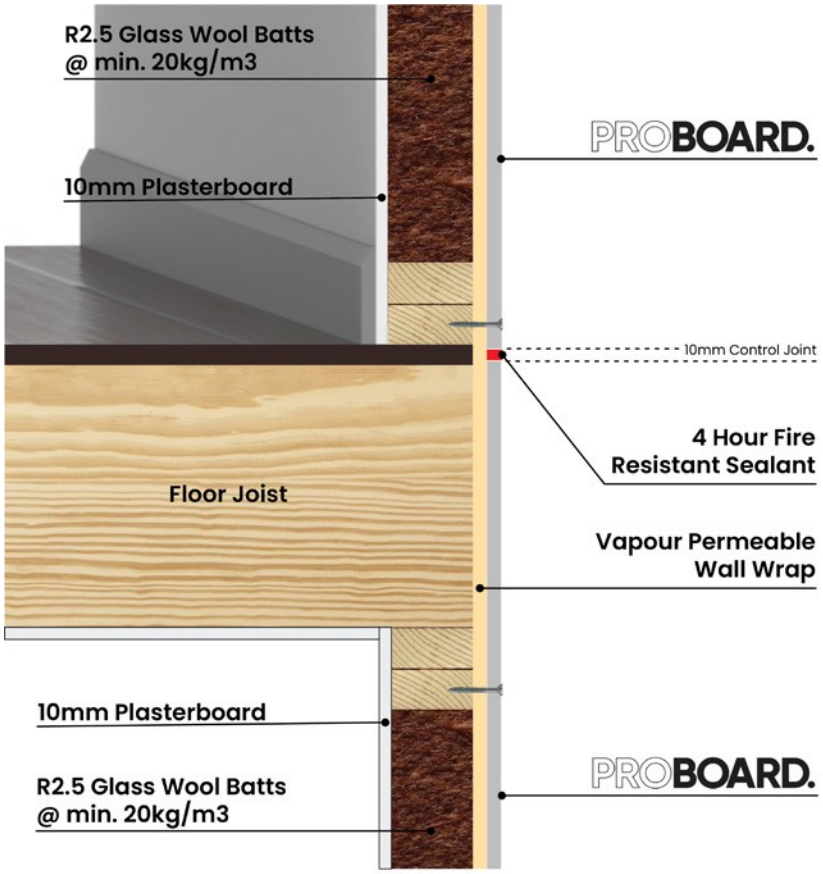


ProBoard
Slab
Rebate
D3

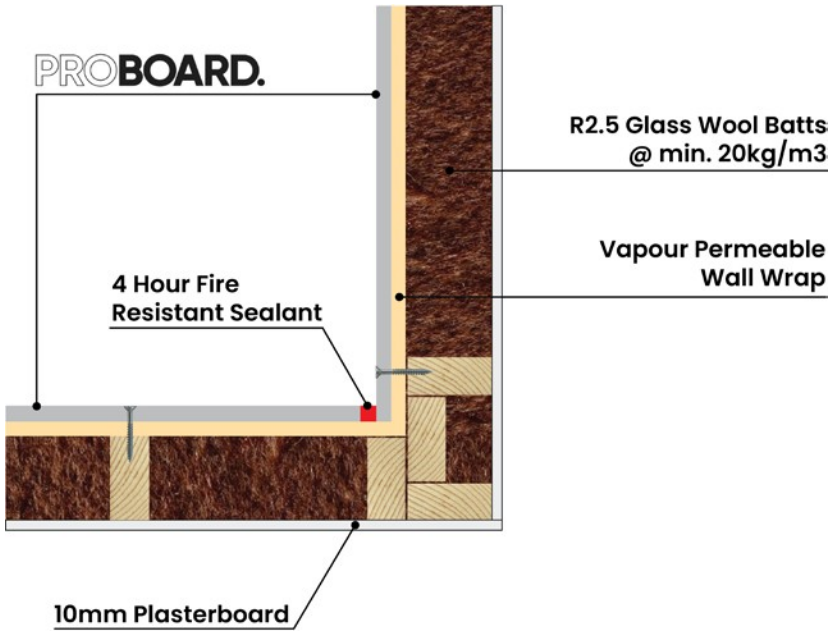


ProBoard Vertical
Control Joint D6

Typical Technical Drawings

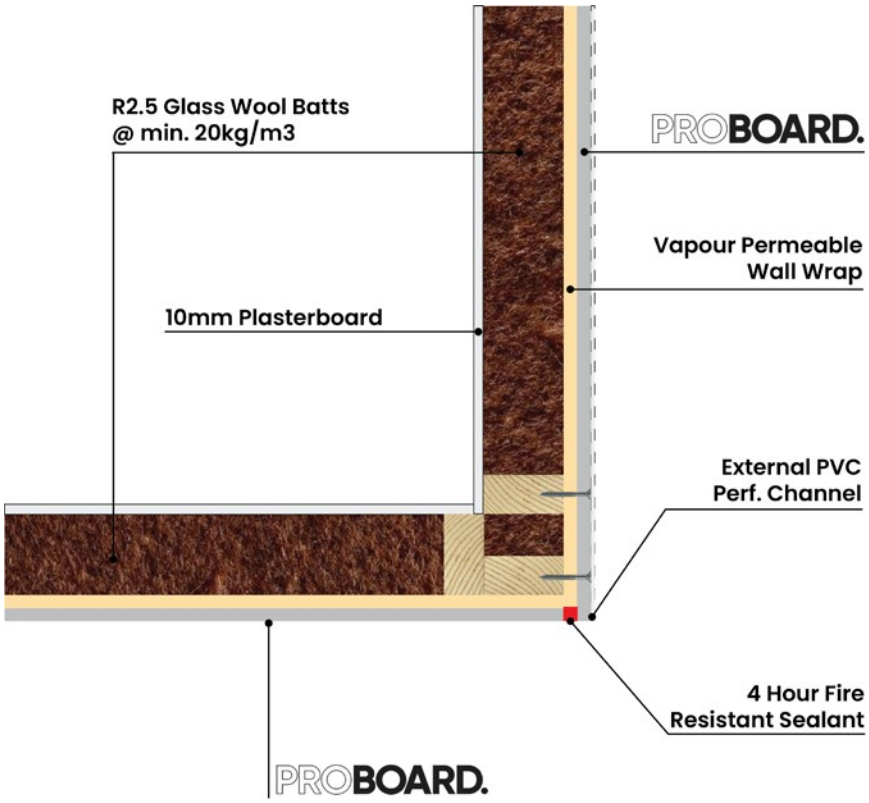


ProBoard Horizontal Control Joint D7

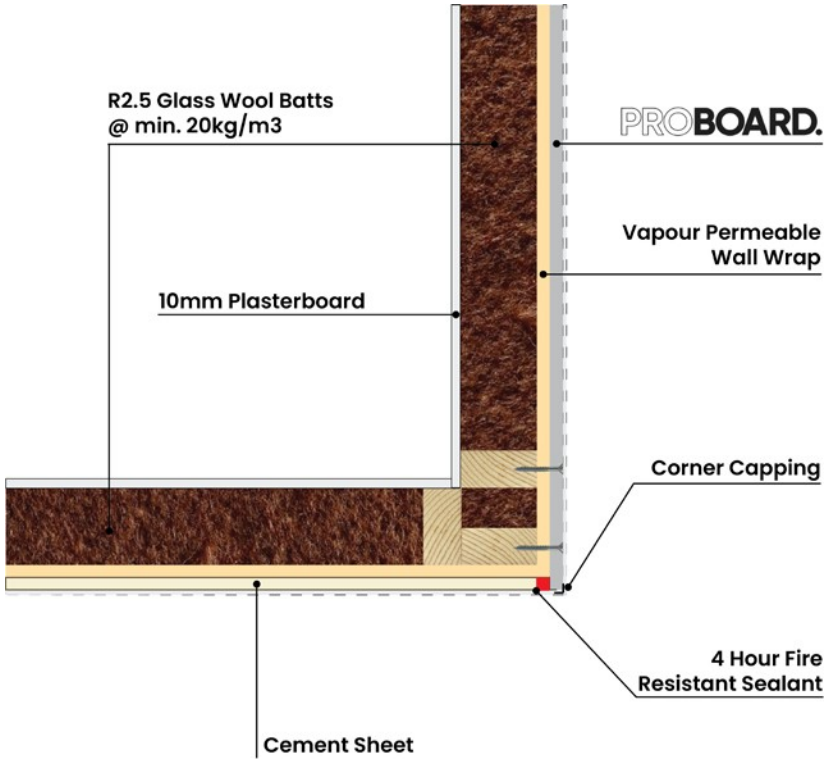


ProBoard Internal Corner D8

Typical Technical Drawings

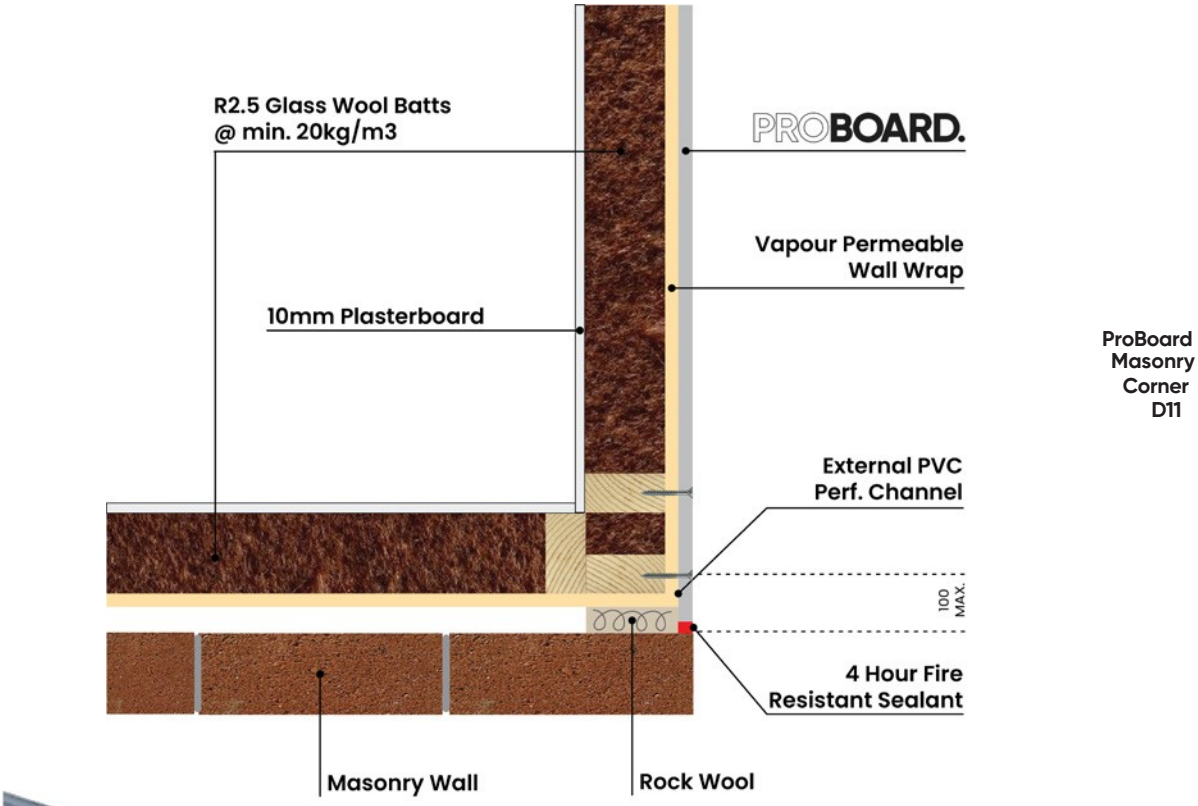


ProBoard
External
Corner
D9

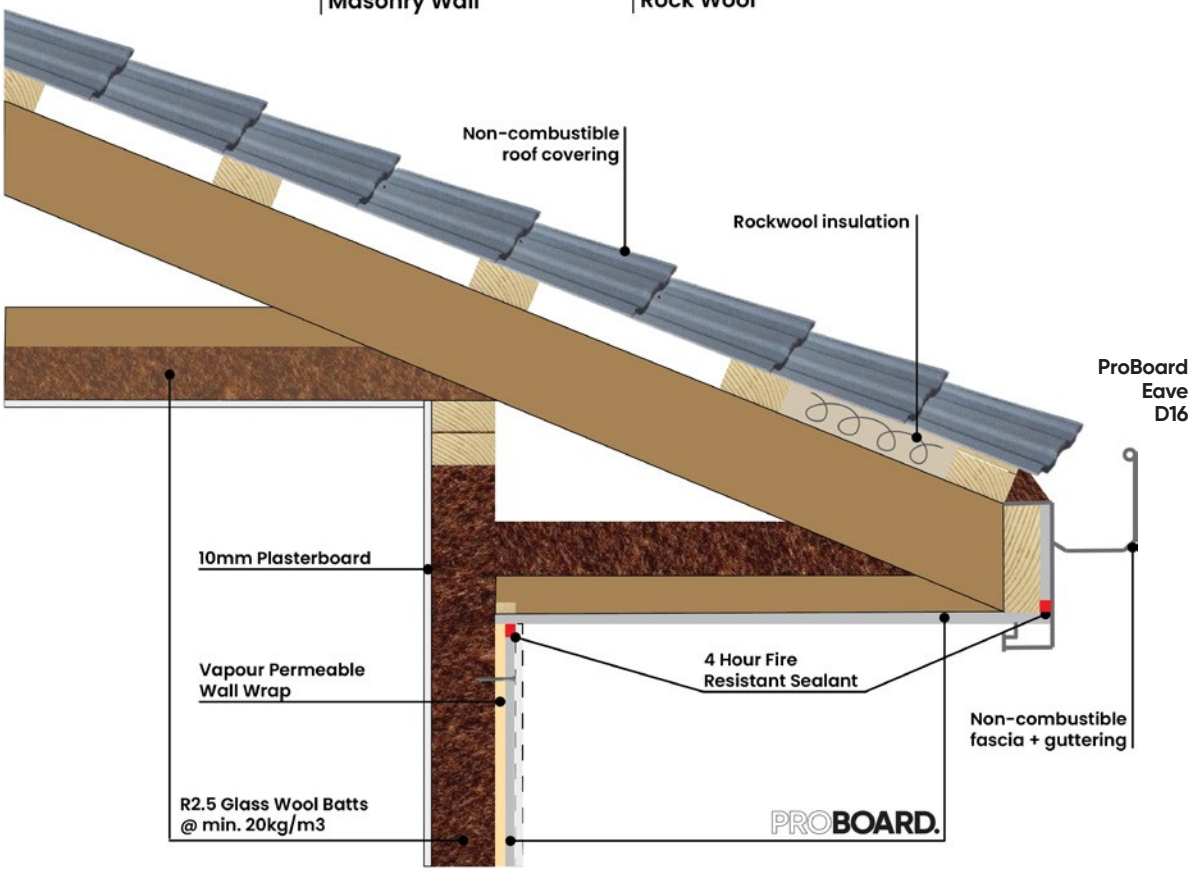


ProBoard External
Cladding Corner
D10

Typical Technical Drawings

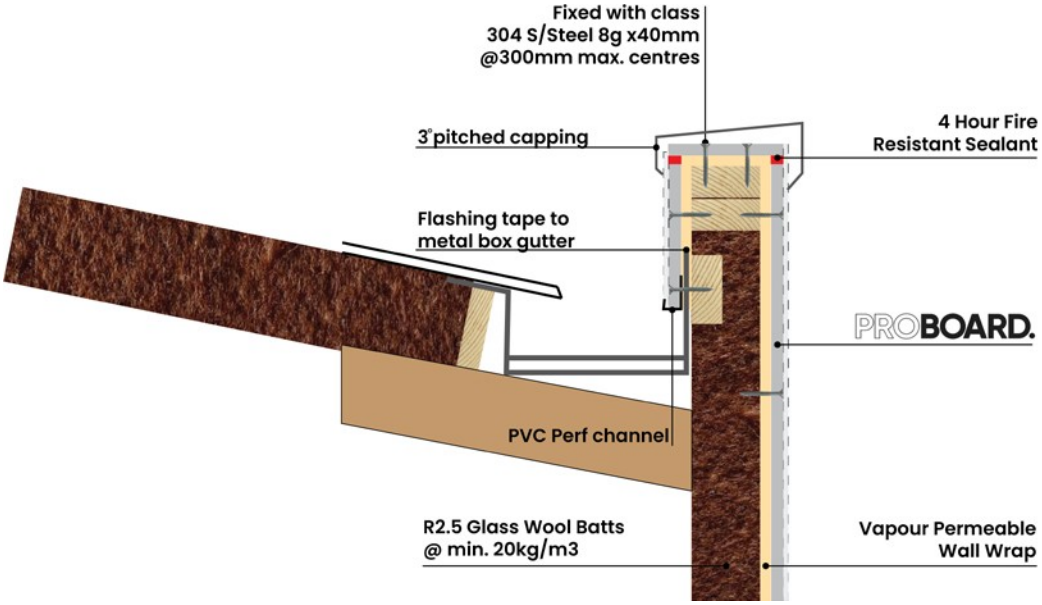


ProBoard
Masonry
Corner
D11

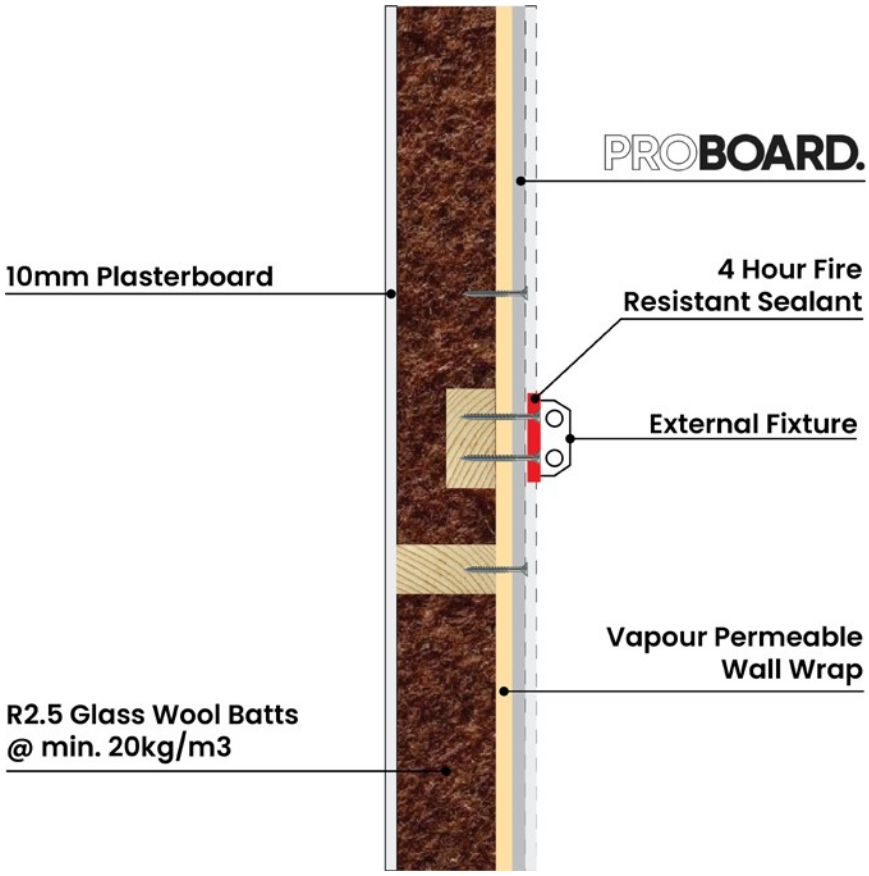


ProBoard
Eave
D16

Typical Technical Drawings

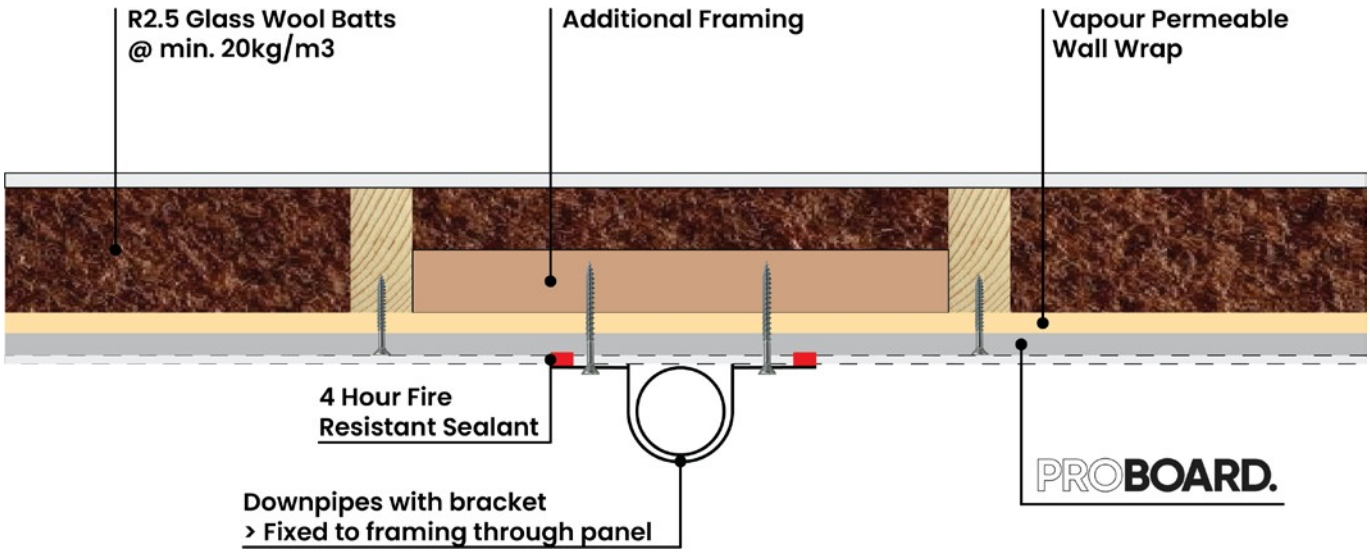


ProBoard
Box
Gutter
D17



ProBoard
External
Fixing
D19

Typical Technical Drawings



ProBoard Down Pipe D20

CodeMark Australia
Certificate CM40370
CMI Certification

PROBOARD.

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