





CODEMARK™
CMA-CM40172



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NASAHI[®]
building smarter

www.nasahi.net.au



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 m³ 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.

Nasahi's "building smarter" philosophy has integrated the highest quality manufacturing processes with systems in place to meet the demands of the local market. By focusing on service, product quality and technical support we provide a guarantee you can trust.



AUTOCLAVED AERATED CONCRETE (AAC)

Autoclaved Aerated Concrete is a lightweight precast 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.

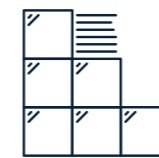
An embedded corrosion protected steel mesh inside the panels gives them excellent strength when installed as flooring or over a load-bearing timber or steel frame. Panels are supplied in a standard width of 600mm and up to 3300mm length, and can easily be cut to size allowing fast and strong installation.

Table 1: Weight of 2200mm Long Panel

Thickness	50mm	62mm	75mm
Working Panel Weight (650kg/m ³)	43kg	54kg	65kg

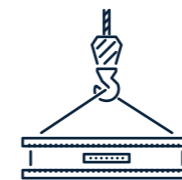
Nasahi Panels are designed to provide a superior wall and floor solution. It's excellent airborne noise transmission properties result in a quieter, more comfortable home at a significantly reduced cost compared with concrete or brick.

Manufactured from lightweight steel-reinforced autoclaved aerated concrete, Nasahi Panels have a working density of 650kg/m³ making them highly resistant to chipping and damage during delivery and handling. Nasahi Panels are also thermally stable, providing long-term durability.



Quick Installation

Panels are installed just like conventional particleboard by on site tradespeople.



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.



Energy Efficient

Nasahi Flooring Systems achieve very high thermal ratings, especially in suspended floor applications.



Fire Resistant

Nasahi Panels are non-combustible, providing incredible protection for your family.



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.



Transportable

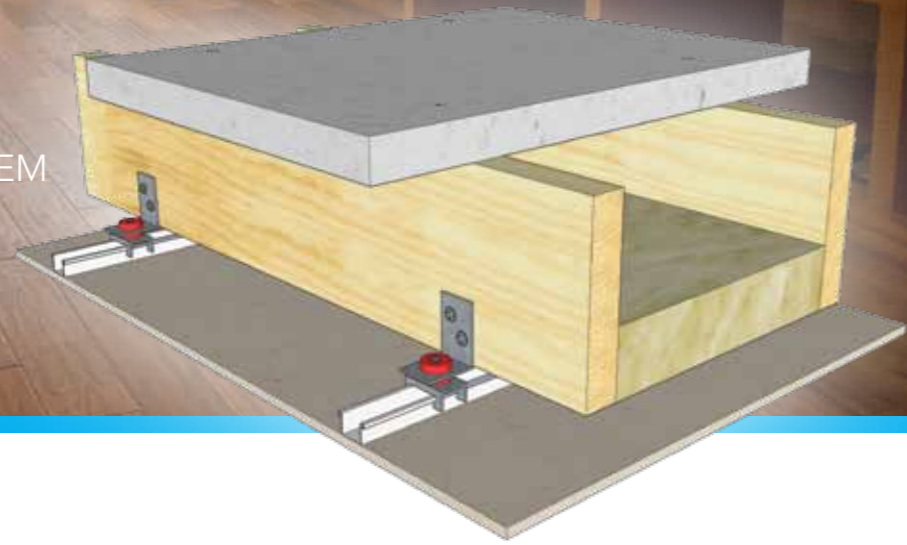
Panels are flat-packed in packs of up to 20 improving transportability to and around site.



Nasahi Panels can also be used for:

- External Walls
- Party Walls
- Fences

NASAHI® FLOORING SYSTEM



The Nasahi Flooring Systems detailed in this guide are suitable for residential, and low-rise multi-residential applications. Panels can be installed directly onto timber or steel structural joists.

This design and installation guide specifies design principles for the Nasahi Flooring 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.

Common flooring types used with Nasahi Flooring System:

Carpet	Tiles
<ul style="list-style-type: none"> • Carpet • Medium Duty Underlay • Nasahi Panel 	<ul style="list-style-type: none"> • Tiles • Flexible Tile Adhesive • Waterproof Membrane (Wet Areas Only) • 5mm Thick Rubber Underlay • Cement Screed • Nasahi Panel
Floorboards	Solid Timber Flooring
<ul style="list-style-type: none"> • Floorboards • Underlay suitable for concrete floors (moisture barrier, 3mm foam thickness) • Nasahi Panel 	<ul style="list-style-type: none"> • Timber Flooring • Ply Sheeting or Timber Batten • Nasahi Panel

Nasahi Panels	<p>Nasahi Panels are manufactured from autoclaved aerated concrete (AAC), embedded with coated steel reinforcing mesh, in a standard width of 600mm and up to 3300mm length.</p> <p style="text-align: center;">These figures are based on a 2200mm long panel.</p> <table border="1"> <thead> <tr> <th>Thickness</th> <th>50mm</th> <th>62mm</th> <th>75mm</th> </tr> </thead> <tbody> <tr> <td>Dry Panel Weight (495kg/m³)</td> <td>36kg</td> <td>46kg</td> <td>55kg</td> </tr> <tr> <td>Working Panel Weight (650kg/m³)</td> <td>43kg</td> <td>54kg</td> <td>65kg</td> </tr> </tbody> </table>	Thickness	50mm	62mm	75mm	Dry Panel Weight (495kg/m ³)	36kg	46kg	55kg	Working Panel Weight (650kg/m ³)	43kg	54kg	65kg
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Dry Panel Weight (495kg/m ³)	36kg	46kg	55kg										
Working Panel Weight (650kg/m ³)	43kg	54kg	65kg										
Approved Ceiling Systems	The underside of upper storey floors must be lined with a ceiling system that provides project specific noise reduction and fire resistance level. If you require advice selecting a ceiling system please contact Nasahi.												
Timber & Steel Load-bearing Joists	Joists, bearers and other structural components must be designed in accordance with local codes to ensure structural stability for the design application.												
Panel Fasteners	<p>Panel fasteners are used to secure panels to structural joists.</p> <p>Timber Joists Bugle Batten Head 14G-10 SDS Type 17, Class 3 Screws</p> <ul style="list-style-type: none"> • Minimum embedment of 30mm into timber joists <p>Steel Joists Hex Head Self-Drilling 14G-10 Class 3 Screws</p> <ul style="list-style-type: none"> • Minimum embedment of 15mm into metal joists <p>NOTE: Bugle Head Fasteners fixed through the face of the panels must be embedded between 5mm and 10mm into the panel to comply with corrosion and structural requirements.</p>												
Construction Adhesive	A bead of AAC compatible construction adhesive must be applied between the top of the joists and the Nasahi Panels. Where two panels butt joint on a joist, adhesive must cover both panel edges as shown in the details.												
Panel Adhesive	AAC compatible adhesive is used to glue and seal panel joints, for minor patching and filling screw heads.												
Nasahi Corrosion Protection 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.												

DESIGN DETAIL CONSIDERATIONS

Framing

The Nasahi Flooring System is specified with both a maximum span, and a recommended span.

The **maximum span** is the structural limit of the panel when subjected to the specified loads.

The **recommended span** is the span that will minimise panel cutting.

Panel spans are outlined in Table 3. This ensures panel joints are located at the centreline of joists.

Joists must be designed for the intended design loads in accordance with local framing codes for timber or steel structures.

Panel loads must be evenly distributed across all floor joists. Self-weight of panels as outlined in Table 2 on Page 11 must be taken into consideration when designing load-bearing frames.

Control Joints

Control joints must be provided to relieve the stresses resulting from differential movement between the panel and other building elements. A 5–10mm gap should be left between panels and filled with a backing rod and appropriate flexible sealant (fire rated where required).

Control joints must be installed:

- At eccentrically loaded floor locations
- Changes in joist orientation (Detail 3.3)
- Where panel joints are located over bearers/support walls (Detail 3.4)

Concentrated Loads

Where concentrated loads including load-bearing or bracing walls will be installed onto the Nasahi Flooring System, additional back blocking is required as shown in Detail 1.2. Loading should be kept below the maximum allowable deflections specified in Table 4 on Page 11.

Penetrations

Penetrations greater than 80mm must be back blocked. A 5–10mm gap must be created around the service to allow for differential movement between the panel and the service. Any gaps must be filled with backing rod and an appropriate flexible sealant.

Where fire resistance levels are specified, fire rated sealant and a fire rated penetration collar may need to be installed around the service and penetration. Nasahi recommends confirming penetrations through floors with a fire engineer. Where multiple penetrations through the same panel are required, they must be located in-line, parallel to the long edge of the panel. Where multiple penetrations in a panel cause a reduction in panel strength additional structural support joists may be required.

Termites

Nasahi Panels are resistant to termites; however, termite protection is a mandatory requirement to protect internal building components. Termite protection must be installed in accordance with local codes and NCC requirements taking into account state variations.

STRUCTURE

Nasahi Flooring Systems should be installed onto load-bearing timber or steel joists at 440mm or 550mm centres. Other joist spacings can be accommodated by using additional back blocking.

Table 2: 2200mm Long Panel Loads

Panel Thickness	50mm	62mm	75mm
Design Dead Load (kN/m ²)	0.36	0.45	0.53
Panel Weight (kg/m ²)	33.2	41.6	50.1

Loads

The Nasahi Flooring System has been designed to withstand a maximum uniformly distributed load of 3.0kPa, meeting the NCC requirements for domestic and residential dwellings. For higher loads, please contact Nasahi.

Table 3: Maximum and recommended joist spacing for floor loads

Panel Thickness	50mm @ 2.0kPa	62mm @ 2.0kPa	75mm @ 2.0kPa	75mm @ 3.0kPa
Maximum Spacing (mm)	450	450	600	450
Recommended Spacing (mm)	440	440	550	440

Allowable Deflection

Allowable deflection limits are based on the site joist spacing and applied loads. The Nasahi Flooring System complies with deflection requirements for residential and multi-residential constructions. For all other applications, it is the responsibility of the system designer to ensure the following deflection limits are not exceeded as outlined in AS/NZS 1170.

Table 4: Allowable panel deflections

Allowable Deflection (mm)	50mm Thick Panel	62mm Thick Panel	75mm Thick Panel
Dead Loads	1.5	1.5	2.0 or 3.0
Live Loads	1.2	1.2	1.6
Dead and Live Loads in Combination	1.1	1.5	1.5
Dynamic Response	2.0	2.0	2.0

Note: Dead Loads: Span/300 - Live Loads: Span/360 - Dead and Live Loads in Combination: Span/400
Dynamic Response: 2mm maximum under 1kN point load

SYSTEM PERFORMANCE

ACOUSTIC PERFORMANCE

The Nasahi Flooring Systems unique aerated construction makes it lightweight, while delivering excellent acoustic performance like a dense masonry product. This results in less foot traffic noise throughout the building and a high quality feeling underfoot.

Acoustic Performance	Rw + Ctr 42dB to 60dB
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Energy Efficiency

The Nasahi Flooring Systems achieve energy efficiency levels that comply with all climate zone requirements in the NCC. This exceptional level of performance is due to the Nasahi Panels unique aeration, which provides very high levels of thermal resistance. The NCC divides Australia into 8 climate zones. Choose the Nasahi Flooring System that is right for your location. For other system combinations see Table 7 on Page 19.

Fire Resistance

The Nasahi Flooring System complies with all Fire Resistance requirements of the NCC when installed with a fire rated ceiling system beneath. Using Boral Firestop plasterboard and R2.5 insulation the system can achieve an FRL of up to 90/90/90. Nasahi Panels are inherently non-combustible, and when exposed to fire Nasahi Panels do not emit any toxic gases or vapours.



Image sourced from the Australian Building Codes Board (ABCB) www.abcb.gov.au

Table 5: System R-Values

	50mm	62mm	75mm
Carpet and Underlay	3.59 W	3.68 W	3.78 W
Nasahi Panel	2.11 S	2.20 S	2.30 S
Reflective Sarking			

Notes: W = winter; S = summer

Standard floor coverings may be used with the Nasahi Flooring System as would typically be used for other substrates.

Fixings

Table 6: Approved floor covering fixings

Fixing Type	Description
Twist Nails	2.8mm dome head twist nail
Screws	8G Type 17 – Coarse thread Countersinking Screw

Note: Fixings should penetrate a minimum of 40mm into Nasahi Panels

Panel Preparation

Nasahi Panels must be clear of debris and loose particles. All surface damage and screw heads must be patched with AAC Panel Adhesive.

Prior to installation, panels and patches must be dry (>6% moisture content). If panels are not dry then a membrane such as 0.2mm polyethylene sheeting can be placed over the floor.

Carpet	Tiles	Timber	Vinyl
<p>Medium duty underlay should be used as a minimum.</p> <p>Carpet smooth edge (Gripper) must be installed in accordance with AS/NZS 2445.1 a minimum of 50mm from panel edge.</p> <p>Install carpet gripper using only the approved fixings outlined in Table 6, standard gripper fixings are not suitable.</p> <p>Carpet can be installed as per manufacturers instructions for standard flooring.</p>	<p>Apply sealer as per manufacturers specifications.</p> <p>Waterproofing membrane must be installed in wet areas and balconies.</p> <p>Ensure control joints are installed in the necessary locations.</p> <p>Penetrations through waterproofing membrane must be sealed appropriately.</p>	<p>Floating Floor</p> <p>Install underlay/ backing in accordance with project acoustic specifications. There are no special requirements for floating timber-flooring installation.</p> <p>Direct Fix</p> <p>Install min. 6mm plywood sheets to Nasahi Panels using construction adhesive and coarse thread countersunk screws into joists below at max. 600mm centres. Fix timber flooring to plywood as per standard installation.</p>	<p>Vinyl flooring may be installed either onto a concrete screed, applied in accordance with the manufacturers specifications or onto a Masonite board.</p> <p>Fix Masonite board to Nasahi Panels using the fixings outlined in Table 6. Vinyl should be installed to Masonite in accordance with manufacturers specifications.</p>

INSTALLATION PROCESS



Stage 1: Preparation

1. Supporting structure must be completed prior to installation of the Nasahi Flooring System. A pre-installation check list is available on our website.
2. A joist spacing of 440mm is recommended. Panel thicknesses and loads must comply with the specifications in Table 3 and Table 4 on Page 11.
3. Lay the first row of panels so that they are flush with floor joists and joints are located with at least 25mm bearing on joists. Start the next row with the piece that was cut from the end of the previous row. This results in a strong stretcher-bond pattern.
4. If panels overhang joists, install back blocks as shown in Detail 1.2.

Stage 2: Nasahi Panel Installation

5. Starting at one corner, apply a bead of construction adhesive to every joist where it contacts the panel.
6. Gently lay the panel down onto the supporting joists.
7. Use a spirit level to ensure that the Nasahi Panel is level and is flush with the joists.
8. Screw fix through the face of the Nasahi Panel and into the joist. At least two screws must be installed into each joist. Screws must be a minimum of 50mm in from the panel edge and can be skew nailed where required.

9. The screw head must penetrate 5–10mm into the panel face. Screw heads are later filled with Nasahi Adhesive.

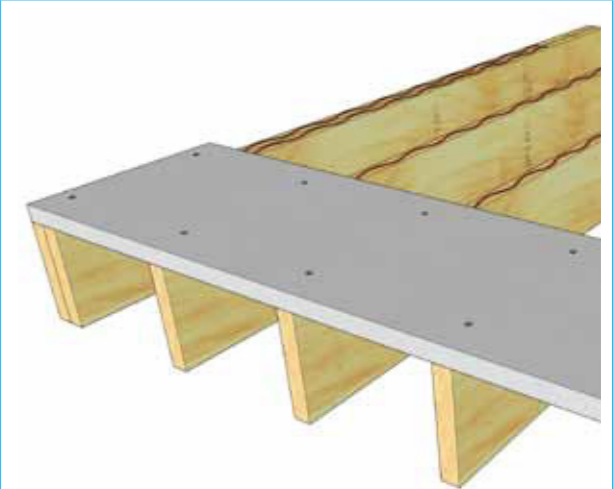
Stage 3: Panel Joints

10. Apply a 2–3mm of Nasahi Panel Adhesive to the edge of the panel. Install the next panel hard against it, ensuring it is level and joint is fully sealed. Use a trowel to remove excess adhesive.
11. Where panels join, ensure both panels are adhered to the joist with construction adhesive, and fix two screws between the panels as shown in Detail 1.5.
12. Continue installation of floor in a stretcher-bond pattern.
13. Penetrations & Services must be sealed in accordance with Detail 5.1 and 5.2.
14. It is recommended that during construction, panels in high traffic areas be covered with a suitable material such as plywood to prevent damage by other trades.

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

1. Preparation

- a. Check that the joist spacing and required loads match the panel thickness in accordance with Table 3 and Table 4 on Page 11.
- b. Ensure Nasahi Panels join on joists with at least 25mm bearing. Where panels overhang joists, they must be cut to length. ALL exposed steel reinforcement must be treated with Nasahi Anti-Corrosion Touch Up Paint.
- c. Where panels will overhang joists, install back blocks as shown in Detail 1.2.

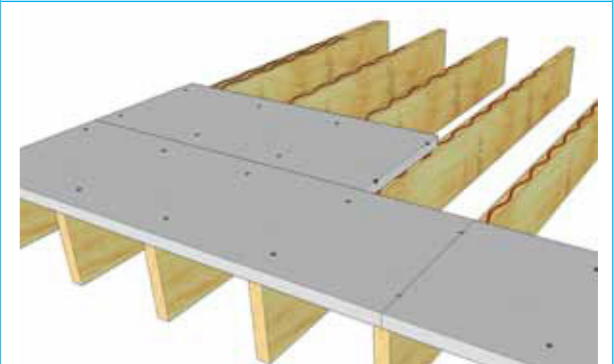


2. Panel installation

- a. Apply a bead of construction adhesive to every joist where it contacts the panel.
- b. Lay panels down onto joists.
- c. Use a spirit level to ensure that panels are level and flush with the joists.

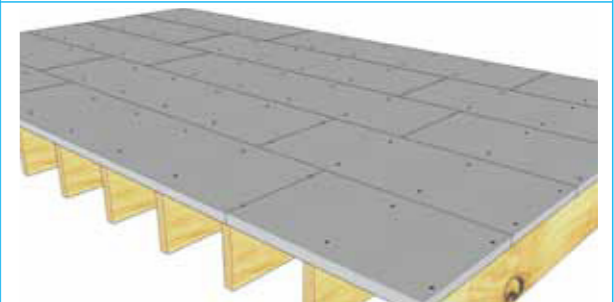
3. Panel Joints

- a. Apply 2–3mm of Nasahi Panel Adhesive to the edge of the Nasahi Panel.
- b. Install the next panel hard against it, ensuring it is level and joint is fully sealed. Use a trowel to remove excess adhesive.
- c. Screw fix panels to joists.



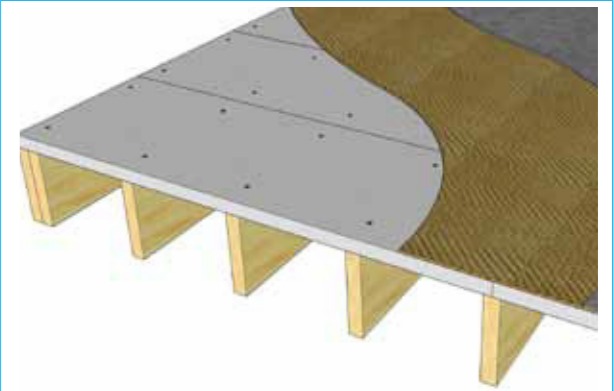
4. Continue Installation

- a. Rows should be started at alternating ends, so that panels are installed in a stretcher-bond pattern as shown.



5. Complete Installation

- a. Lay all panels in a stretcher bond pattern until flooring is complete.
- b. Penetrations less than 80mm diameter may be cored out without back blocking. For larger penetrations, back block and seal around pipe with backing rod and sealant and install a fire rated collar where specified by fire engineer.
- c. Standard flooring may be installed over Nasahi Panels using the approved fixings outlined in Table 5 on Page 13.



CUTTING PANELS

Nasahi 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.



BASIC TOOLS REQUIRED TO INSTALL NASAHI® PANELS

- Saw (with Diamond Blade)
- Drill (for drilling penetration holes and screwing fasteners)
- Vacuum
- Mixing Buckets
- Steel Towel

DELIVERY

Nasahi Panels are delivered to site in flat packs of up to 20.

Each pack has a wet mass of approximately 900kg, 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.

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



All quarry products, including bricks, concrete and Nasahi Panels contain Crystalline Silica, or Silica Dust.

SAFETY

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 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 Flooring 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.



Table 7: Nasahi Floor Systems

Nasahi System	System Details	Panel Thickness	Acoustic		Impact: Ln,w (CI)		Thermal	FRL
			Airborne: Rw (Ctr)	Tiles and 5mm thick rubber underlay	Carpet and foam underlay	R-Value S = Summer W = Winter	Using Firestop PBD and R2.5 Ceiling Batts	
FXX-T250-01	<ul style="list-style-type: none"> • Nasahi Panel • 250mm deep timber joist • No insulation • 10mm standard plasterboard 	50mm	48 (-6)	73 (-7)	46 (-5)	3.61 W 2.05 S	Nil	
		62mm	48 (-5)	73 (-6)	46 (-5)	3.70 W 2.14 S		
		75mm	49 (-5)	65 (-2)	43 (-3)	3.80 W 2.24 S		
FXX-T250-02	<ul style="list-style-type: none"> • Carpet and Underlay • Nasahi Panel • 90mm Reflective Cavity • R2.0 Insulation • Reflective Sarking 	50mm	N/A	N/A	N/A	4.33 W 3.50 S	Nil	
		62mm	N/A	N/A	N/A	4.42 W 3.59 S		
		75mm	N/A	N/A	N/A	4.52 W 3.69 S		
FXX-T250-03	<ul style="list-style-type: none"> • Nasahi Panel • 250mm deep timber joist with resilient mounts and furring channels • R2.5 Glass Wool Ceiling Batt • 13mm fire rated plasterboard 	50mm	61 (-4)	60 (-6)	36 (-4)	N/A	30/30/30 FPC	
		62mm	62 (-5)	59 (-5)	36 (-4)	N/A		
		75mm	62 (-4)	52 (-2)	31 (-2)	N/A		
FXX-T250-04	<ul style="list-style-type: none"> • Nasahi Panel • 250mm deep timber joist with resilient mounts and furring channels • R2.5 Glass Wool Ceiling Batt • 16mm fire rated plasterboard 	50mm	61 (-4)	59 (-5)	36 (-4)	N/A	30/30/30 RISF 30 mins	
		62mm	62 (-3)	59 (-5)	36 (-4)	N/A		
		75mm	62 (-4)	52 (-2)	31 (-3)	N/A		
FXX-T250-05	<ul style="list-style-type: none"> • Nasahi Panel • 250mm deep timber joist with resilient mounts and furring channels • R2.5 Glass Wool Ceiling Batt • Two layers of 13mm fire rated plasterboard 	50mm	63 (-3)	59 (-7)	35 (-3)	N/A	60/60/60 RISF 30 mins	
		62mm	63 (-3)	58 (-6)	35 (-3)	N/A		
		75mm	64 (-4)	50 (-1)	30 (-3)	N/A		
FXX-T250-06	<ul style="list-style-type: none"> • Nasahi Panel • 250mm deep timber joist with resilient mounts and furring channels • R2.5 Glass Wool Ceiling Batt • One layer of 13mm fire rated plasterboard • One layer of 16mm fire rated plasterboard 	50mm	63 (-4)	59 (-7)	35 (-3)	N/A	60/60/60 RISF 60 mins	
		62mm	63 (-4)	58 (-6)	35 (-3)	N/A		
		75mm	63 (-3)	50 (-1)	30 (-3)	N/A		
FXX-T250-07	<ul style="list-style-type: none"> • Nasahi Panel • 250mm deep timber joist with resilient mounts and furring channels • R2.5 Glass Wool Ceiling Batt • Two layers of 16mm fire rated plasterboard 	50mm	62 (-3)	59 (-6)	35 (-4)	N/A	90/90/90 RISF 60 mins	
		62mm	62 (-3)	59 (-6)	35 (-4)	N/A		
		75mm	62 (-3)	51 (-2)	31 (-4)	N/A		

FPC: Fire Protective Covering
RISF: Resistance to Incipient Spread of Fire

THE NASAHI® FLOORING SYSTEM NCC COMPLIANCE

NCC Volume One – Covers commercial, residential and public buildings defined as Class 2 to 9. Typical examples include multi-family dwellings, commercial, health buildings and anything not covered under Volume Two.

NCC Volume Two – Covers domestic constructions defined as Class 1 and 10. Typical examples include single-family dwellings, 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 Flooring System has been certified to meet the following provisions of the National Construction Code for Volume One and Volume Two as listed below:

	Volume One	Volume Two
Structural	BP1.1 & BP1.2	P2.1.1
Fire	CP1 & CP2	P2.3.1
Acoustic	FP5.1 & FP5.4	P2.4.6
Energy Efficiency	JP1	P2.6.1

The Nasahi CodeMark Certificate can be downloaded from our website.

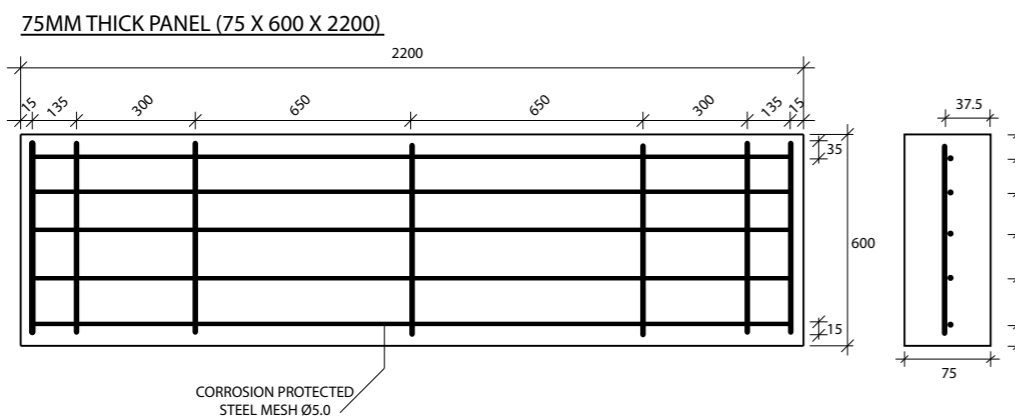
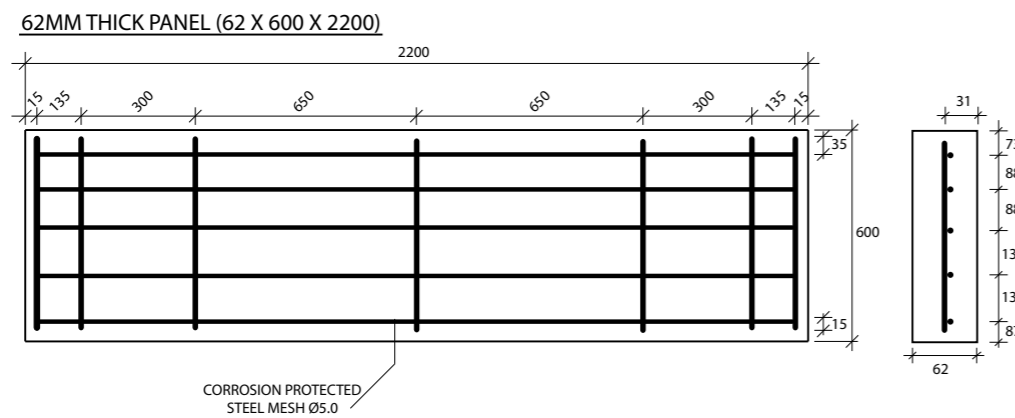
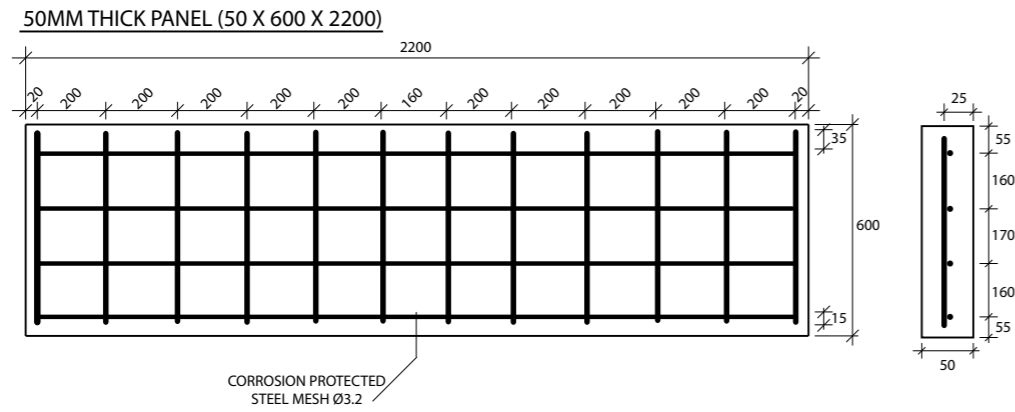
MATERIAL PROPERTIES

Property	Standard	Value	Units
Ambient Density, amb	AS/NZS 4456.8	650	kg/m ³
Dry ¹ Density, dry	AS 5146.2	495	kg/m ³
Mean Compressive Strength	AS 5146.2	4.3	MPa
Characteristic Unconfined Compressive Strength, f _{uc}	AS 5146.2	2.8	MPa
Mean Flexural Strength	AS 5146.2	1.07	MPa
Characteristic Flexural Strength, f _{ut}	AS 5146.2	0.50	MPa
Mean Cold Water Absorption	AS/NZS 4456.14	69.0	%

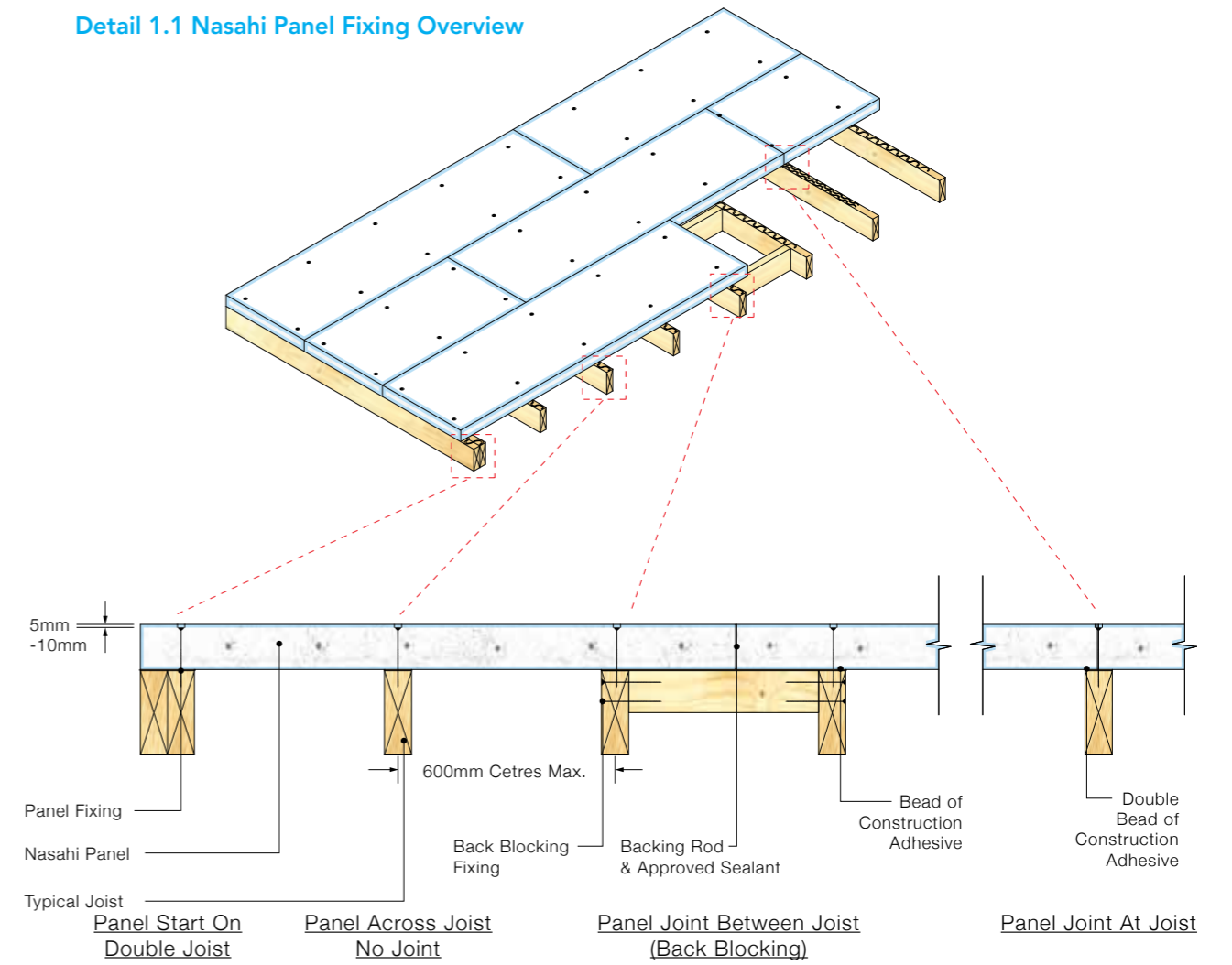
Notes: 1. Dry density is achieved by oven drying specimens so that the moisture content is close to 0%.



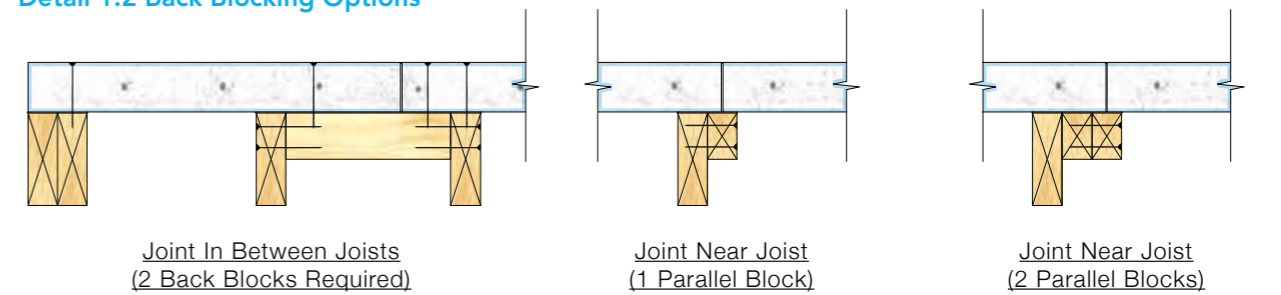
PANEL REINFORCING LAYOUT



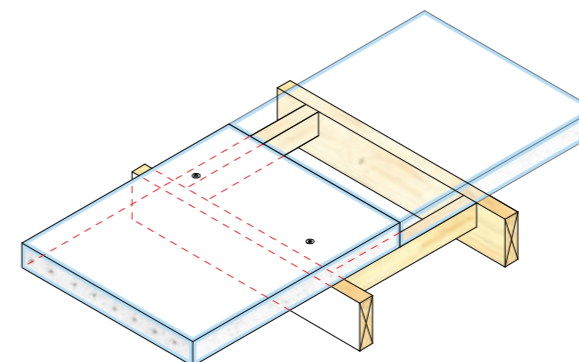
Detail 1.1 Nasahi Panel Fixing Overview

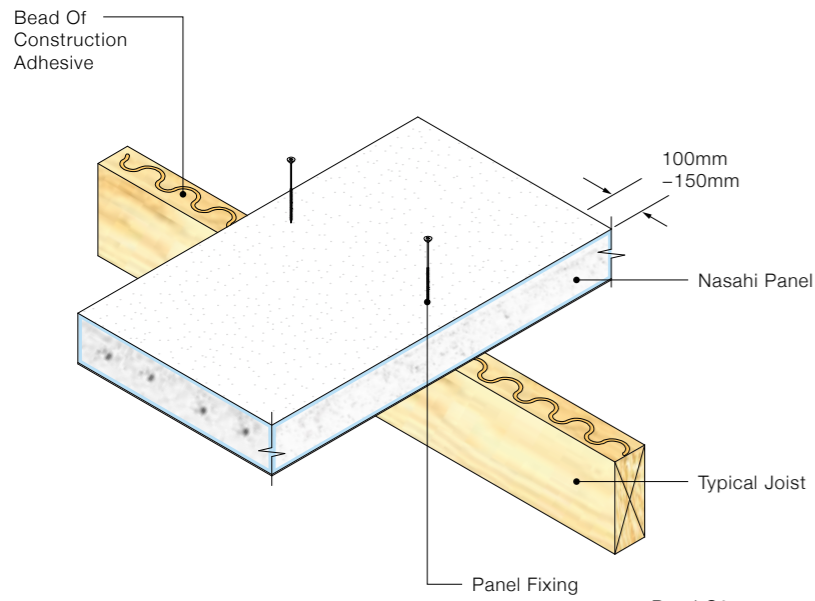


Detail 1.2 Back Blocking Options

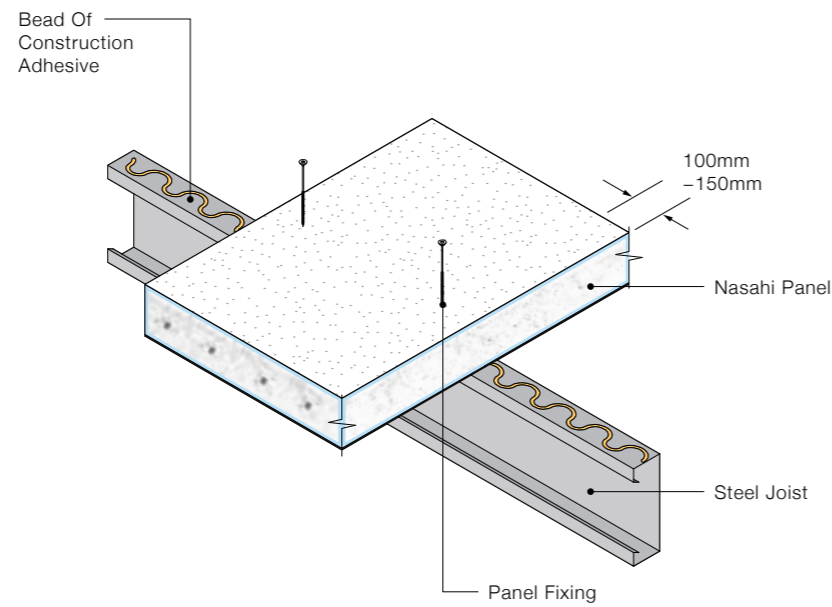


* Back Blocks Must Support Panel Corners

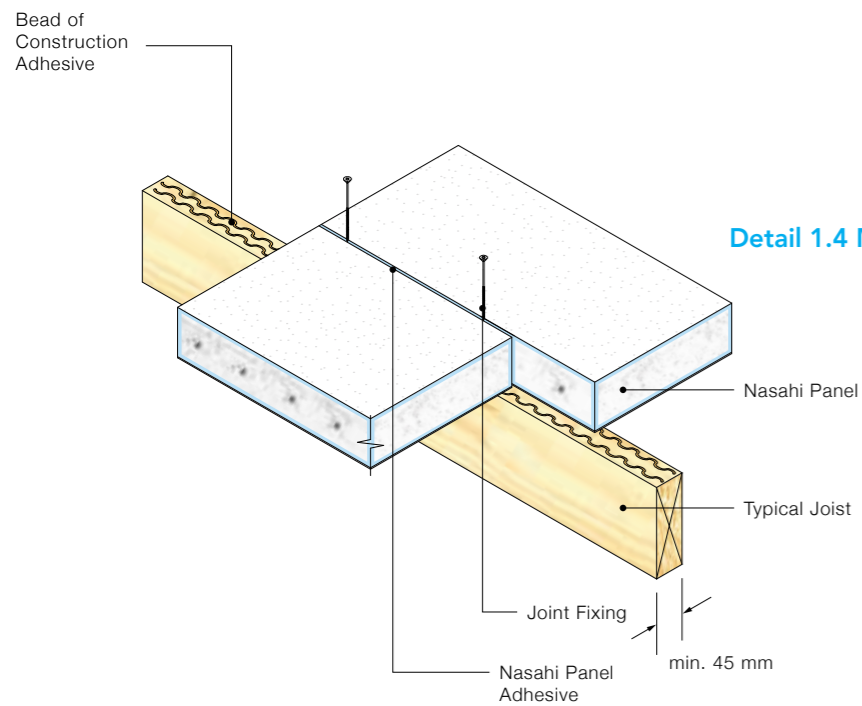




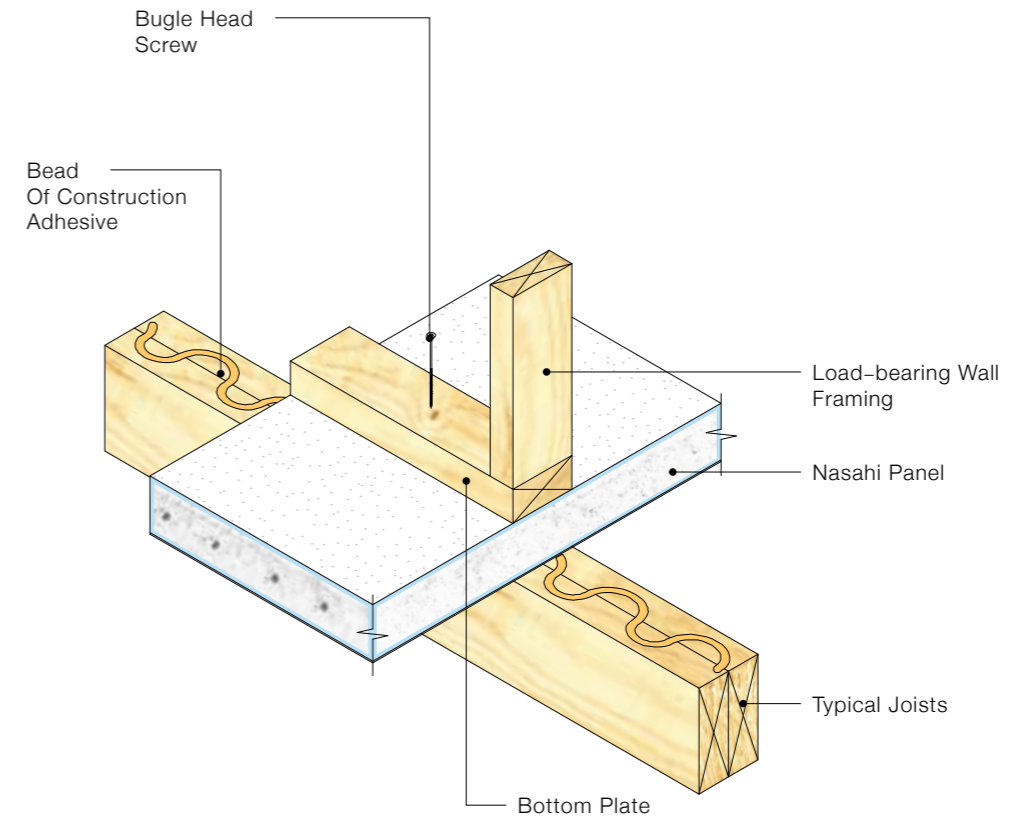
Detail 1.3 Mid Panel Fixing Timber Joist



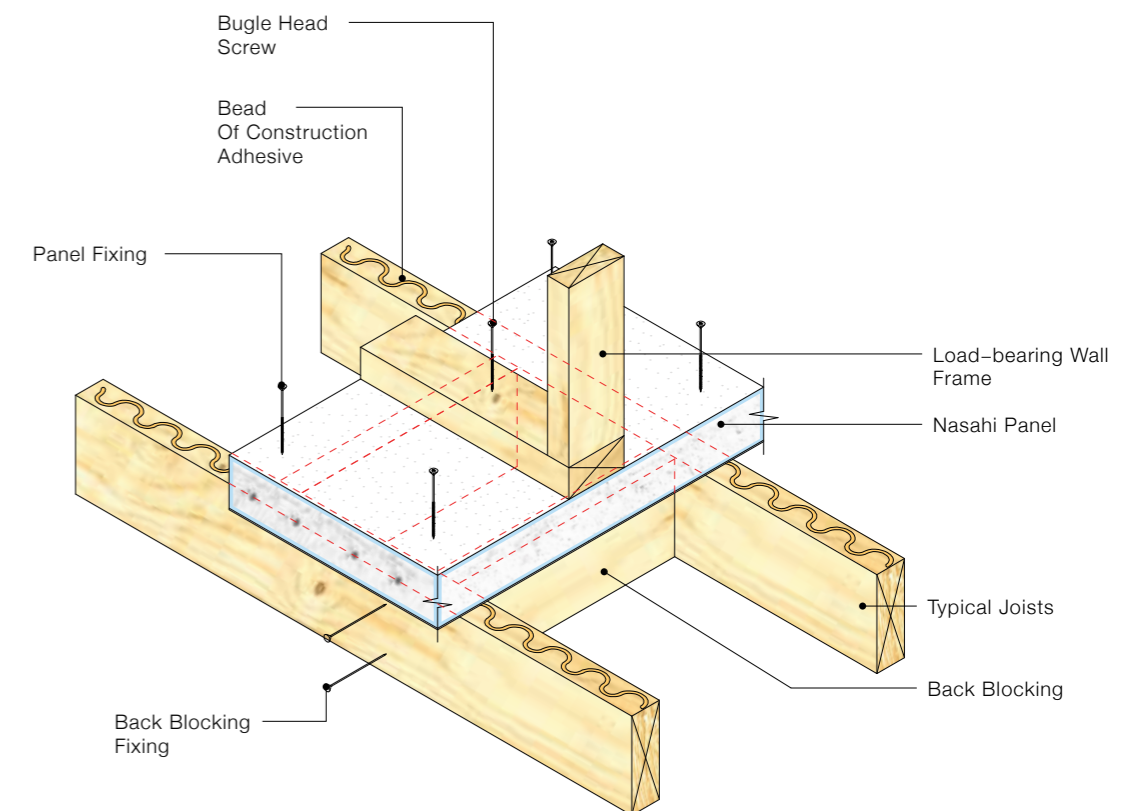
Detail 1.4 Mid Panel Fixing Steel Joist



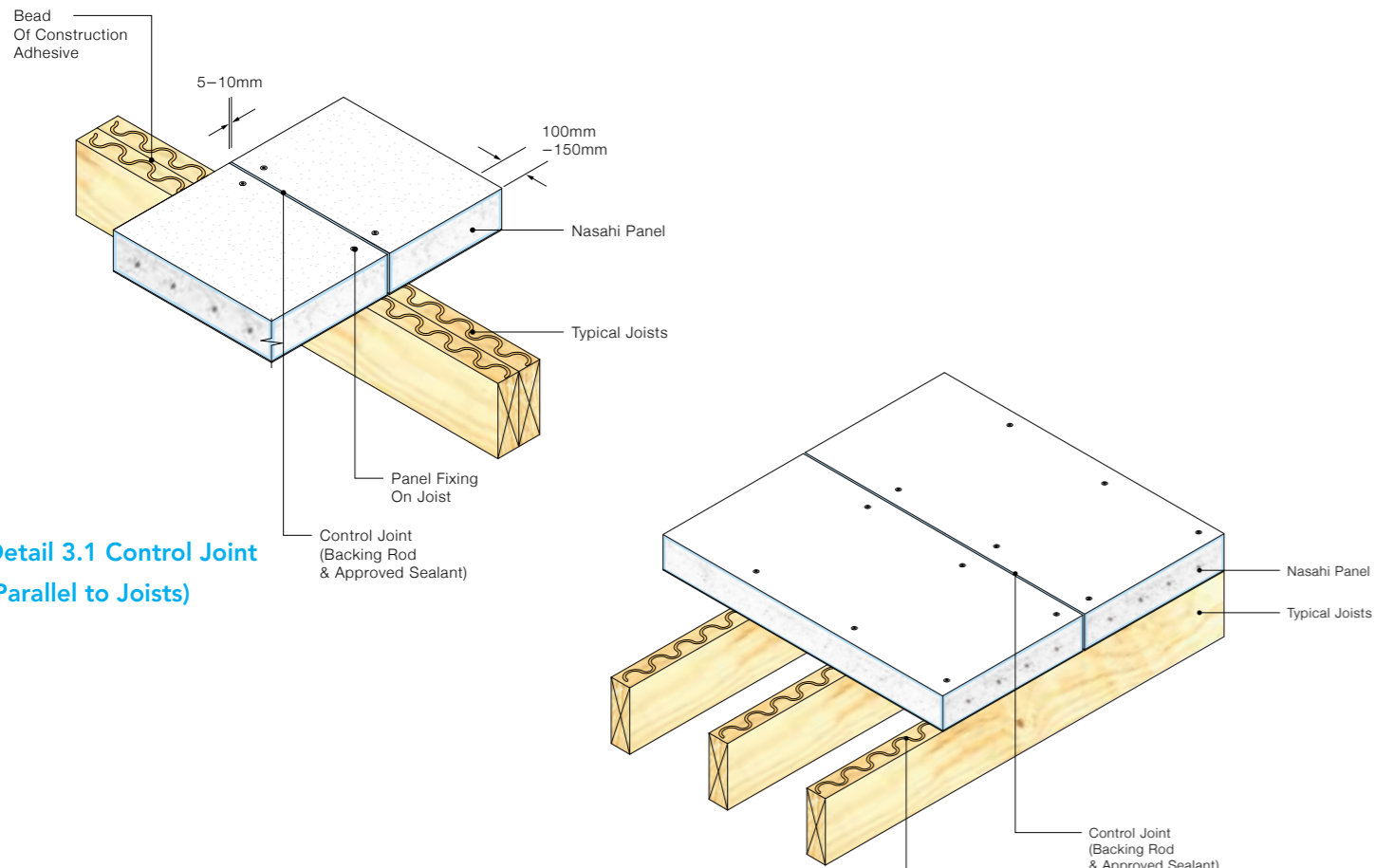
Detail 1.5 Panel Joint on Joists



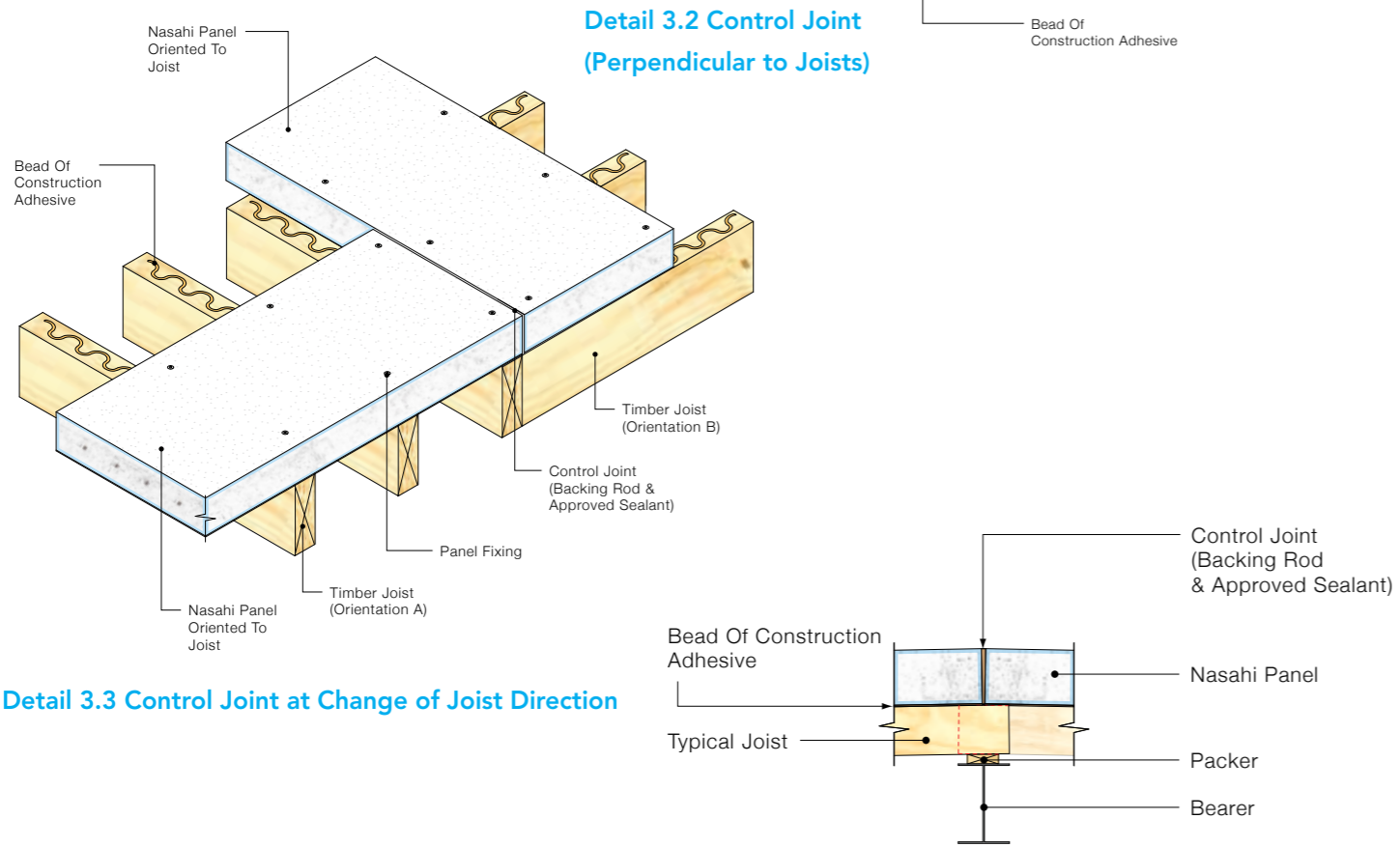
Detail 2.1 Load Bearing Wall Option 1:
Floor Joist Under Loadbearing Wall



Detail 2.2 Load Bearing Wall Option 2:
Back Blocking Under Loadbearing Wall

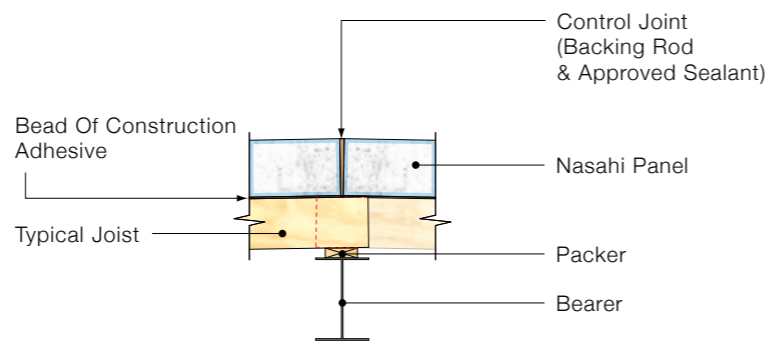


Detail 3.1 Control Joint (Parallel to Joists)

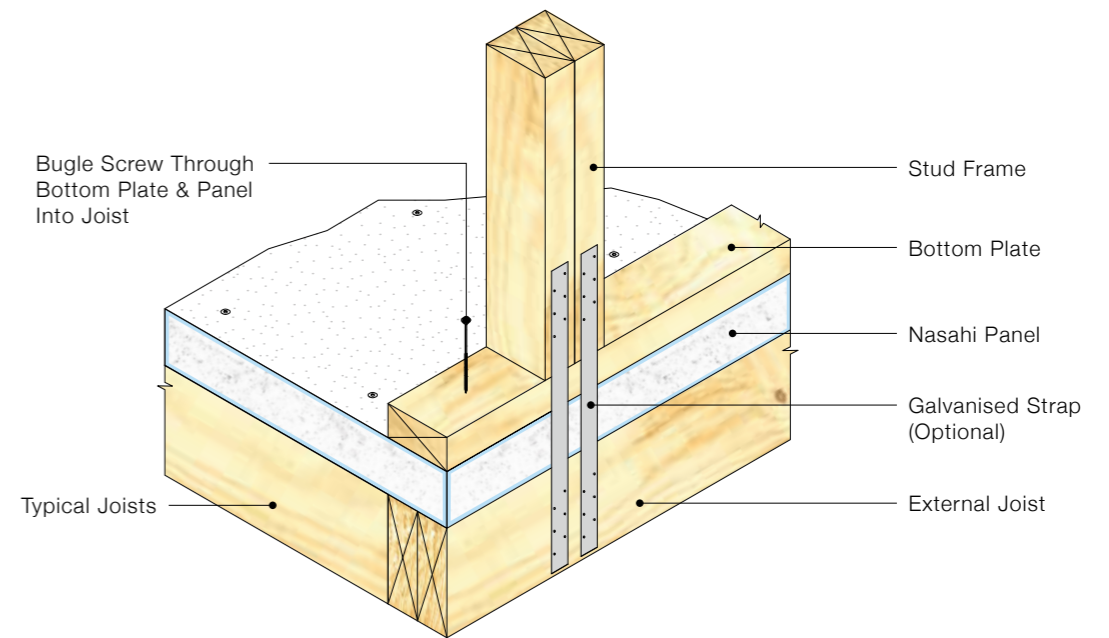


Detail 3.2 Control Joint (Perpendicular to Joists)

Detail 3.3 Control Joint at Change of Joist Direction

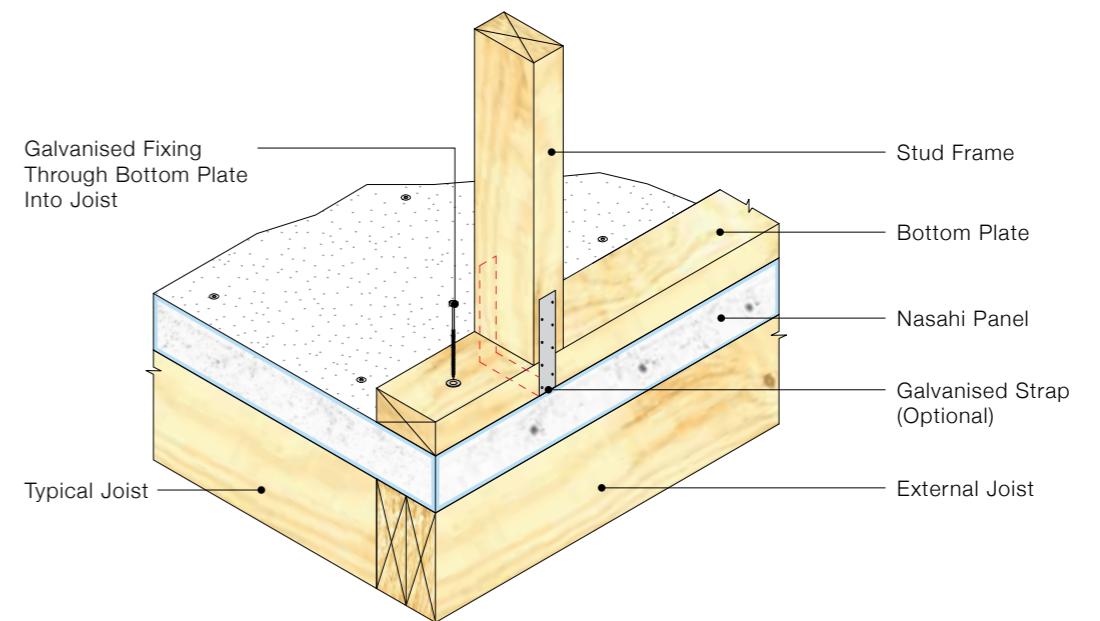


Detail 3.4 Control Joint Over Bearer / Support Wall



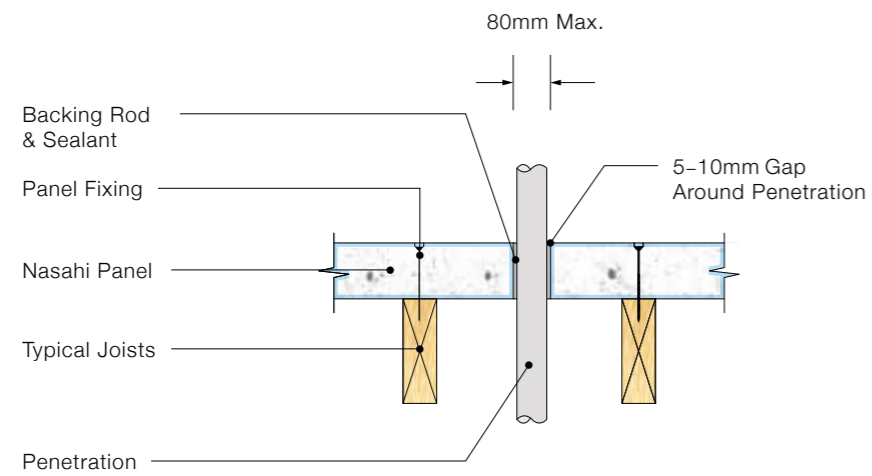
Detail 4.1 External Wall Frame Fixing

- **Load-bearing** Walls Must Be Supported By Joist Under Panel. Check With Project Engineer For Maximum Panel Loads.

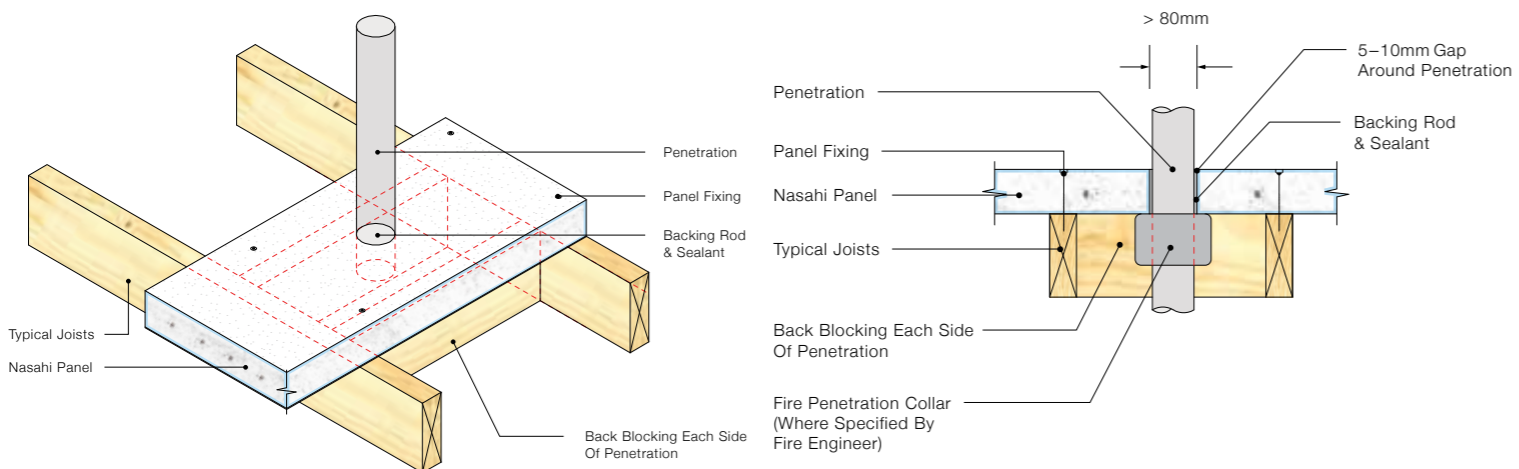


Detail 4.2 External Wall Frame Fixing (Bolt Fixing)

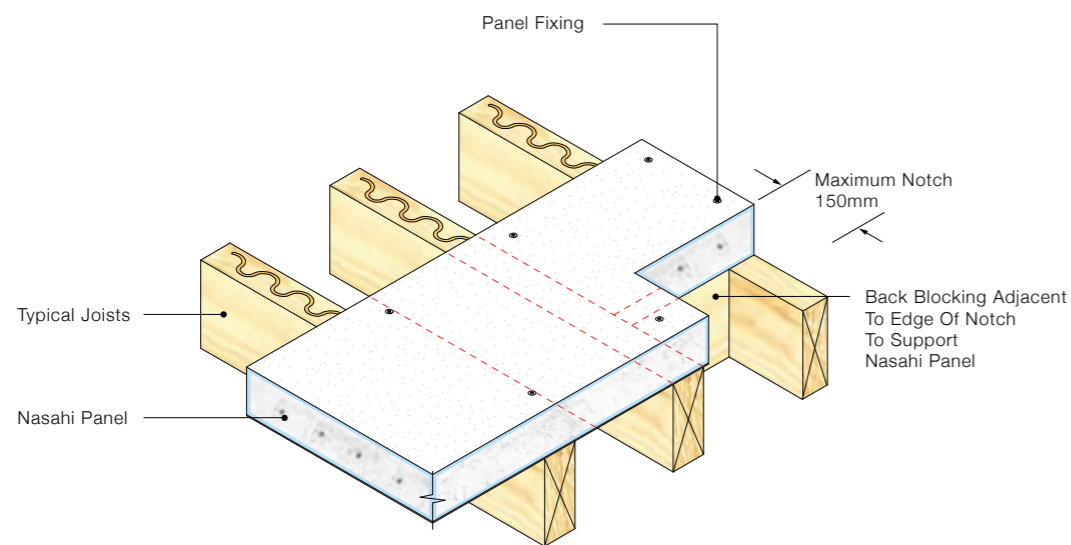
- **Load-bearing** Walls Must Be Supported By Joist Under Panel. Check With Project Engineer For Maximum Panel Loads.



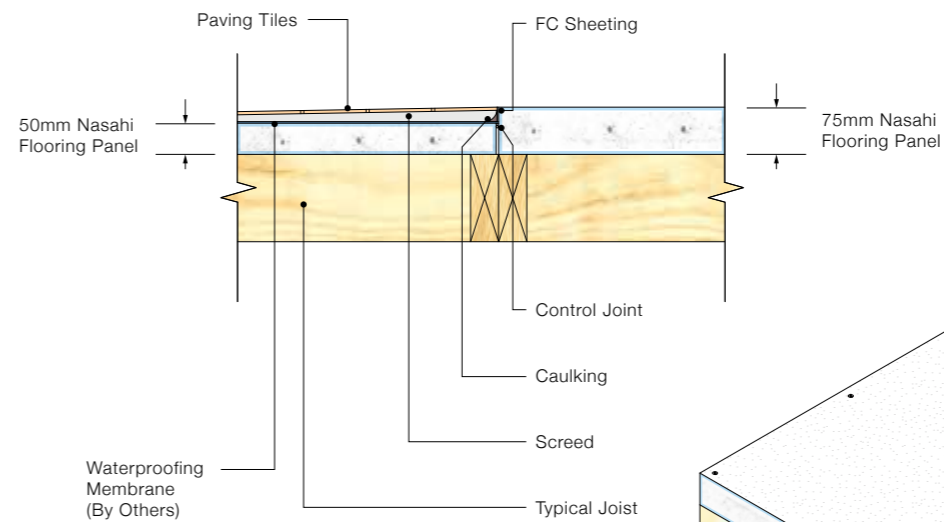
Detail 5.1 Typical Penetration
(Smaller than 80mm)



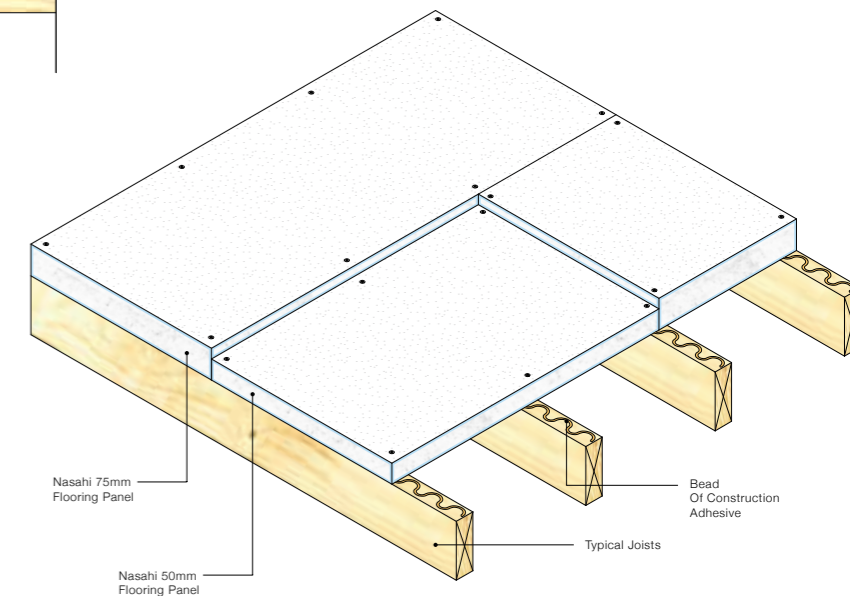
Detail 5.2 Typical Penetration
(Back Blocking)



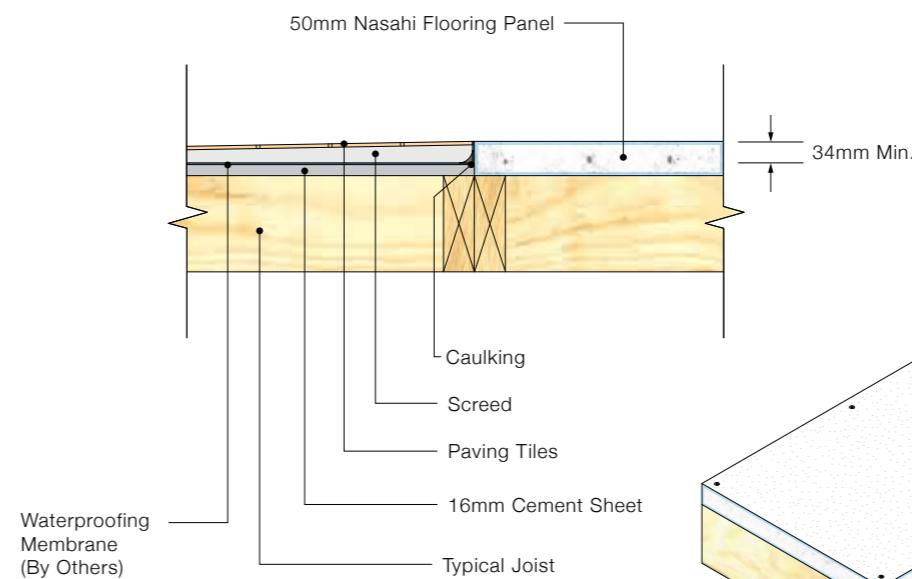
Detail 5.3 Support Detail for Corning Notching



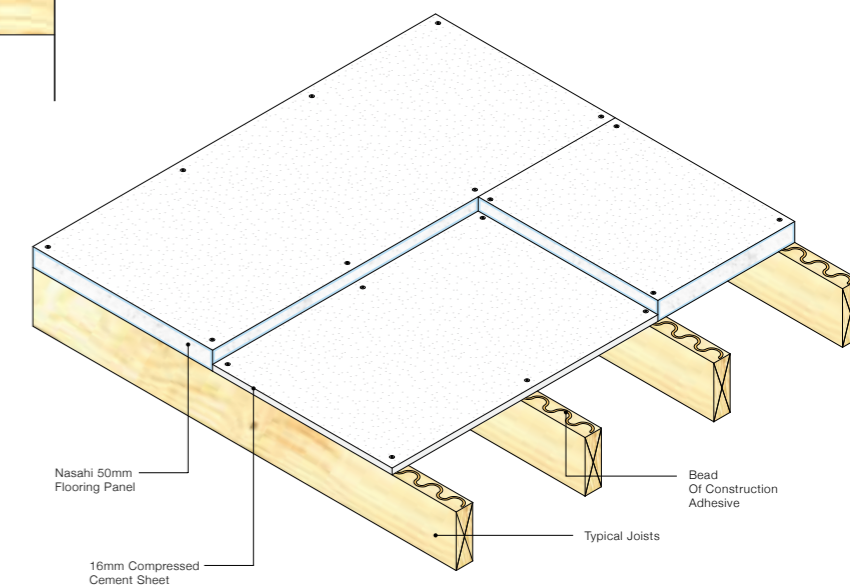
Detail 6.1a Shower Recess (75mm to 50mm)



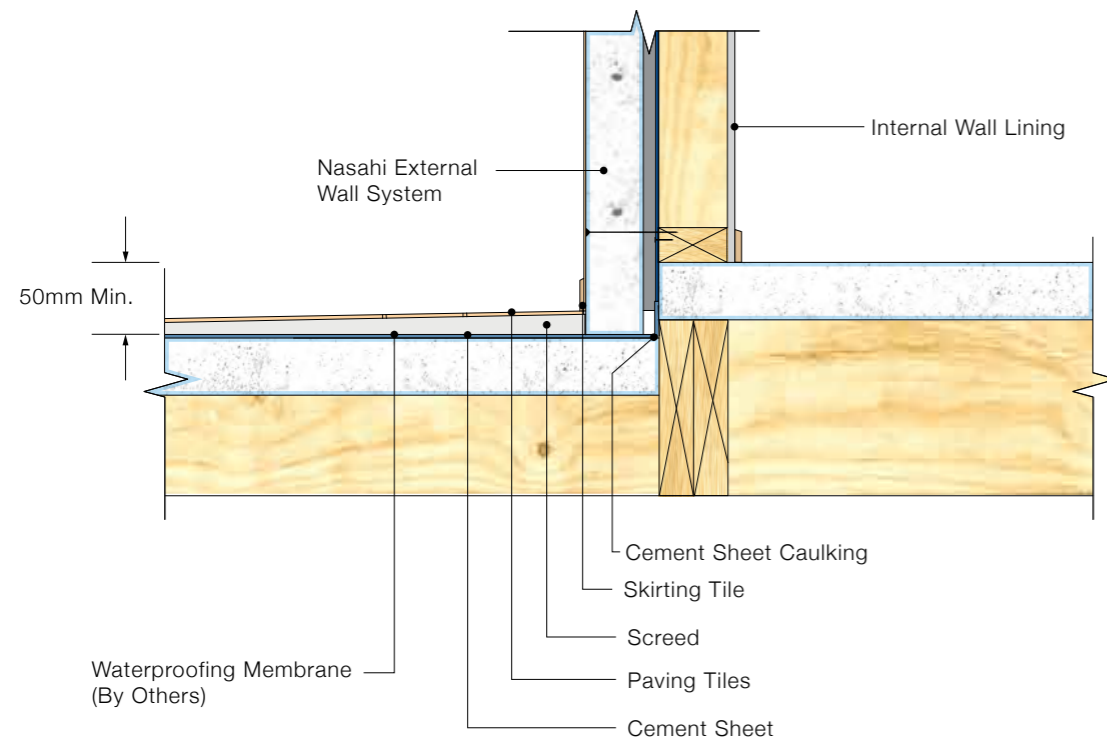
Detail 6.1b Shower Recess Panel Layout (75mm Panel)



Detail 6.2a Shower Recess (50mm)



Detail 6.2b Shower Recess Panel Layout (50mm Panel)



Detail 7.1 Balcony Flooring

Guarantee

Nasahi guarantee the systems described in its literature for 7 years, subject to the terms and conditions of the Nasahi Warranty document 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 Panels, when installed in accordance with this guide, are warranted for a period 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 Products are warranted to not materially degrade, corrode or breakdown during the Term of this warranty (Nasahi Warranty document).

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