

# Party Wall System

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DESIGN AND  
INSTALLATION  
GUIDE

50MM

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EDITION: JANUARY 2024





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# About Nasahi®

FOR THE PAST 20 YEARS NASAHI® HAVE BEEN ONE OF THE WORLD'S LARGEST PRODUCERS OF INNOVATIVE, HIGH QUALITY AAC MATERIALS.

We have become a world leader in the production of revolutionary building materials by investing over AUD\$60 million in the most technologically advanced processes in the industry. Our production facility has the capacity of 700,000 m<sup>3</sup> of AAC products per year, selling within China and exporting to Japan, Singapore, Malaysia, Vietnam, Philippines, UAE, Maldives, Russia, Angola, Australia, New Zealand etc. Our reputation for consistently producing high quality products is exceptional.

The Nasahi® range of building systems are regularly tested in Australia by NATA accredited laboratories. They are carefully engineered to comply with the requirements of the Building Code of Australia, and to remain at the cutting edge of product innovation.

Nasahi®'s in-house engineers provide project specific guidance, assisting with custom projects and bringing your ideas to life.

With warehouses located in every state of Australia, Nasahi® can easily meet demands and quickly deliver to site.

Our ISO 9001 and JIS A 5416 manufacturing processes are audited annually by independent authorities. This ensures that we meet the needs of our customers and other stakeholders while complying with statutory and regulatory requirements.

By *Building Smarter* we provide a guarantee you can trust.

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# Autoclaved Aerated Concrete (AAC)

AUTOCLAVED AERATED CONCRETE IS A LIGHTWEIGHT PRE-CAST CONCRETE BUILDING MATERIAL THAT PROVIDES EXCELLENT STRUCTURAL, THERMAL, FIRE, TERMITE AND MOULD-RESISTANCE.

AAC is manufactured from cement, sand, lime and water; it is aerated by adding an expanding agent to the mix. The mix is poured into a large mould and allowed to rise. These large soft blocks are sliced into the required panel sizes and are then cured in a steam pressure autoclave for up to 12 hours.

The result is a concrete panel filled with small, finely dispersed air bubbles, which is both strong and lightweight.

Embedded corrosion protected steel mesh inside the panels provide excellent strength when installed as internal walls or over a load bearing timber or steel frame.

Panels are supplied in a standard width of 600mm and a length of 2200mm and can easily be cut to size allowing fast and strong installation.

Nasahi® Panels are designed to provide a superior wall cladding solution with the feel of concrete at a significantly reduced cost.

Partition wall with excellent airborne noise transmission properties result in a quieter, more comfortable home for your family.

Manufactured from lightweight, reinforced, autoclaved aerated concrete, Nasahi® Panels have a Design (Working) Density of 590 kg/m<sup>3</sup> and a Dry Density of 525 kg/m<sup>3</sup> making them highly resistant to chipping and damage during delivery and handling.

Table 1 - Panel Weight (2200x600mm panel)

Thickness	50mm
Working Panel weight (590kg/m <sup>3</sup> at 12.4% moisture content)	39kg

*Nasahi® AAC Panels can also be used for Flooring, External Walls and Fences (see other Nasahi® Design Manuals for these applications.)*





1  
5  
2  
8

SPRINKLER  
CONTROL  
VALVE







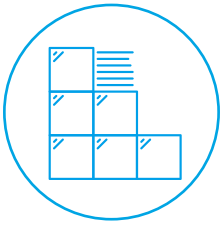
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# Advantages of Nasahi®



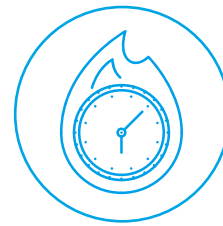
## QUICK INSTALLATION

3 qualified tradespeople can easily install 50m<sup>2</sup> of Nasahi® Panel per day, making it significantly faster and less labour intensive than traditional masonry



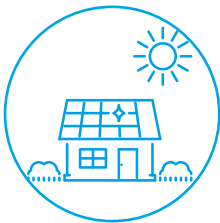
## TRANSPORTABLE

Panels are flat packed in packs of up to 20 improving transportability to and around site.



## FIRE RESISTANT

Nasahi® Panels are non-combustible and are compliant as party walls in all Australian regions. Nasahi® Panels have been rigorously tested and will provide an FRL of up to 60/60/60 using standard 10mm plasterboard internal lining or 90/90/90 when including 16mm fire rated plasterboard in areas where there are discontinuities in 10mm plasterboard wall linings.



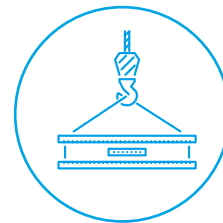
## THERMAL COMFORT

Nasahi® Systems achieve high thermal ratings and meet the NCC Energy Efficiency requirements for Australian Climate Zones.



## QUIET

The Nasahi® Panel's unique aerated construction provides the thermal performance of a lightweight system while delivering excellent acoustic performance like a dense masonry product.



## LIGHTWEIGHT AND STRONG

Nasahi® Panels weigh less than standard concrete masonry, making it convenient, lightweight, and easy to work with. Strength is provided by corrosion protected internal steel reinforcing mesh.

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# Design Process

THIS INSTALLATION GUIDE SPECIFIES DESIGN PRINCIPLES FOR THE NASAHI® PARTY WALL SYSTEM THAT COMPLY WITH THE PERFORMANCE REQUIREMENTS OF THE NCC AT THE TIME OF WRITING. THE DESIGNER MUST CHECK THE ADEQUACY OF THE BUILDING SOLUTION FOR COMPLIANCE WITH THE APPROPRIATE AUTHORITY.

Internal wind loads experienced by the panels, fasteners and supporting frame must be designed in accordance with the relevant Australian Standards for the site specific loads.

## STAGE 1

Determine the site wind load requirements including wind category, terrain category, topography and other factors that are required to calculate the wind pressures acting on the internal walls.

## STAGE 2

Identify whether other NCC performance requirements apply to your project. These typically include fire resistance levels and acoustic performance.

## STAGE 3

Select the appropriate configuration in this guide to meet the requirements outlined in Stages 1 and 2.

## STAGE 4

Complete the detailed design, and determine the number of panels and accessories required for the project.

## FRAMING DESIGN

The load-bearing stud frame must be designed in accordance with the specific framing codes for timber or steel frames.

### Timber Frames

Timber framing must be designed in accordance with the relevant parts of AS1720.1 and/or AS1684. Stud spacing and height should be sized to suit wind loads in accordance with local codes. Noggins must be flush fitted at a maximum of 1350mm centre spacing.

### Steel Frames

Steel framing must comply with AS/NZS4600. For steel framing the minimum framing specification is 'C' section studs and noggins of overall section size 51mm web. Minimum Steel thickness must be 0.75mm in accordance with AS/NZ4600.



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# Design Detail Considerations

## PENETRATIONS

A service supply pipe must only be installed in the cavity of a discontinuous construction; and in the case of a pipe that serves only one sole occupancy unit, not be fixed to the wall leaf on the side adjoining any other sole-occupancy unit and have a clearance of not less than 10mm to the other wall leaf.

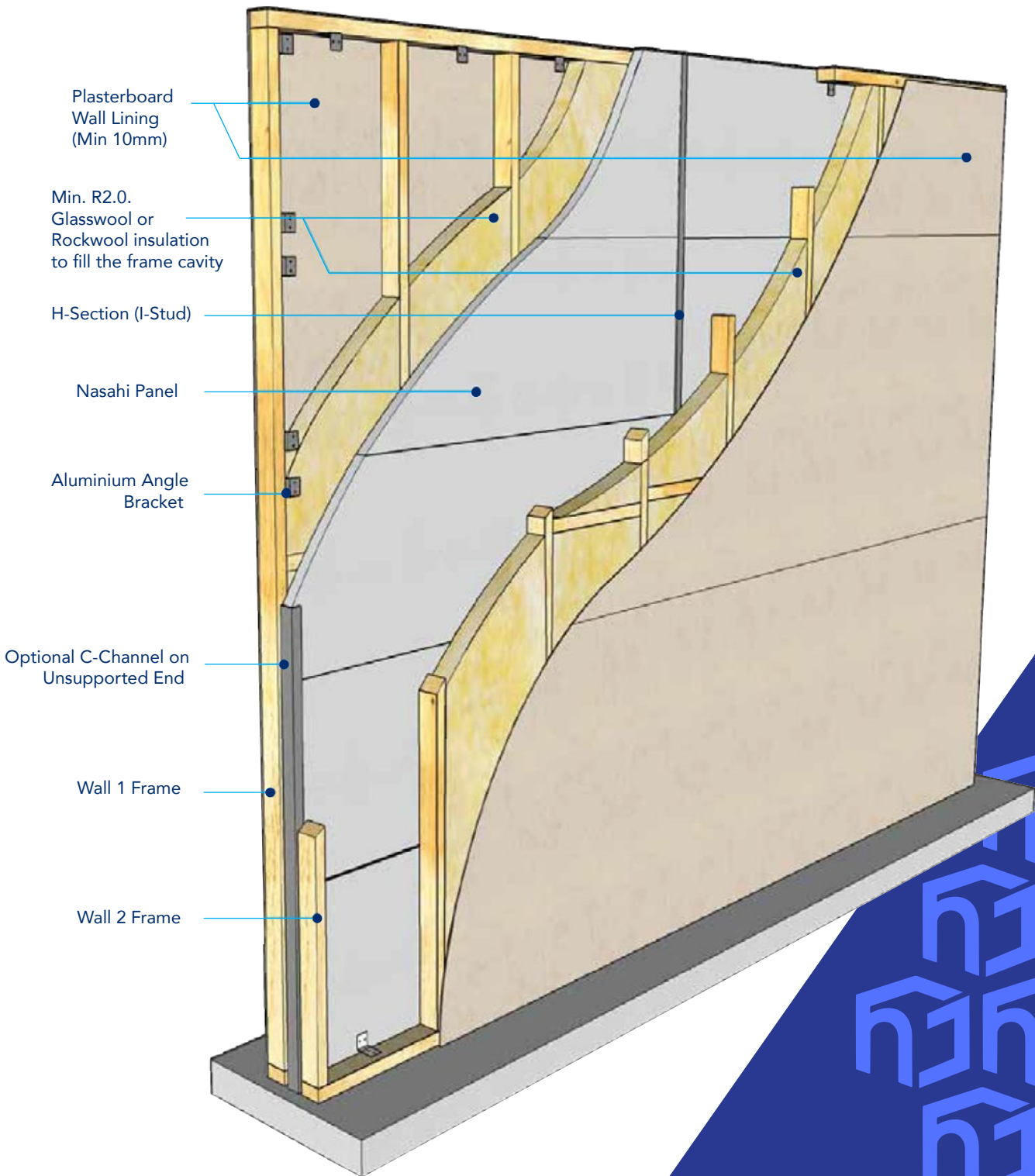
Electrical outlets and taps may penetrate through plasterboard internal linings.

Penetrations through the fire rated Nasahi® Party Wall System wall are outside the scope of this guide. A fire engineer must be consulted to approve any changes.



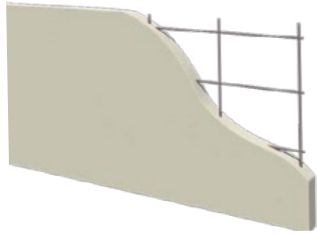


# Nasahi® Party Wall System Overview



# Party Wall System Components

Table 2 - System Components for Timber and Steel Frame

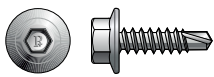


## NASAHI® PANELS

Nasahi® Panels are manufactured from Autoclaved Aerated Concrete (AAC), embedded with coated steel reinforcing mesh, in a standard width of 600mm and a length of 2200mm.

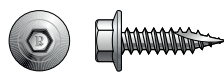
THICKNESS	50MM
Dry Panel weight (525kg/m <sup>3</sup> )	36kg
Working Panel weight (590kg/m <sup>3</sup> )	39kg

## FASTENERS



### Angle Bracket into Steel Frames

10-16 x 20mm Hex Head Self-Drilling Class 3 Screws



### Angle Bracket to Timber Frames

12-11 x 25mm Hex Head Type 17 Class 3 screws



### Angle Bracket to Nasahi® Panels

12G x 45mm Hex Head Type 17, Class 3 Screws

*Note:* Minimum embedment of 40mm into Nasahi® Panels.



### ALUMINIUM ANGLE BRACKET

The Nasahi® aluminium angle bracket is used to attach Nasahi® Panels to the periphery of the timber or steel frame.

**75mm x 45mm x 50mm**

**BMT = 1.5 mm**

Each angle bracket requires 2 fixings in panel and 2 fixings into frame.



### NASAHI® H-SECTION (I-STUD)

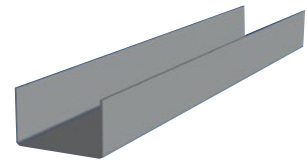
Galvanised steel H-Section (I-Stud)

**51mm x 35mm**

**BMT = 0.55mm**

Used to join horizontal walls longer than 2200mm.

**Note:** H-Sections must be propped/supported during construction to resist wind loads.



### NASAHI® C-CHANNEL

Optional galvanised steel C-Channel

**51mm x 35mm**

**BMT = 0.55mm**

Used as Party Wall base as shown in Detail 3.1 on Page 33 and/or to align Nasahi® Panels at wall ends.

**Note:** Fire rated caulking to one side of c-channel as per detail 3.1A.



### INSULATION

Provide wall insulation between each stud to achieve the required R-value, refer to the thermal values section of this manual. Insulation must be non-combustible and conform with the requirements of AS/NZS 4859.1:2018.

**Note:** Minimum R2.0 Glass wool or mineral wool insulation that fills the cavity must be used to fulfill Thermal requirements.



### FIRE RESISTANT MINERAL WOOL

A non-combustible, moisture-resistant, non-corrosive, non-deteriorating, mildew-proof and vermin-proof mineral wool must be used to provide fire protection in party wall constructions as shown in the drawings.



### 16MM FIRE RATED PLASTERBOARD

For a 90/90/90 FRL applications, 16mm Fire Rated Plasterboard must be installed 150mm above and below floor joist width and the full coverage in roof space areas as shown in Detail 2.2 on page 32.



### ADHESIVE

Nasahi® Adhesive comes in 20kg bags and is used to glue and seal panel joints, and to fill screw heads.



### TOUCH-UP PAINT

If Nasahi® Panels are cut to size, all exposed reinforcing steel must be treated with Nasahi® Corrosion Protection Touch-up Paint in accordance with the instructions on the container.



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# System Performance

## STRUCTURAL

The Nasahi® Party Wall System is a non load bearing system that is designed to act as a fire rated acoustic intertenancy wall installed onto a load-bearing timber or steel frame.

### Panel Weight

Panels must be base supported and installed onto a thin bed of adhesive or into a C-track. Under no circumstances are panels to be suspended from the frame.

## INTERNAL WIND PRESSURE

Internal pressure is a function of the relative permeability of the external building surfaces including windows and doors, and should be calculated in accordance with AS/NZS 1170.2. The Nasahi® Party Wall System has been designed to withstand typical internal pressures of up to 0.39kPa. For greater pressures please contact Nasahi® engineering support.

## THERMAL PERFORMANCE

The R-Value of the bare Nasahi 50mm AAC panel is 0.39 (m<sup>2</sup>.K/W).

The overall Total R-value based on the worst case scenario for the Nasahi Party wall system is 3.8 Winter and 3.6 Summer. See below worst case scenario inputs.

- 76mm steel studs at 450mm c/c
- R2.0 Glasswool 70mm Batts
- 10mm Std Plasterboard.

☐ Reference: Wall Calculation W210517a, Acronem Consulting Australia, Dated 4th May 2021.

## FIRE RESISTANCE

When tested to AS1530.4 the systems outlined in this guide meet the performance requirements of the NCC and provide a Fire Resistance Level (FRL) of:

-/120/90

When installed from concrete floors to ceilings up to 3m height.

90/90/90

Up to 10m wall height.

60/60/60

Up to 15m wall height.

Nasahi® Panels have been tested to AS/NZS1530.1 to show non-combustibility, and when exposed to fire Nasahi® Panels do not emit any toxic gases or vapours.

If higher levels of fire resistance are required please contact Nasahi® for project specific engineering support.

☐ Reference: Warringtonfire, Fire assessment report 39410000 R9.1, dated 22 August 2023.

☐ Reference: TC Fire Engineering, TCFE0014 Letter of Opinion V6, Dated 22 August 2023.

# Acoustic Performance

The Nasahi® Party Wall System has been designed and verified by qualified acoustic engineers to provide excellent acoustic performance in low-rise multi-residential installations.

Walls in a Class 2 or 3 building separating sole occupancy units must have airborne sound insulation of  $R_w + C_{tr}$  greater than 50db, or a  $D_{nT,w} + C_{tr}$  of greater than 45dB. The Nasahi® Party Wall System exceeds this requirement, and by incorporating a 20mm discontinuity it complies with all relevant NCC requirements.

Table 2 - Nasahi® Party Wall System Acoustic Performance

NASAHI® SYSTEM	**VARIATION **	$R_w$ (Ctr)	SYSTEM DETAILS
P50-T70-01 P50-T90-02 P50-S76-03 P50-S92-04	70mm Timber 90mm Timber 76mm Steel 92mm Steel	61 (-14)* 60 (-8) 65 (-15) 66 (-13)	10mm Standard PB **Wall Frame** R2.0 Insulation 20mm cavity 50mm Nasahi® Panel 20mm cavity R2.0 Insulation **Wall Frame** 10mm Standard PB
P50-T90-05 P50-T90-06 P50-T90-07 P50-T90-08 P50-T90-09	13mm Standard PB 13mm Acoustic PB -/120/90 Fire Rated PB 10mm Water Resistant PB 6mm FC Sheet	59 (-4) 58 (-3) 59 (-4) 59 (-6) 64 (-8)	**Wall Lining** 90mm Timber Frame R2.0 Insulation 20mm cavity 50mm Nasahi® Panel 20mm cavity R2.0 Insulation **Wall Lining**

\*  $D_{nT,w}$  (Ctr) values reported for 70mm Timber Frames

□ Reference: TH736-01F02(R9) Renzo Tonin & Associates dated 6 Feb 2024.

□ Reference: TH736-01F03 Opinion Letter (R1), Renzo Tonin & Associates dated 12 Feb 2024.

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# Party Wall System Installation Process

## STAGE 1: PREPARATION

1. One wall frame must be completed prior to installation of the Nasahi® Party Wall System. A pre-installation check list is available on our website.

## STAGE 2: BASE PANEL INSTALLATION

2. Starting at an end, fix aluminium angle brackets: (a) At wall studs 2 brackets per panel; and (b) At the bottom and top plates at the spacings specified in Table 2 on Page 31.

3. Ensure a minimum 20mm cavity is maintained between the frame and the Nasahi® Panel. Apply either a thin bed of Nasahi® Panel Adhesive on the slab, or fix C-Channel track to slab using appropriate anchors as shown in Detail 3.1 on Page 33.

4. Lay the base panel horizontally with the long edge on the slab and fix the panel to the installed angle brackets.

5. Check that the Nasahi® Panel is plumb and a minimum 20mm cavity is maintained between the panel and wall frame.

## STAGE 3: UPPER PANELS

6. Apply Nasahi® Panel Adhesive to the base panel horizontal edge.

7. Install the next panel on top of the base panel in a stacked-bond configuration, temporarily fixing it to the stud frame using an Angle Bracket. Ensure panels are joined as close as possible, and are fully sealed with Nasahi® Panel Adhesive.

## STAGE 4: WALLS LONGER THAN 2200MM

8. Install an H-section (I-Stud) to the unsupported panel ends as shown in Details 1.1 and 1.2 on Page 31.

9. Use a spirit level to ensure that the Nasahi® Panel is plumb and minimum 20mm cavity is maintained between panel and frame. Fix the I-section to the frame by installing aluminium Angle Brackets at the top plate and bottom plate of the wall.

10. Repeat Steps 6 to 11 until the wall run is complete.

11. An optional 'C'-channel may be installed at the wall run ends for additional panel alignment.

12. Seal any gaps around the Nasahi® Panel perimeter and the supporting building structure with fire-resistant mineral wool.

13. For a 90/90/90 FRL application, 16mm fire rated plasterboard must be installed in the floor joist zones and roof spaces as shown in Details 2.2 on Page 32.

## STAGE 5: WALL FRAME COMPLETION

14. Stand the next wall frame up to the Nasahi® Party Wall ensuring a minimum 20mm cavity is maintained.

15. Fix aluminium angles to the periphery of the wall frame. These serve to support the wall in the event of fire on the other side of the wall.

16. Remove temporary brackets and fixings from all locations except the periphery of the wall.

17. Services must not be fixed to or chased into Nasahi® Panels. Pipes serving only one sole occupancy unit must not be fixed to the wall leaf on the side adjoining any other sole occupancy unit and must have at least 10mm clearance to the other wall leaf.

**Note:** Construction actions which are a BCA requirement, will require the core (Panel/H-section/Clips) to be temporarily propped during construction to resist wind loads prior to completion.



Steel C-Channel to Align Panel Ends (Optional)

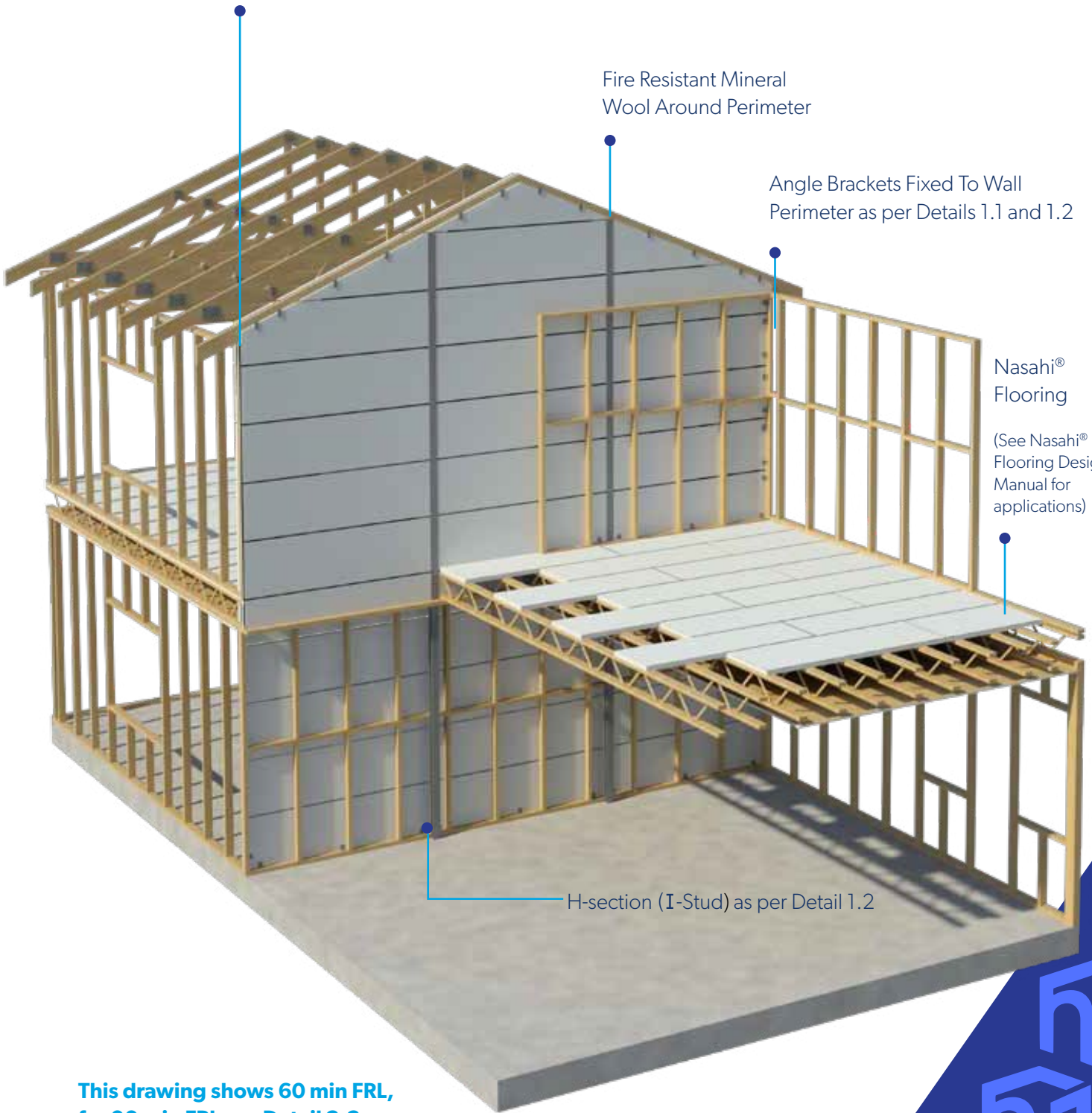
Fire Resistant Mineral Wool Around Perimeter

Angle Brackets Fixed To Wall Perimeter as per Details 1.1 and 1.2

Nasahi® Flooring

(See Nasahi® Flooring Design Manual for applications)

H-section (I-Stud) as per Detail 1.2



**This drawing shows 60 min FRL,  
for 90 min FRL see Detail 2.2  
on Page 32.**

*Note: Install min. R2.0 insulation and min. 10mm plasterboard with screws at maximum 400mm centers up the stud wall and as per manufacturers specifications.*

*Upon project completion, the installer must complete a Nasahi® Installation Compliance Certificate and submit to both Nasahi® and the builder for the system to be warranted.*

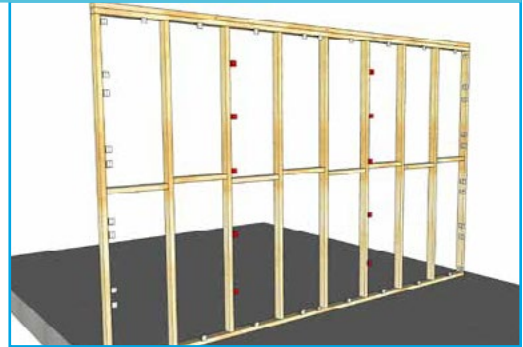
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# Party Wall System Installation Sequence

## 1: PREPARATION

- a. Check that the wall frame is complete.
- b. Cut panels to suit required wall dimensions. Coat all exposed reinforcing mesh with Nasahi® Corrosion Protection Touch-Up Paint.

**Note:** Construction actions which are a BCA requirement, will require the core (Panel/H-section/Clips) to be temporarily propped during construction to resist wind loads prior to completion.



## 2. BASE PANEL

- a. Fix the angle brackets to the periphery of the wall using the screws shown on Page 14, as per the below fixing positions:

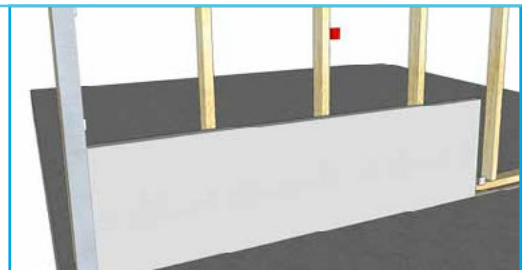
- Bottom and top plate at the spacings specified in Table 2 on Page 31.
- On the end studs, two per panel at 100mm from the panel edge.
- TEMPORARY brackets are shown in RED and are typically installed one stud back from end of panel, at panel centre height.

**Note 1:** Temporary brackets are typically installed one stud back from the end of the the panel, at panel Centre height.

**Note 2:** Temporary brackets MUST BE REMOVED before insulation is installed.

- b. Prepare base by either applying a bed of Nasahi® Adhesive on the slab or fix C-Channel track using appropriate anchors.

- c. Lay the first Nasahi® panel onto the slab ensuring it is level and fix to angle brackets using two 12G x 45mm Hex Head Screws.



## 3. UPPER PANELS

- a. Apply 2mm thick panel adhesive to horizontal edge of the Nasahi® panel.

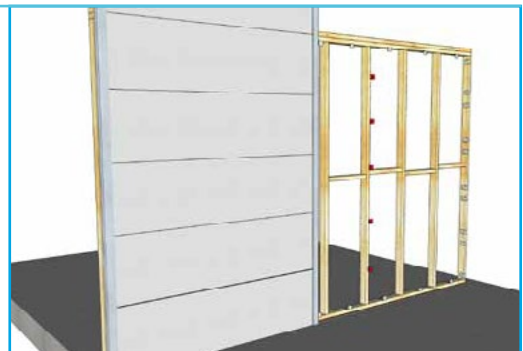
- b. Lay the next panel on top and fix to the angle brackets.

- c. For walls longer than 2200mm install the H-Section (I-Stud).

- d. Fix the H-Section (I-Stud) to the wall frame using angle brackets.

- e. Ensure Nasahi® Panels are plumb and have minimum cavity of 20mm from frame.

- f. Repeat steps (a) to (e) until the wall is complete. *Continued next page >*



### 3. UPPER PANELS (CONTINUED)

g. Where necessary fill any gaps around the Nasahi Panel and structure with Fire Resistance Mineral wool.

h. If an FRL of 90/90/90 is required, Install fire-rated plasterboard in floor joist zones and roof space as shown in Detail 2.2 on page 32.

### 4. COMPLETE FRAME

a. Stand up second frame ensuring a minimum 20mm cavity between panels is maintained.

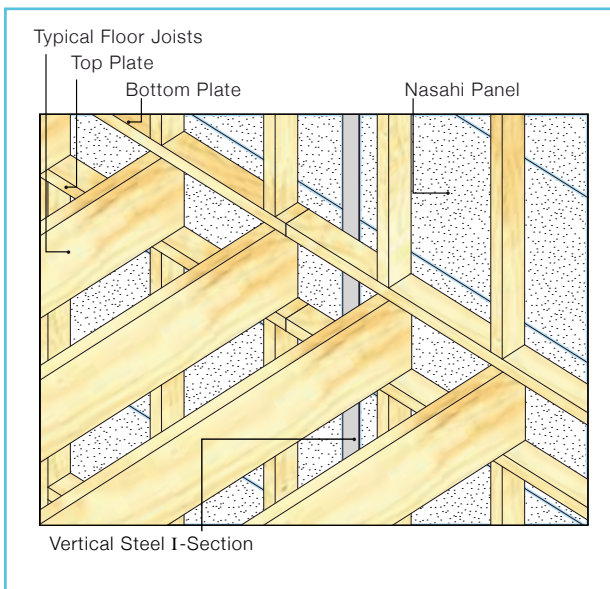
b. Fix panels to wall frame periphery using angled brackets.

c. Remove temporary panel brackets.

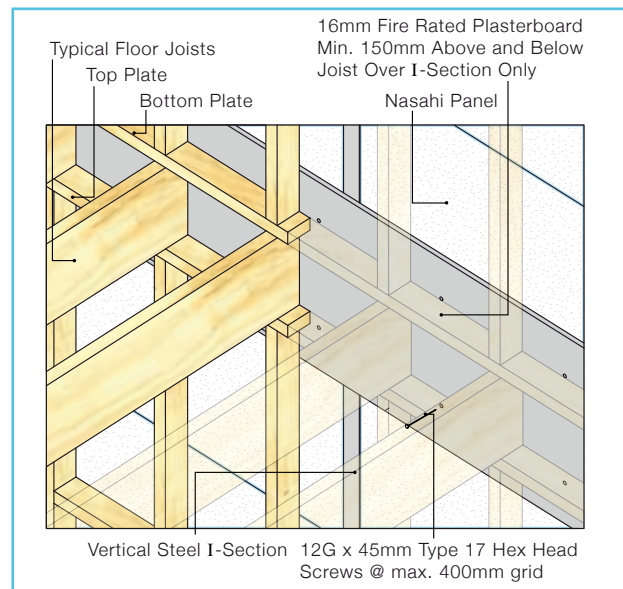


### FINISHING

a. Install min. R2.0 insulation and min. 10mm plasterboard with screws at maximum 400mm centers up the stud wall and as per manufacturers specifications.



*Figure 1: 60 Minute FRL Solution - No fire-check required.*



*Figure 2: 90 Minute FRL Solution - 16mm fire rated plasterboard installation in the floor joist zone and in the roof space zone.*



# Working with Nasahi® Panels

## CUTTING PANELS

NASAHİ® PANELS CAN EASILY BE CUT TO THE REQUIRED LENGTH, USING POWER OR HAND TOOLS.

Nasahi® Panels are delivered to site flat packed. The flat packs can be used as a cutting bench for other panels as required. Any reinforcement exposed during cutting must be coated with Nasahi® Corrosion Protection Touch up Paint.

Table 3 - Basic Tools required to Cut and Install NASAHİ® Panels

TOOL	USE	
SAW (WITH DIAMOND BLADE)	for cutting panels	
IMPACT DRIVER	for installation of panel fasteners	
DRILL	for drilling penetration holes	
VACUUM	for dust extraction purposes while cutting Nasahi® panels (Class M or H industrial vacuum)	
MIXING DRILL /MIXING BUCKETS	mixing Adhesive and render.	
HAWK AND STEEL TROWEL	for Spreading Adhesive and Rendering	
RASP (SANDING FLOAT)	for Panel sanding where required	

# Delivery & Handling

## DELIVERY

- Nasahi® Panels are delivered to site in flat packs of up to 20.
- Each pack has a wet mass of approximately 960kg, including packaging.
- Panel packs must only be stacked one pack high and must be properly supported on level ground.
- If packs are to be placed on any type of structure, always consult the project engineer to verify the structural adequacy of the structure.
- Nasahi® Panels should be stored on a level surface and never more than one pack high.

Table 4 - Panel Packs and Weight

ALL PANELS ARE FLAT PACKED		
THICKNESS	NO. OF PANELS	APPROX. WEIGHT PER PACK
50mm	20	960kg

## MANUAL HANDLING

To reduce the likelihood of damage, handling of Nasahi® Panels around site should be kept to a minimum. When lifting a panel, turn onto its long edge and support the weight by lifting with two people as shown below. Before lifting panels, a manual handling risk assessment must be performed to ensure personal injury risk is minimised. Packs should be unloaded as close as possible to the installation area; however, where this is not possible Nasahi® recommends the use of trolleys and/or other mechanical devices.



**DO NOT** Carry Nasahi® Panels FLAT



**ALWAYS** Carry Nasahi® Panels ON EDGE





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# Health & Safety

## HEALTH AND SAFETY

All quarry products, including bricks, concrete and Nasahi® Panels contain Crystalline Silica, or Silica Dust. Prolonged exposure to Silica Dust without the correct PPE can be harmful and potentially cause skin irritation and life-threatening health hazards such as bronchitis, silicosis and lung cancer.

Silica dust is generated when cutting, drilling or moving the panels.

The site should be cleaned of dust regularly and when using power tools these should be fitted with an efficient, well-maintained dust extraction system.

Nasahi® recommends the use of Class M or H industrial vacuum systems for dust extraction. These vacuums suitably capture the dust and also allow for disposal of the waste in a manner to minimise dust exposure.

Nasahi® Panels do not contain any additives that are known to cause health problems; however, because of the risk of exposure to Silica Dust it is recommended that the correct PPE is worn.

The Nasahi® External Wall System Installer is responsible for informing all employees of these Health and Safety requirements under the Occupational Health and Safety Act.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

When working with Nasahi® Panels, it is recommended that the following Australian compliant PPE is worn as a minimum:

- P1 or P2 Dust masks
- Protective glasses / goggles
- Ear Plugs / Ear Muffs – Class 5
- Gloves, long sleeve shirt and long pants
- Protective footwear



## HAZARDOUS MATERIALS

For MSDS of all components sold by Nasahi®, please visit our website [www.nasahi.net.au](http://www.nasahi.net.au).



# NCC Compliance



## NCC VOLUME ONE

Covers commercial, residential and public buildings defined as Class 2 to 9. Typical examples include multi-family dwellings, commercial and health buildings.

## NCC VOLUME TWO

Covers domestic constructions defined as Class 1 and 10. Typical examples include single-family dwellings, townhouses, houses and garages.

It is the responsibility of the builder to ensure the system is designed in accordance with this installation manual and that all site-specific performance provisions outlined in the relevant sections of the NCC are met.

The Nasahi® Party Wall System has been certified to meet the following provisions of the National Construction Code for Volume One and Volume Two as listed below:

Table 5 - NCC Compliance

	<b>VOLUME ONE</b>	<b>VOLUME TWO</b>
<b>Structural</b>	B1P1(1),(2) & B1P2*	H1P1(1),(2),(3)
<b>Fire</b>	C2D2, C2D10, C2D11*, C1P1*, C1P2*, C1P4* & C1P8*	H3D4, H3P1*
<b>Acoustic</b>	F7P2 & F7P4	H4P6
<b>Energy Efficiency</b>	J4D6*	13.2.5*

The Nasahi® CodeMark Certificate can be downloaded from our website.

**Note:**

\* The NCC compliance claims for C2D11, C1P1, C1P2, C1P4, C1P8, H3P1, J4D6, 13.2.5 are outside of the CodeMark certificate.





# Appendix



## MATERIAL PROPERTIES

Appendix Table 1 - Material Properties

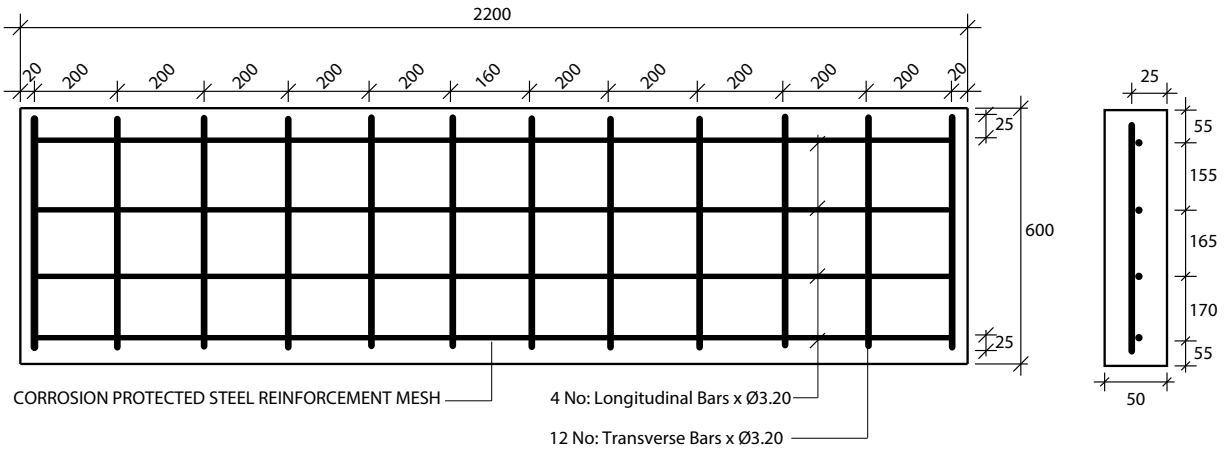
PROPERTY	STANDARD	VALUE	UNITS
Panel Thickness $d$		50	mm
Panel Width $w$		600	mm
Panel Length $L$		2200mm	
Panel edge profile		Square Edge	
AAC Dry Density, $\rho$	AS 5146.2 Appendix C	525	kg/m <sup>3</sup>
AAC Density for design, $\rho d$	AS 5146.2	590	kg/m <sup>3</sup>
AAC Density for transport and lifting, $\rho_{tran}$	AS 5146.2	775	kg/m <sup>3</sup>
AAC Characteristic Compressive Strength, $f_{ck}$	AS 5146.2 Appendix D	3.1	MPa
AAC Characteristic Flexural Strength, $f_{ut}$	AS 5146.2 Appendix E	0.50	MPa
Reinforcing yield stress	AS 4671	>500	MPa
Reinforcing tensile strength	AS 4671	>600	MPa
Reinforcing weld strength	AS 4671	>0.5 of force at yield of a longitudinal bar	
Design Serviceability Limit State Deflection Limit, max	AS 5146.1	SPAN/250	
Youngs Modulus (E)	AS5146.2:2018	1800	MPa

Note:

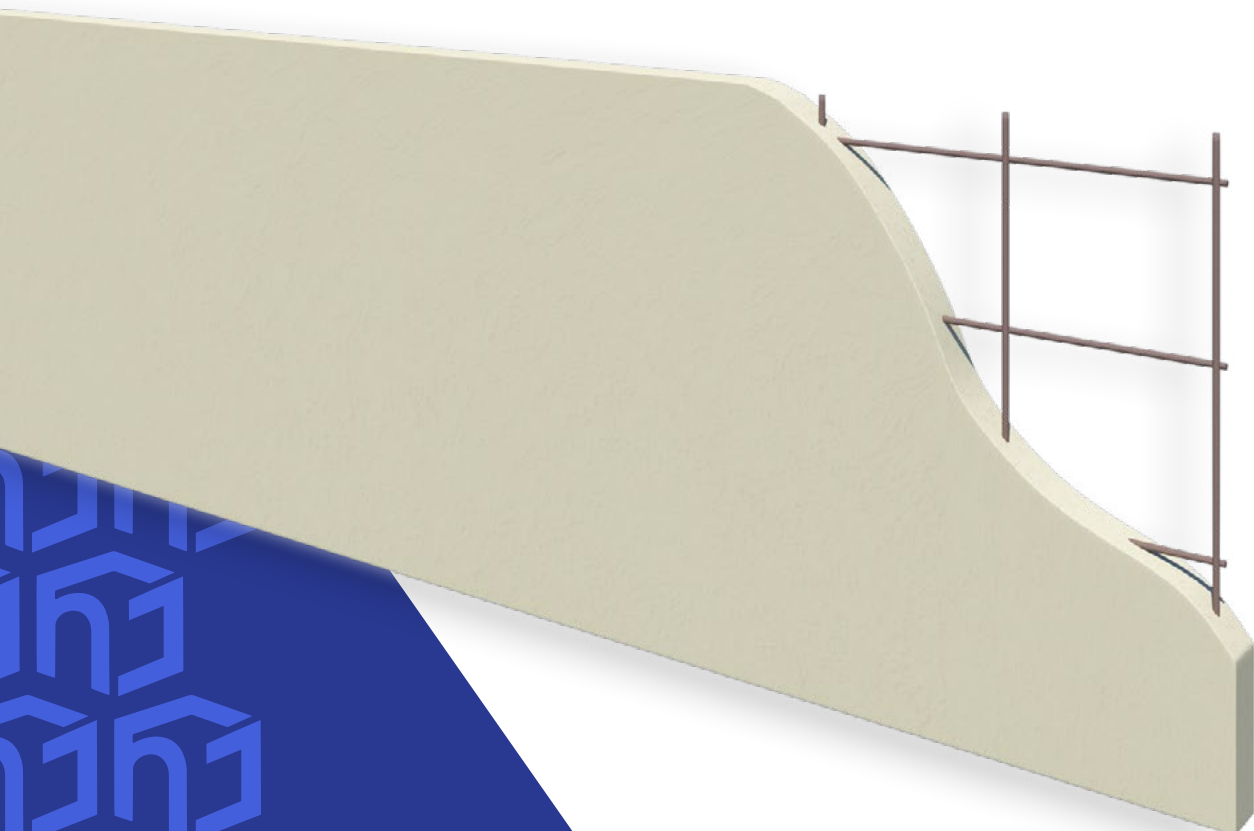
1. Dry density is achieved by oven drying specimens so that the moisture content is close to 0%.
2. A design density of 590kg/m<sup>3</sup> has been calculated using a 12.4% moisture content.

# PANEL REINFORCING LAYOUT

## 50MM THICK PANEL (50 X 600 X 2200)



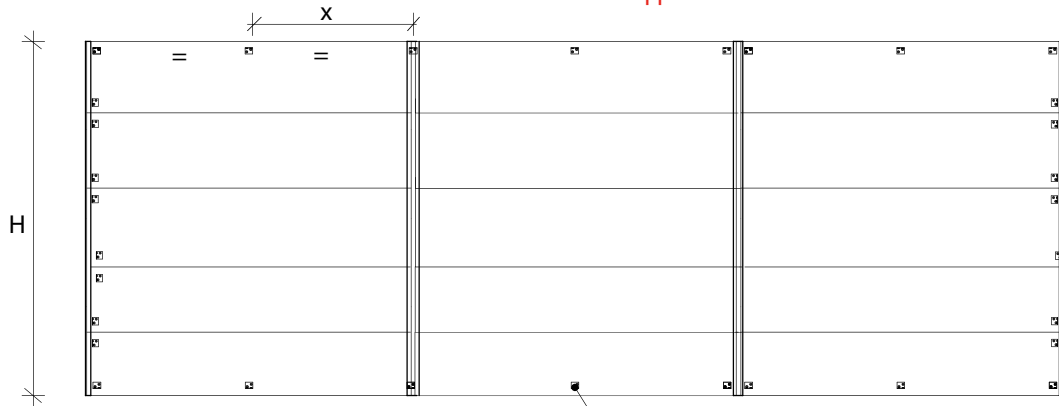
Reference Document Sharp and Howells Test report No: 19-0125B





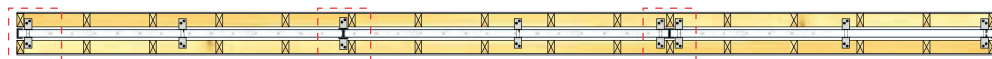
# DETAILED DRAWINGS

**NOTE: Aluminium Angle brackets must be fixed to the top and bottom plates as per the spacings listed in appendix Table 2 below.**



DETAIL 1.1: PARTY WALL LAYOUT

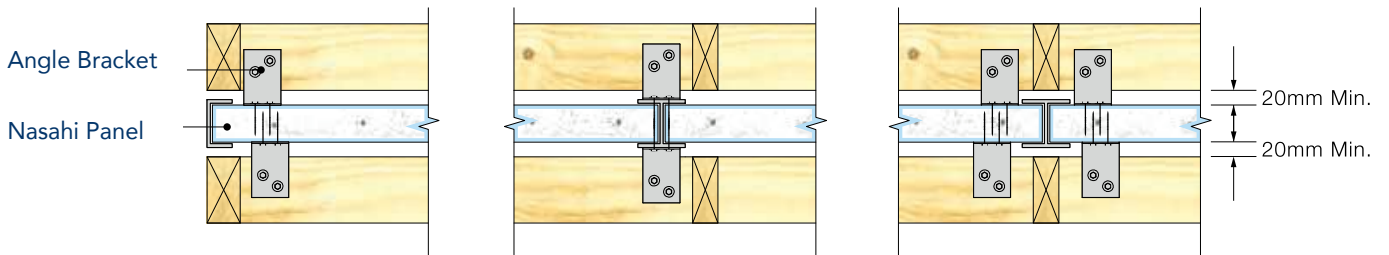
Each angle bracket requires 2 Fixings into Panels and 2 Fixings into Frame



End Detail (Optional C-Channel)

Panel Joint Option 1 (Fix through H-Section (I-Stud))

Panel Joint Option 2 (Fix Both Sides of H-Section (I-Stud))



See Page 33 for Optional C-Chanel fixing

• Angle brackets must be spaced in accordance with wind loads and FRL requirements as specified in this installation guide.

DETAIL 1.2: ANGLE BRACKET FIXING OPTIONS

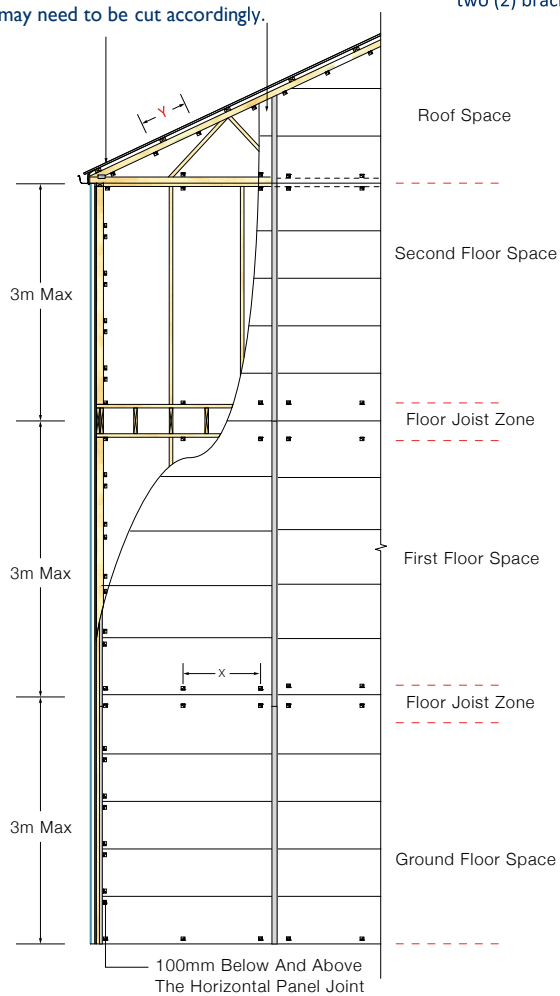
**Appendix Table 2:** FRL requirement fixing table. (Angle bracket spacing and maximum allowable wall height).

Wall Framing	Max. Wall Height (H)	Max. Vertical Space of Aluminium Bracket	Max. Horizontal Space of Aluminium Bracket (X)	FRL
Min. 70mm deep timber or 76mm steel framing	15m	3m	1100mm	60/60/60
	6.6m	3m	400mm	90/90/90
	10m	3m	250mm	90/90/90
Min. 70mm deep timber or min. 51mm deep steel framing	3m	3m	1100mm	-/120/90

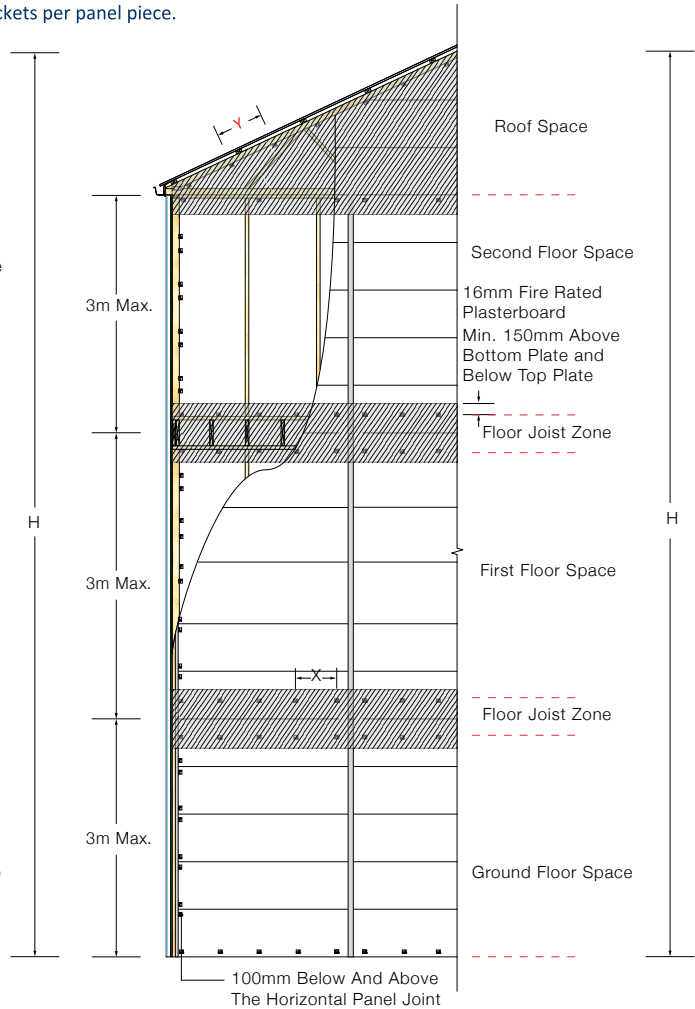
# DETAILED DRAWINGS

When restraining panels with a 'C' channel or 'H' section a minimum dimension of 75mm must be used. To achieve this, the panel below may need to be cut accordingly.

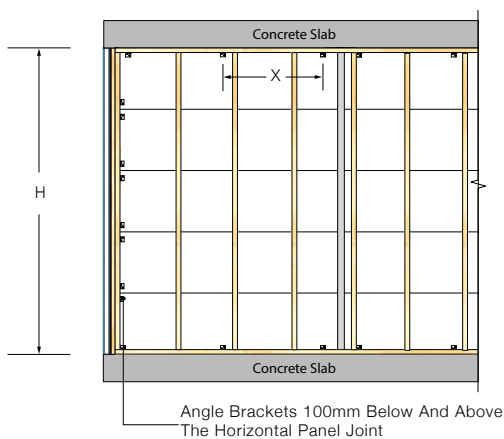
**Note: 'Y'** - All panels not restrained by a 'H' section and are less than 1100mm must be restrained by having two (2) brackets per panel piece.



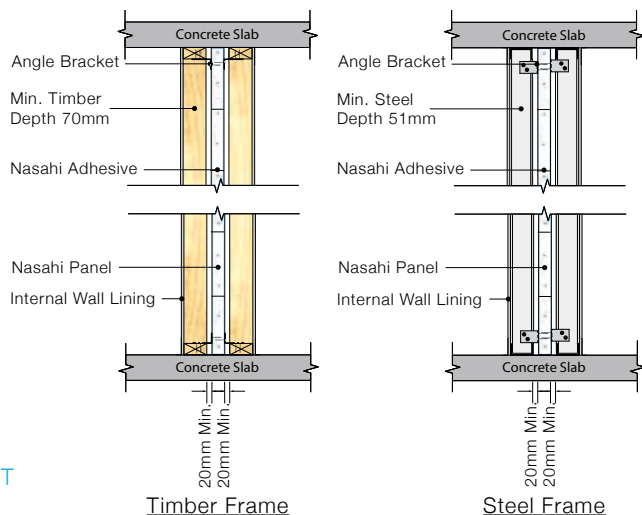
**DETAIL 2.1: MULTI-STOREY INSTALLATION (60 MINUTE FRL)**



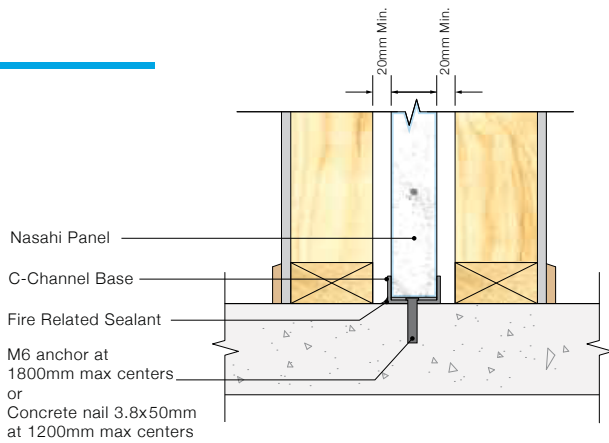
**DETAIL 2.2: MULTI-STOREY FIRE BOARD INSTALLATION (90 MINUTE FRL)**



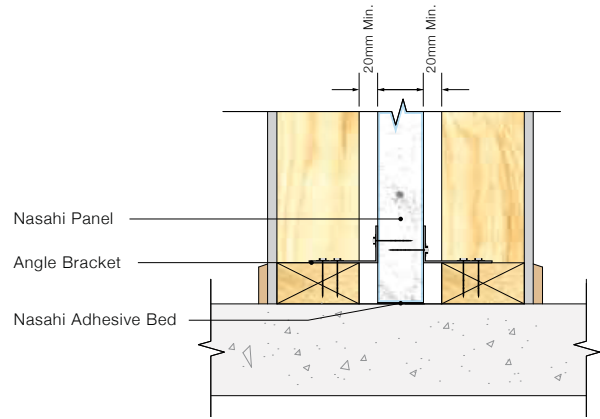
**DETAIL 2.3: CONCRETE FLOOR TO CONCRETE SOFFIT (FRL -/120/90)**



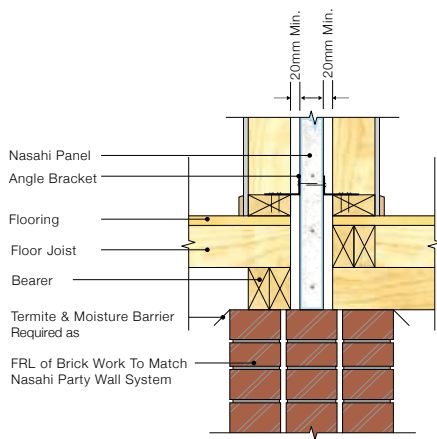
# DETAILED DRAWINGS



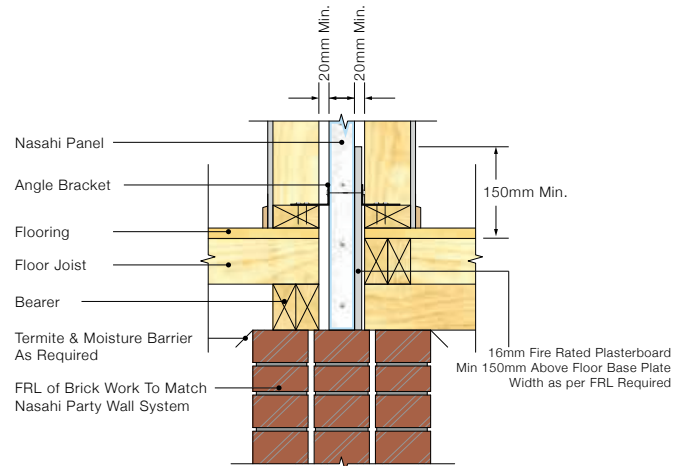
DETAIL 3.1A: PARTY WALL BASE - OPTION 1 (C-CHANNEL)



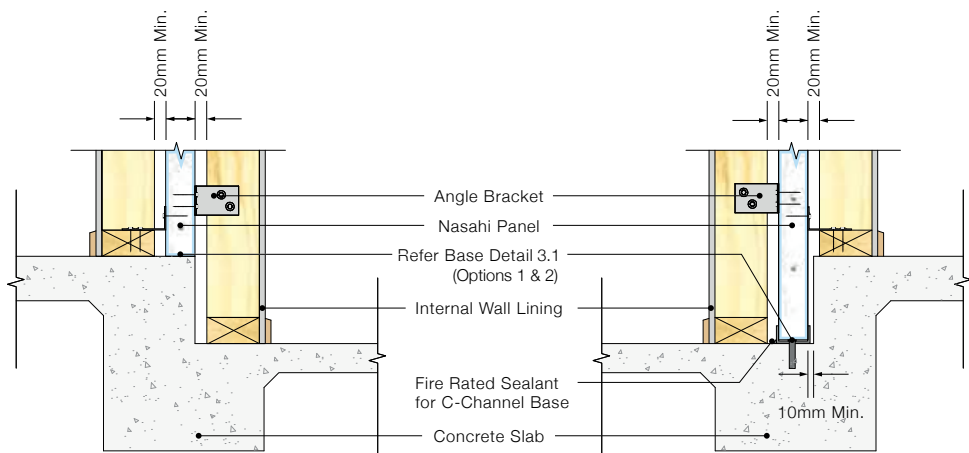
DETAIL 3.1B: PARTY WALL BASE - OPTION 2 (NASAHU ADHESIVE)



DETAIL 3.2A: MASONRY/STRIP FOOTING BASE (60Min FRL)



DETAIL 3.2B: MASONRY/STRIP FOOTING BASE (90Min FRL)

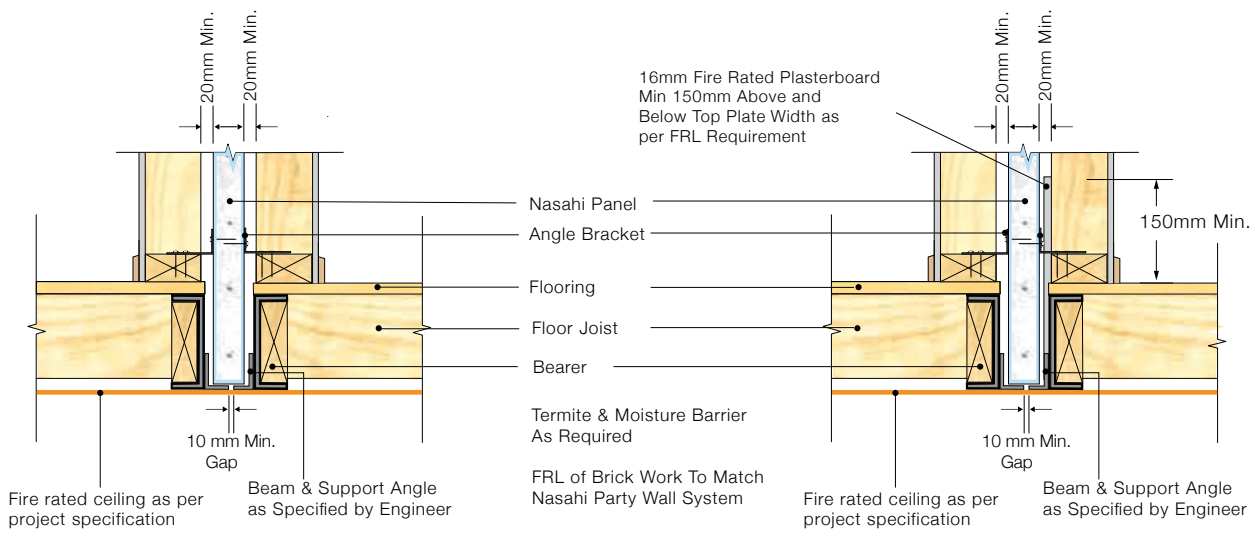


DETAIL 3.3: STEP IN SLAB (OPTION 1)

DETAIL 3.3: STEP IN SLAB (OPTION 2)

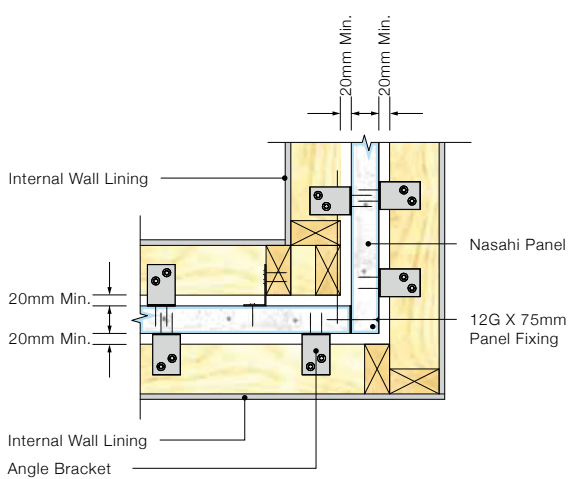


# DETAILED DRAWINGS

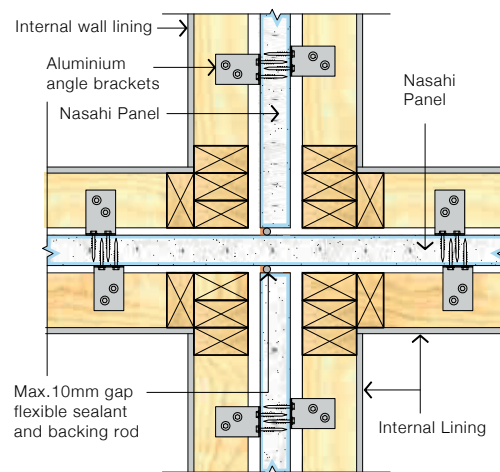


**DETAIL 3.4A: CANTILEVER BEAM  
PANEL SUPPORT (60Min)**

**DETAIL 3.4B: CANTILEVER BEAM  
PANEL SUPPORT (90Min)**

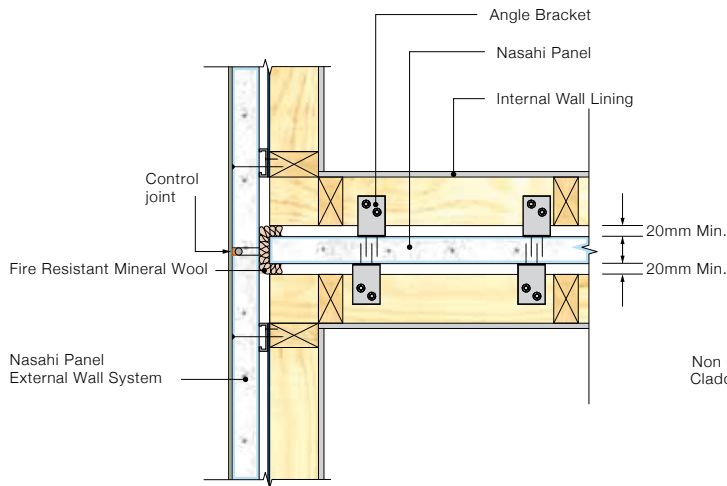


**DETAIL 3.5: TYPICAL PARTY WALL CORNER**

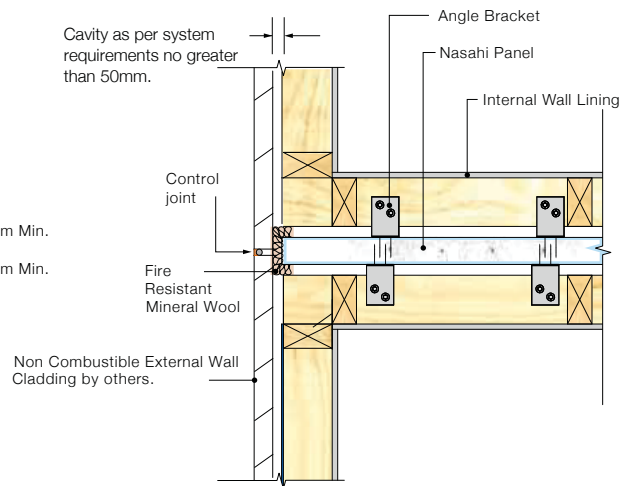


**DETAIL 3.6: PARTY WALL 4-WAY INTERSECTION**

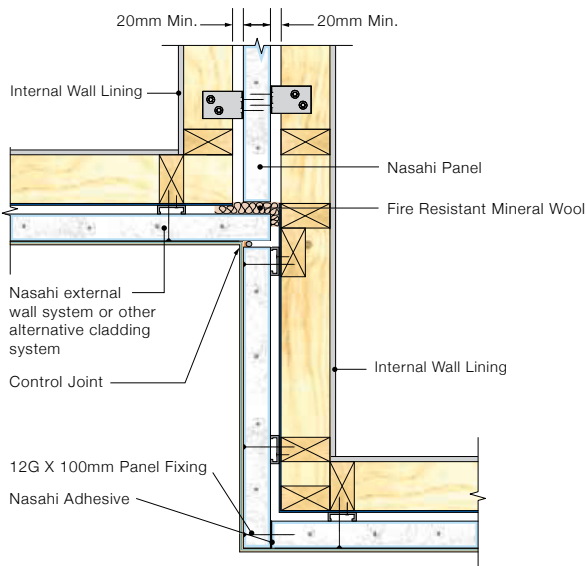
# DETAILED DRAWINGS



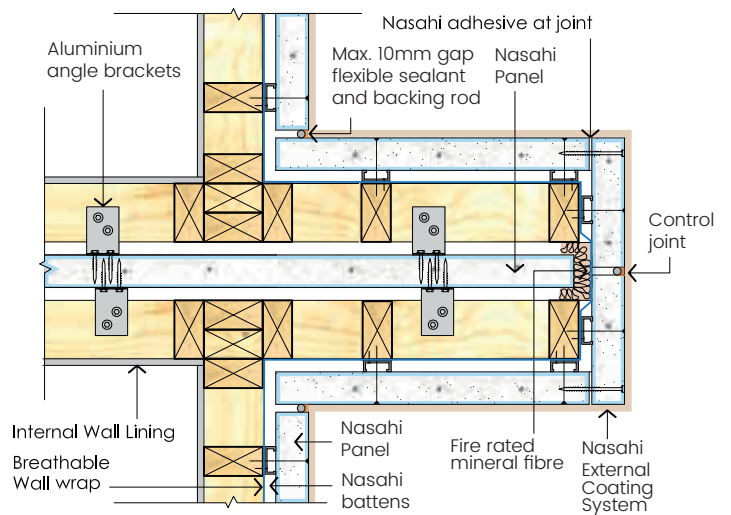
DETAIL 4.1: PARTY WALL TO EXTERNAL WALL JUNCTION



DETAIL 4.1A: PARTY WALL TO OTHER EXTERNAL WALL JUNCTION CLADDING

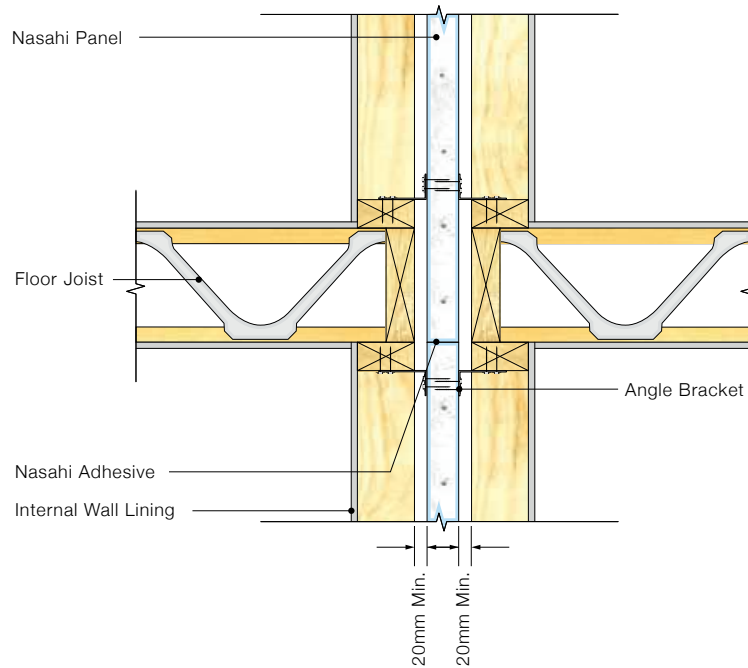


DETAIL 4.2: PARTY WALL TO EXTERNAL WALL JUNCTION

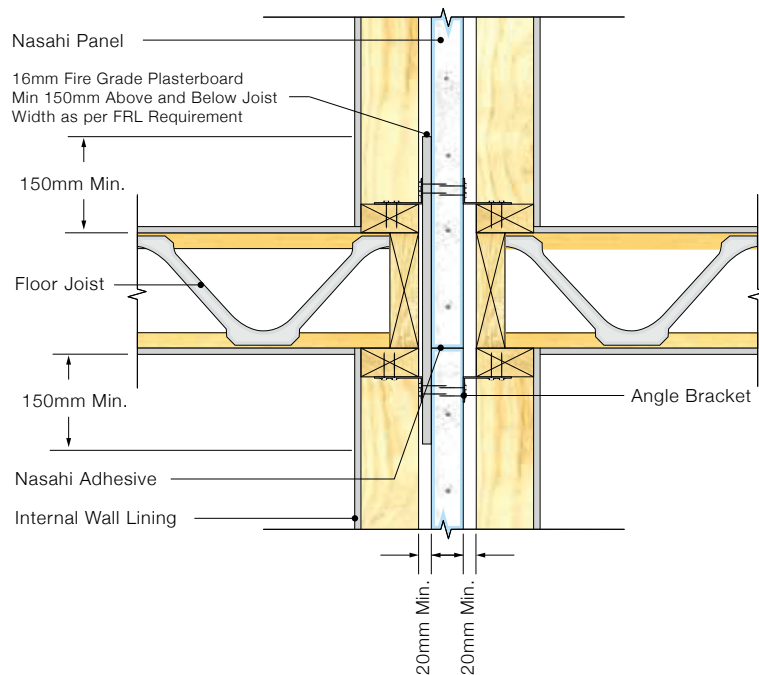


DETAIL 4.3: NIB OR BLADE WALL JUNCTION OF PARTY WALL AND EXTERNAL WALL SYSTEM

**Note:** The gap between the Nasahi Party Wall Panel and the External Wall shall not be more than 50 mm for Class 1 and 10a buildings (NCC 2022, Vol.2 H3D4 , ABCB Housing Provisions Part 9.3.1(4), and should be filled with fire resistant mineral wool.

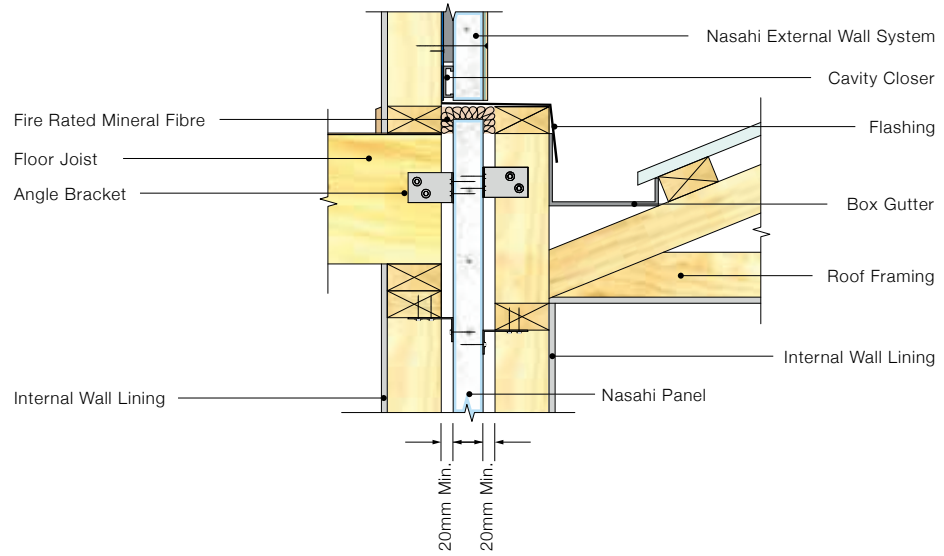


5.1A PARTY WALL TYPICAL WALL - 60 MIN FLOOR JUNCTION DETAIL - ELEVATION VIEW

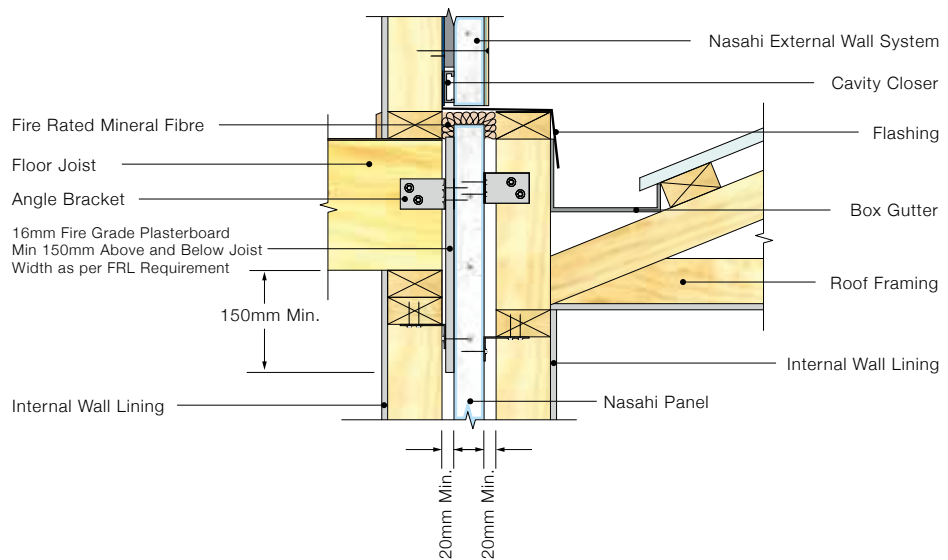


5.1B PARTY WALL TYPICAL WALL - 90 MIN FLOOR JUNCTION DETAIL - ELEVATION VIEW

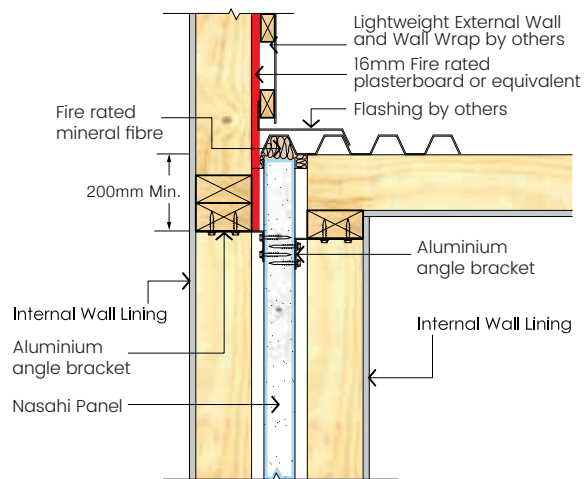




5.2A PARTY WALL (60MIN) TO EXTERNAL WALL TRANSITION

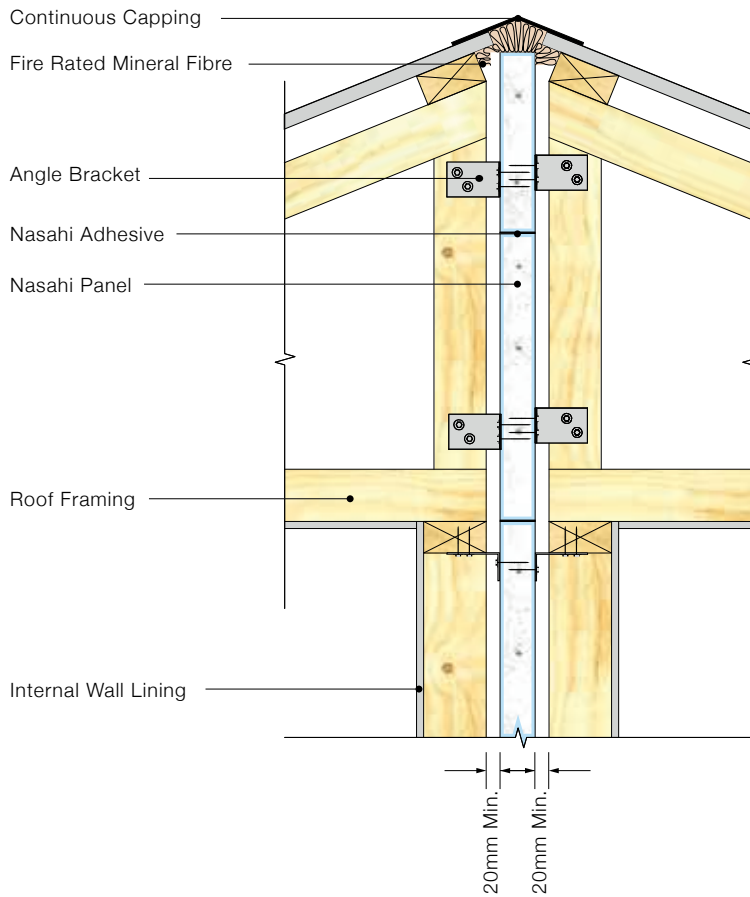


5.2B PARTY WALL (90MIN) TO EXTERNAL WALL TRANSITION

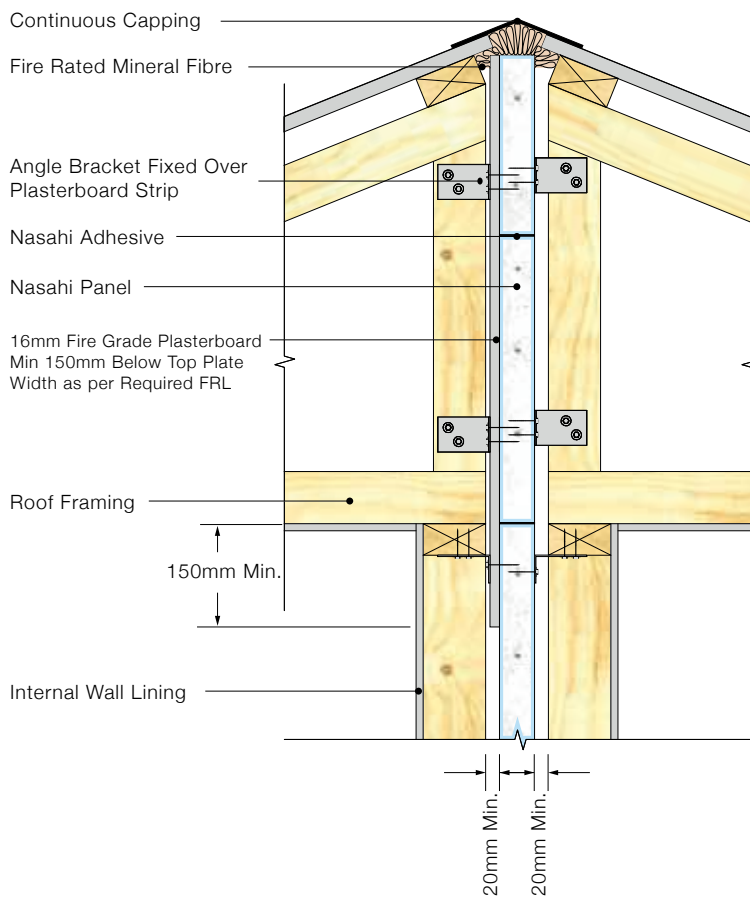


5.2C PARTY WALL TO OTHER LIGHTWEIGHT EXTERNAL CLADDING

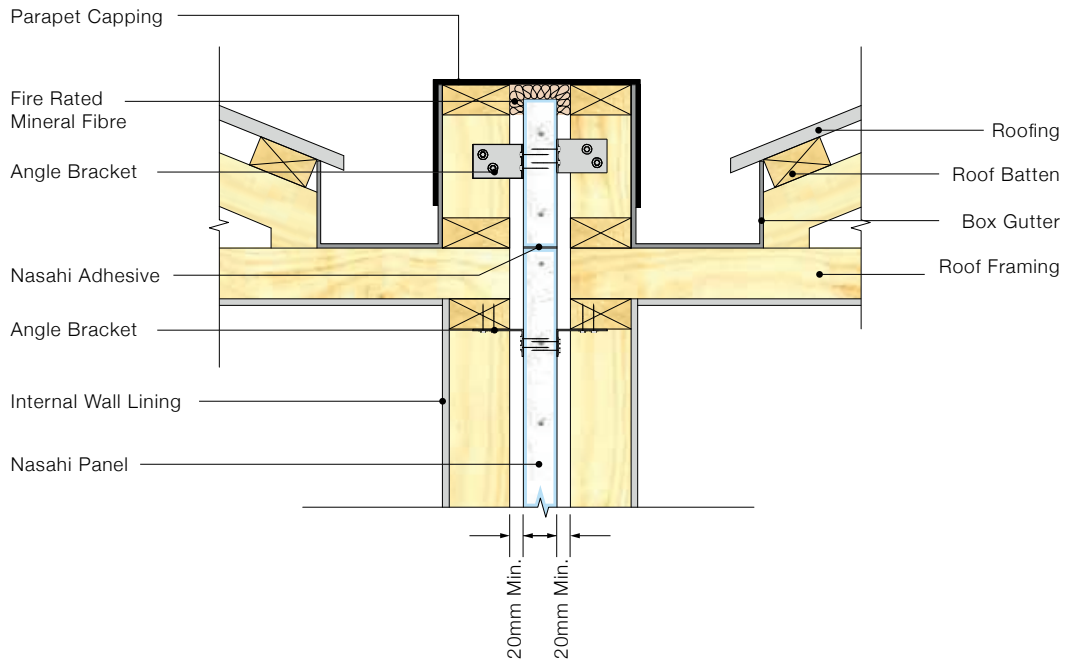
DETAILED DRAWINGS



6.1A PARTY WALL - 60 MIN PITCHED ROOF JUNCTION DET

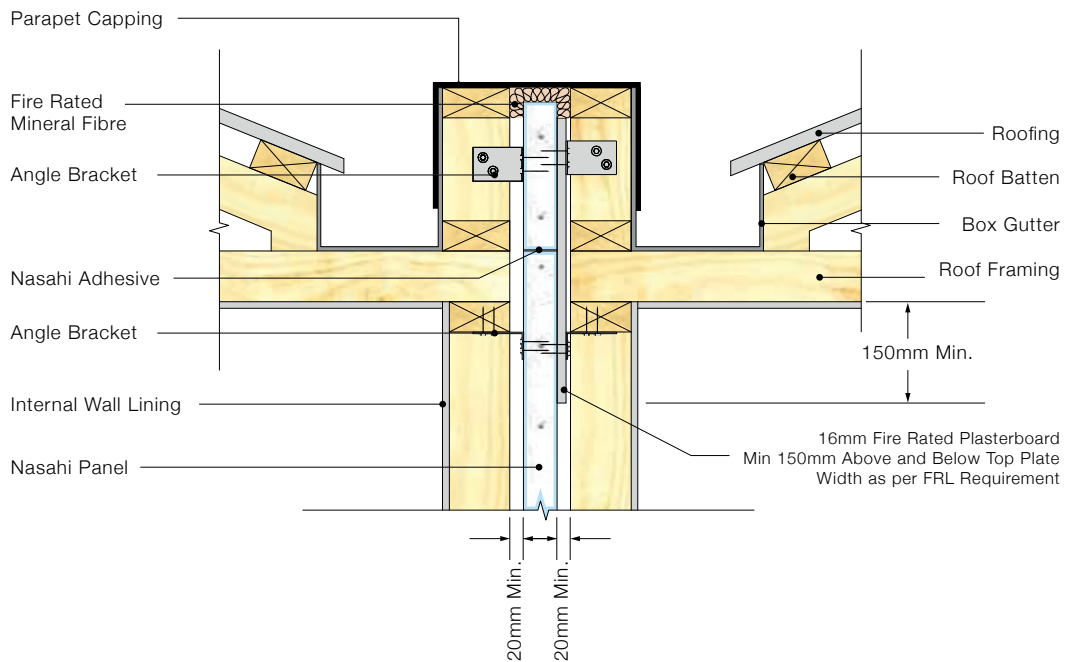


6.1B PARTY WALL - 90 MIN PITCHED ROOF JUNCTION DETAIL



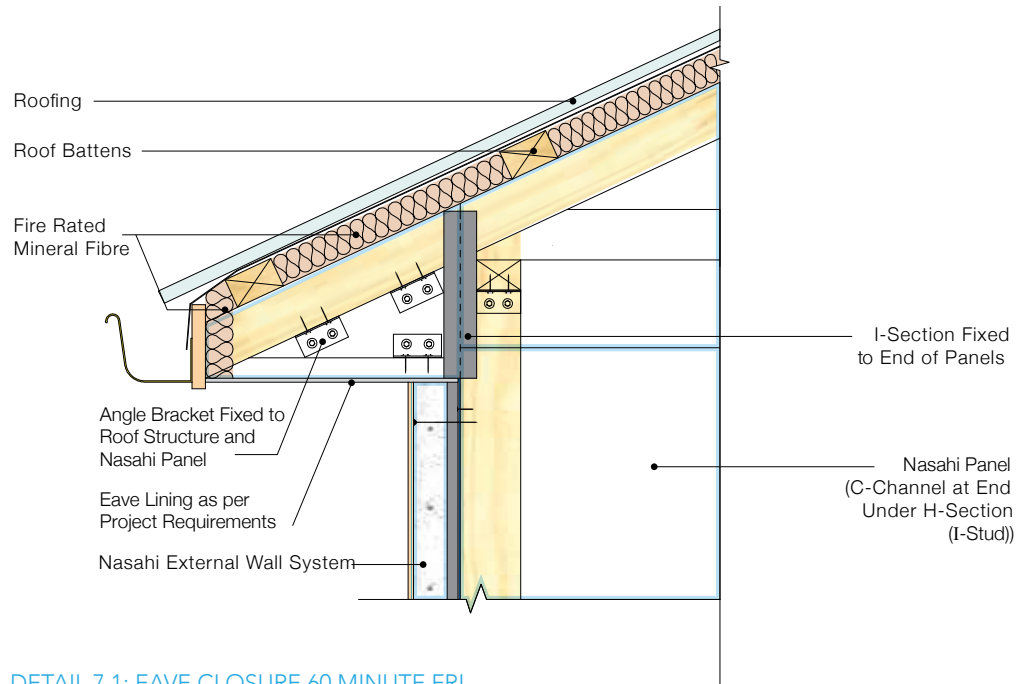
6.2A PARTY WALL - 60 MIN ROOF PARAPET JUNCTION DETAIL

**Note:** For 60 minute Fire Resistance Level (FRL), plasterboard installation in top plate joint areas is not required.

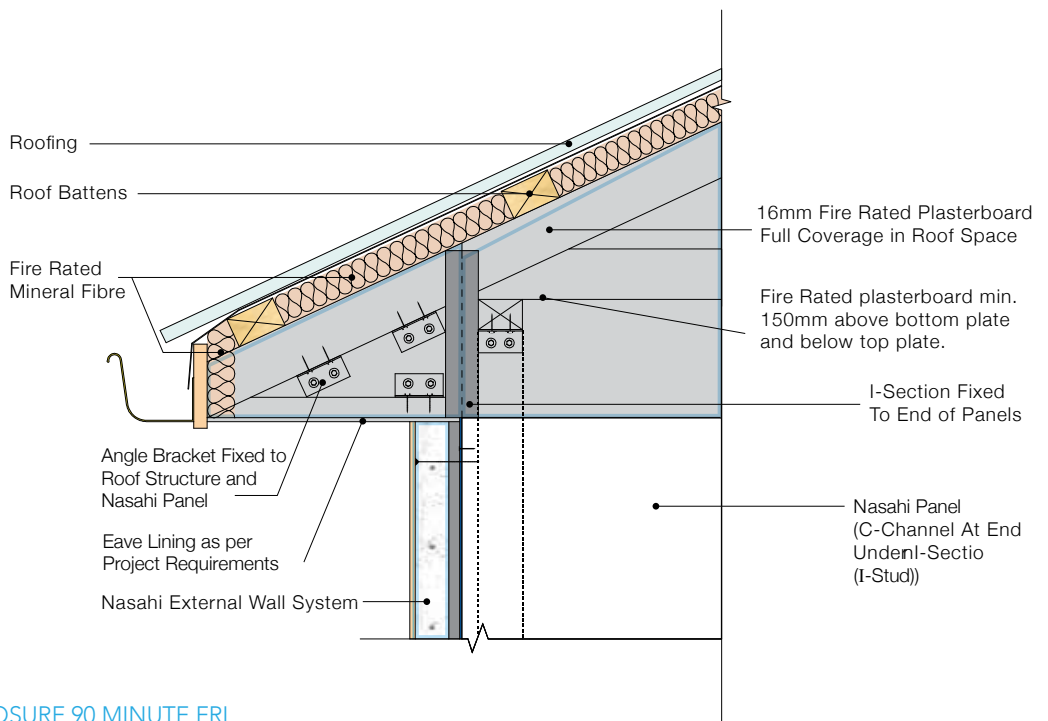


6.2B PARTY WALL - 90 MIN ROOF PARAPET JUNCTION DETAIL





DETAIL 7.1: EAVE CLOSURE 60 MINUTE FRL

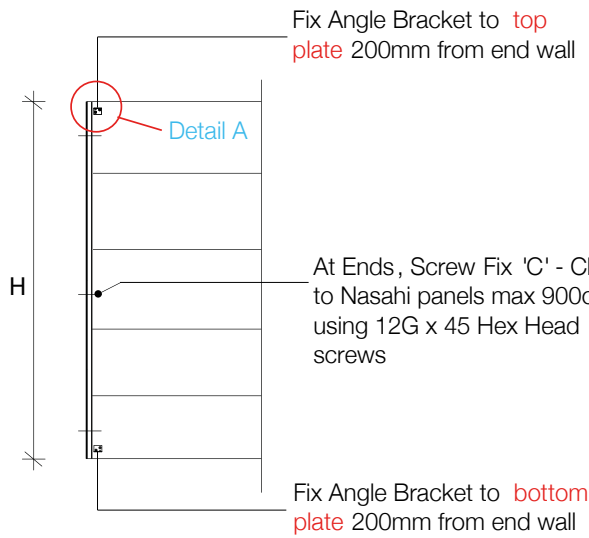


DETAIL 7.2: EAVE CLOSURE 90 MINUTE FRL

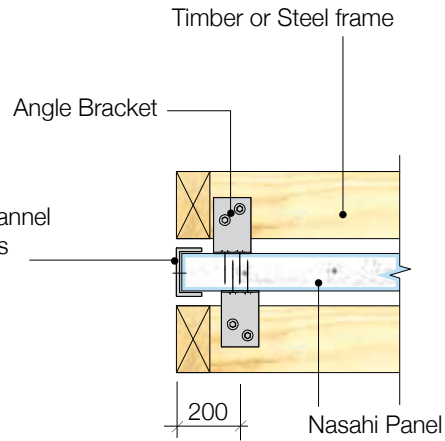
**Note:** Panels require end restraint of 150mm minimum. This may be an issue when roof space is limited. To meet the requirement the panel below may need to be cut.

Additional details and special cases can be found in the Technical Notes Section on our website.

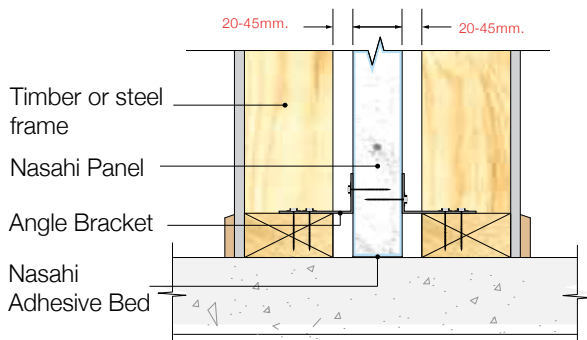
# DETAILED DRAWINGS



**DETAIL 8.1 END DETAIL**  
(Optional C-Channel) from page 33

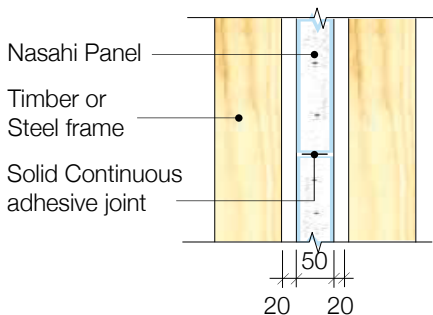


**DETAIL 8.2 END DETAIL PLAN VIEW**



**DETAIL 8.3 CAVITY DISTANCE BETWEEN PANELS & FRAME**

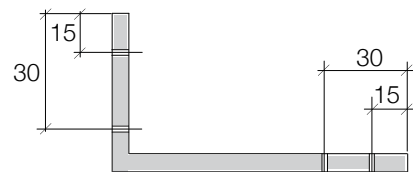
**Note:** For cavities larger than 45mm blocking can be fixed to top and bottom plate and roof trusses.



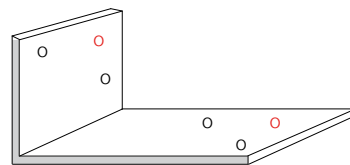
**DETAIL 8.4 PANEL JOINT DETAIL**

**Note:** It is not a requirement to flush joint adhesive to panel face. continuous adhesive joint with a minimum 30mm must be provided for fire & acoustic requirements.

5.0mm  $\varnothing$  holes staggered 15mm (min) from ends.



Aluminium angle.  
50mm wide x (45mm x 75mm long) x 1.5BMT



**Note:** If required, it is permitted to site drill another 5mm diam. hole (hole shown in red) so as to achieve a maximum 45mm gap between the frame and panel. The hole to be no less than 15mm from the edge of the angle in line with the existing hole closest to the edge.

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# Guarantee

NASAHI® GUARANTEE THE PRODUCTS MANUFACTURED BY US AND THE SYSTEMS DESCRIBED IN NASAHI® LITERATURE FOR 7 YEARS, SUBJECT TO THE TERMS AND CONDITIONS OF THE NASAHI® GUARANTEE WHICH CAN BE FOUND ON OUR WEBSITE. NASAHI® DOES NOT GUARANTEE COMPONENTS, PRODUCTS OR SERVICES, SUCH AS INSTALLATION, SUPPLIED BY OTHERS. NASAHI® RECOMMENDS THAT ONLY PRODUCTS, COMPONENTS AND SYSTEMS RECOMMENDED BY IT BE USED.

Nasahi® Approved Coating Systems used with the Nasahi® External Wall System must be guaranteed by the coating manufacturer and meet the minimum performance requirements specified by Nasahi®. It must have been prepared and installed in accordance with the manufacturers written instructions and technical specifications.

Only projects for which a completed Nasahi® Installation Compliance Certificate has been received will be eligible for the Nasahi® guarantee. Blank certificates are available from our website.

This guarantee applies to the performance of the system for the uses outlined in this Installation guide and excludes liability for consequential damage or losses in connection with defective cladding, other than those imposed by legislation.

## WARRANTY

The Nasahi® Panel, when installed in accordance with this guide, are warranted for a minimum of 15 years (from date of purchase) to be free from any defects subject to the conditions and exclusions set out in the Nasahi® Warranty Document available on our website.

Nasahi® Panels are warranted to not materially degrade, corrode or break down during the Term of this warranty (Nasahi® Warranty Document).

This exceeds the 7-year requirement outlined in the NCC and the relevant Australian Standards.

## DISCLAIMER

The information presented within this Installation guide is provided in good faith and to the best of our knowledge and is accurate at the time of preparation. The provision of this information should not be interpreted as a recommendation to use any of our products in violation of patent rights or in breach of statutes or regulations. Users are advised to make their own determination as to the suitability of this information in relation to their particular project and circumstances. As the information contained within this Installation guide may be applied under conditions beyond our control, no responsibility can be accepted by Nasahi®, or its staff for any losses or damage caused by any person acting or refraining from action as a result of misuse of this information.

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