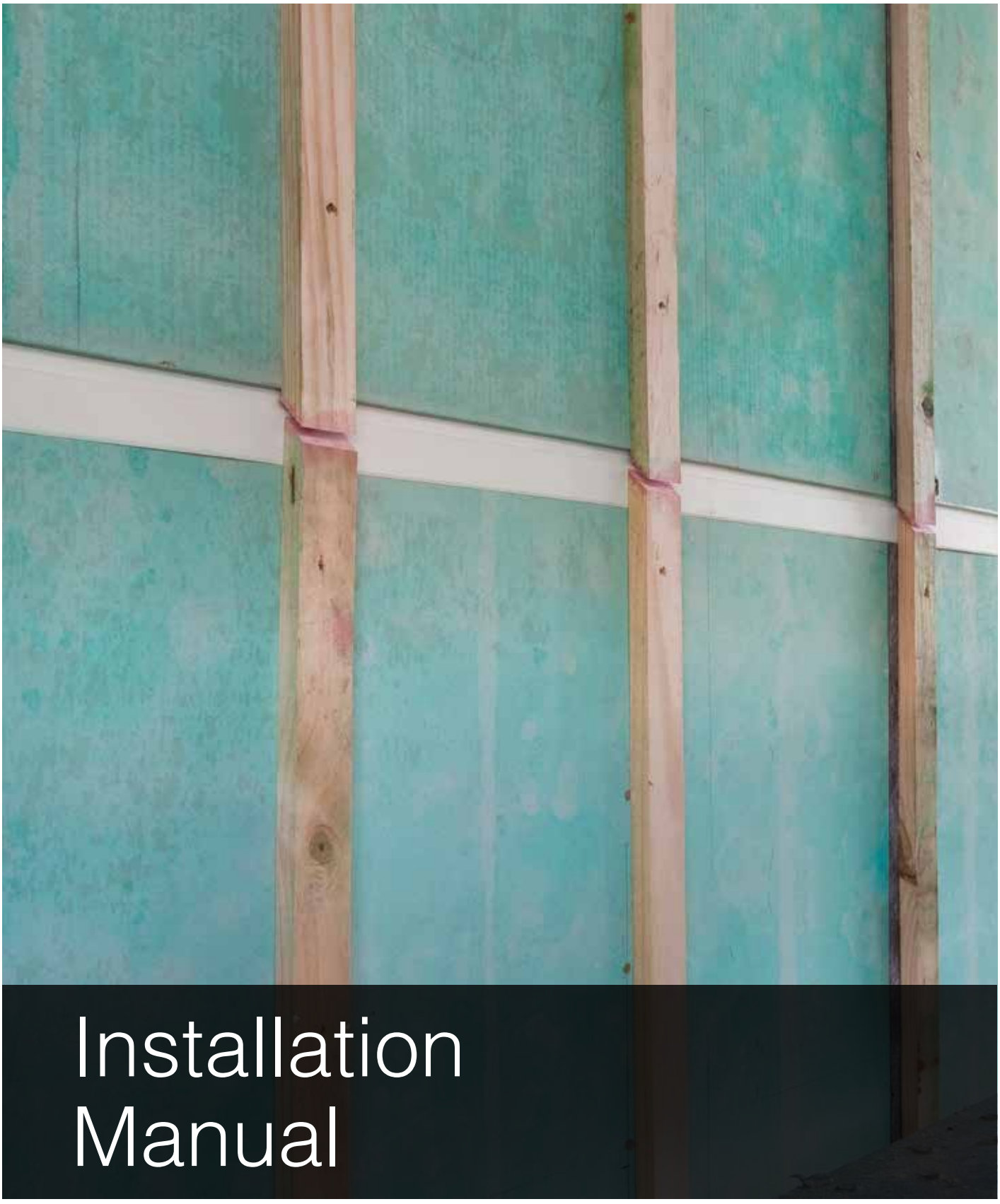
James Hardie
a smarter way™

James Hardie®
RIGID AIR BARRIERS



Installation Manual

APRIL 2016 | NEW ZEALAND

Content

WE VALUE YOUR FEEDBACK

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

Ask James Hardie™
Fax 0800 808 988
literaturefeedback@jameshardie.co.nz

1 Introduction

James Hardie manufactures a range of rigid air barriers such as HomeRAB® Pre-Cladding and RAB® Board.

HomeRAB Pre-Cladding is a 4.5mm thick fibre cement sheet which is sealed on the face and edges and is used as a rigid air barrier for residential buildings within the scope of NZS 3604. HomeRAB Pre-Cladding is manufactured in New Zealand by James Hardie and complies with the requirements of AS/NZS 2908.2.

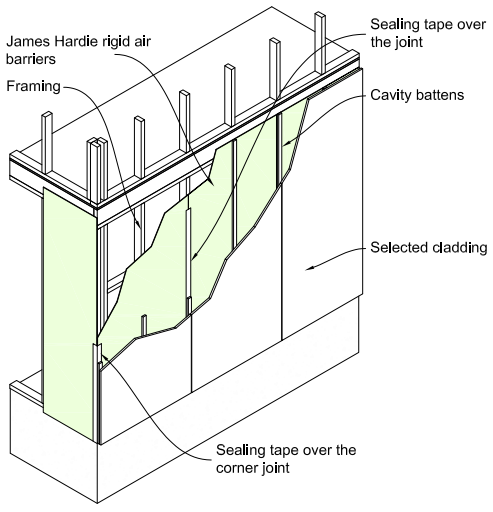
It acts as temporary weather protection during construction, ideal for renovations or new construction. It is suitable for use as rigid underlay in residential buildings as per section 9.1.4 of E2/AS1 and complies with the requirements of Table 23 of E2/AS1. HomeRAB Pre-Cladding is suitable to withstand wind pressures experienced in all wind zones up to and including Very High (VH) wind zone as specified in NZS 3604. HomeRAB Pre-Cladding doesn't get fatigued or tear under the wind pressures exerted on it in the long term. HomeRAB Pre-Cladding has been tested to withstand wind pressures up to VH wind zone.

RAB Board is a 6.0mm thick fibre cement sheet which is sealed on the face and edges and is suitable for use as a rigid air barrier in Extra High Wind (EH) zones or in wind pressures up to 4.5kPa.

It complies with the requirements of Table 23 of E2/AS1.

It is suitable for use as rigid underlay as per the requirement of section 9.1.4 of E2/AS1. RAB Board is also suitable to withstand high wind pressures experienced on building facades where it creates a wind barrier which equalises pressure within the cavity to the external pressures. Flexible underlays can deteroirate caused by positive/negative pumping actions created by gusting winds within the cavity and on building facade.

Figure 1: James Hardie Rigid Air Barriers over framing



Selected Cladding Over Framing

Due to these pressures a building underlay may not perform as desired in the long term. RAB Board has been tested to withstand wind pressures up to 4.5kPa(ULS).

James Hardie rigid air barriers provide the following benefits:

- Resistant to moisture damage and rotting when installed correctly.
- Integral sealer applied on the face and edges repels moisture rapidly and helps resist moisture penetration.
- Provides temporary weathertightness to the building envelope until the final claddings are installed.
- Provides general rigidity to the entire structure.
- An efficient way to achieve structural bracing.

This manual covers the use of HomeRAB Pre-Cladding and RAB Board in external wall applications only. Further information relating to HomeRAB Pre-Cladding and RAB Board is also available in the following James Hardie design manuals:

- Fire and Acoustic Design Manual.
- Bracing Design Manual.

The Specifier or other responsible party for the project must ensure that the information in this manual is appropriate for the intended application and that specific design and detailing is undertaken for areas which are not covered in this manual.

Note: James Hardie rigid air barriers must not be used as external cladding.

James Hardie rigid air barriers have been tested to comply with the performance requirements of the New Zealand Building Code (NZBC).

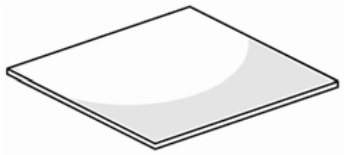
James Hardie rigid air barriers have been BRANZ appraised. This should be read in conjunction with this installation manual. BRANZ Appraisal No. 611 (2011) can be viewed on www.jameshardie.co.nz or www.branz.co.nz.

Make sure your information is up to date

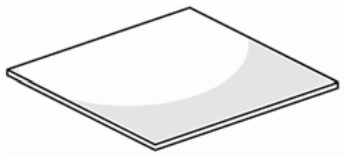
When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or you need more information, visit www.jameshardie.co.nz or Ask James Hardie on 0800 808 868.

Table 1

HomeRAB Pre-Cladding

Product	Description	Quantity / Size		
	**HomeRAB Pre-Cladding** A fibre cement sheet with a green sealer applied on the face and edges. Installed with green side facing out. Approximate Mass: 6.5 kg/m^2	Thickness: 4.5mm		
		Length (mm)	Width (mm)	Code
		2450	1200	**404766**
		2750	1200	**404768**

RAB Board

Product	Description	Quantity / Size		
	**RAB Board** A fibre cement sheet with a green sealer applied on the face and edges. Installed with green side facing out. Approximate Mass: 8.6 kg/m^2	Thickness: 6.0mm		
		Length (mm)	Width (mm)	Code
		2450	1200	**402980**
		3000	1200	**402981**

NOTE:

All dimensions and masses provided are approximate only and are subject to manufacturing tolerances. Masses are based on Equilibrium Moisture Content (EMC) of product.

Table 2

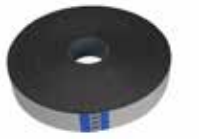
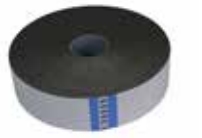
Accessories/Tools			
Components Supplied by James Hardie			
	**HardieBlade™ Saw Blade** 185mm diameter, Poly diamond blade for fast, clean cutting of James Hardie fibre cement. **CODE: 300660**		**Inseal® 3259 Tape 50mm wide** A sealing strip for vertical joints 50m roll. **CODE: 300767**
	**RAB uPVC Horizontal Flashing** 3000mm long for RAB Board horizontal joints **CODE: 305152**		**Inseal® 3259 Tape 80mm wide** A sealing strip for corner joints 50m roll. **CODE: 300769**
	**HomeRAB 4.5 Horizontal Flashing** 3000mm long for horizontal joints **CODE: 305798**		

Table 3

COMPONENTS NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with its James Hardie rigid air barriers. James Hardie does not manufacture these products and does not provide a warranty for their use. Please contact component manufacturer for information on their warranties and further information on their products.

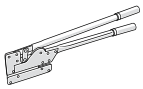
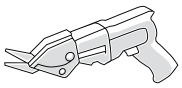
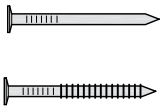
	**Hand Guillotine** Guillotine for cutting fibre cement.		**Sealing Tape/Window Flashing Tape** Tape used to seal vertical joints and flash around window, door and pipe penetrations. **SUPER-STICK Building Tape®** **- Marshall Innovations** **0800 776 9727** **3M™ All Weather Flashing Tape 8067** **3M™ 0800 474 787**
	**Electric Shear / Fibreshear**		
	**Fibre Cement Nails** 40 x 2.8mm hot dipped galvanised HardieFlex™ nails as per Table 4. 40 x 2.8mm stainless steel HardieFlex™ nails as per Table 4.		**Scoring Knife** For easy score and snap cutting of fibre cement sheets.
 	**Nail Gun and Nails** Suitable pneumatic or coil gun nailer with: • 50 x 2.8mm galvanised / stainless steel round head gun nails or minimum length and gauge required for specific application. • 60 x 2.8mm galvanised / stainless steel round head gun nails or minimum length and gauge required for site specific application.		

Figure 2: James Hardie Rigid Air Barriers with Linea Weatherboard

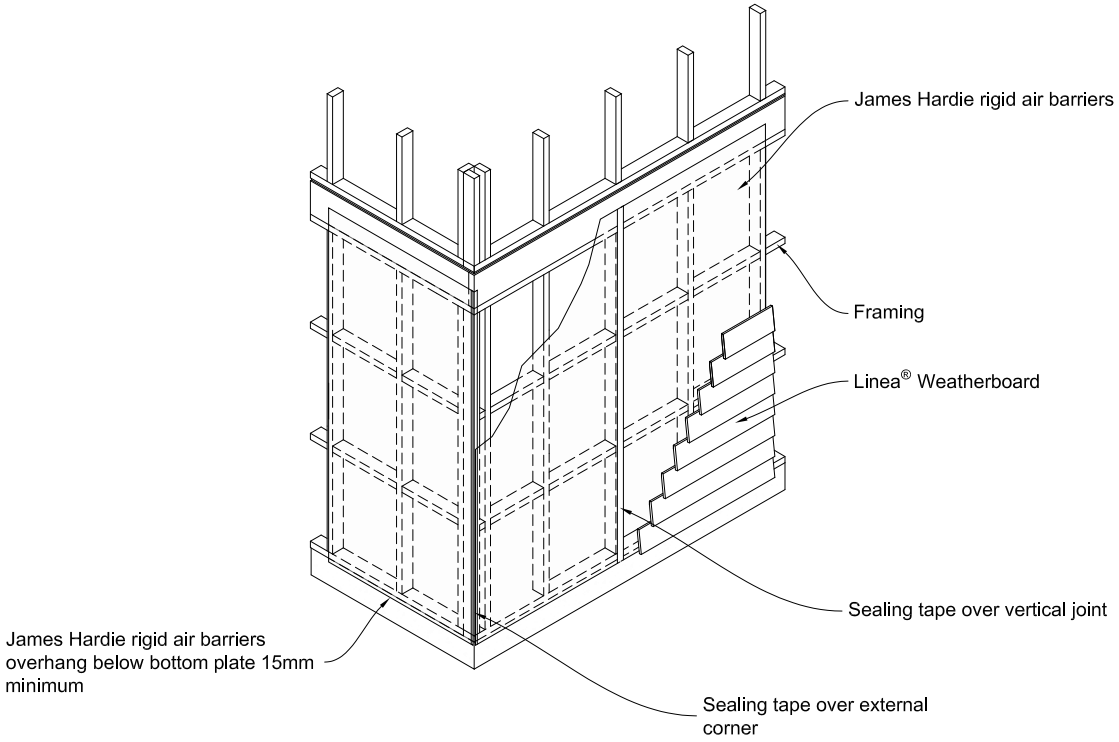
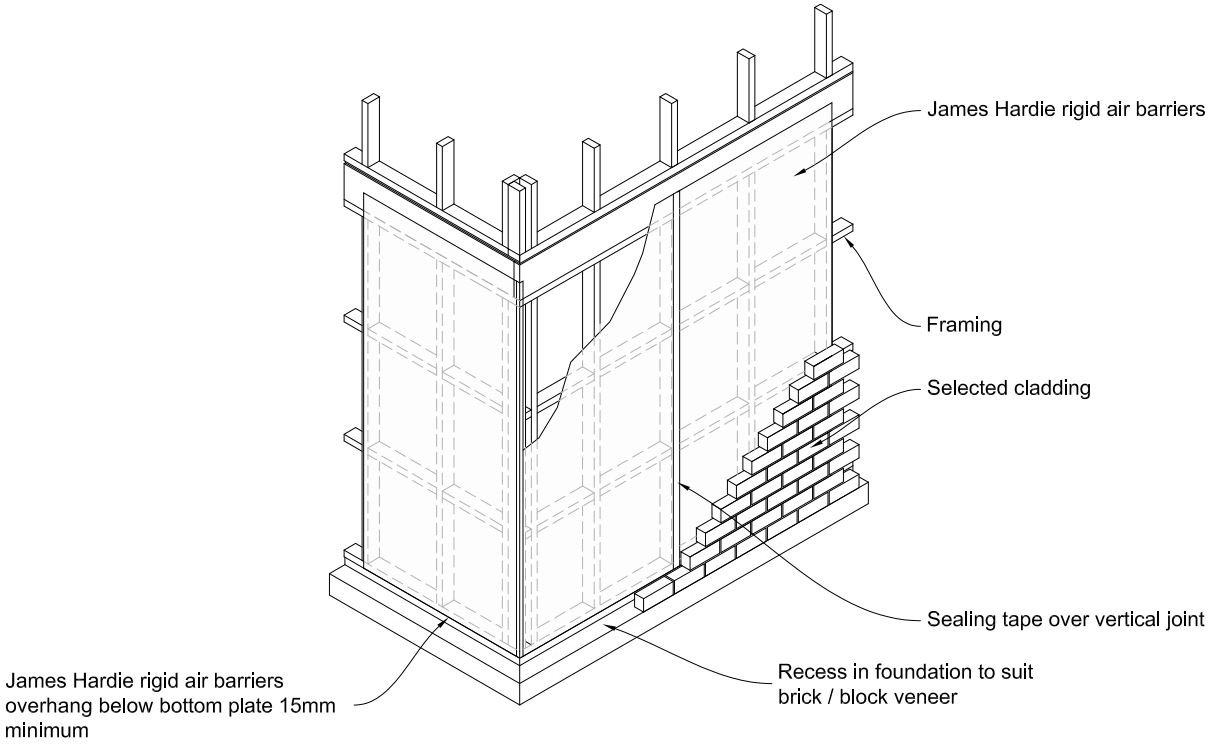


Figure 3: James Hardie Rigid Air Barriers with Brick/Block Cladding



2 Safe working practices

WARNING — DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain sand, a source of respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'Score and Snap' knife, fibre cement shears or, where not feasible, use a HardieBlade™ Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods — never dry sweep. For further information, refer to our installation instructions and Safety Data Sheets available at www.jameshardie.co.nz.

FAILURE TO ADHERE TO OUR WARNINGS, SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTION MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

James Hardie recommended safe working practices

CUTTING OUTDOORS

Position cutting station so that wind will blow dust away from user or others in working area. Use one of the following methods based on the required cutting rate:

BEST
- Score and snap
- Hand guillotine
- Fibreshear

BETTER
- Dust reducing circular saw equipped with HardieBlade™ Saw Blade and HEPA vacuum extraction.

GOOD
- Dust reducing circular saw equipped with HardieBlade™ Saw Blade

CUTTING INDOORS

- Cut only using score and snap, hand guillotine or fibreshears (manual, electric or pneumatic).
- Position cutting station in well-ventilated area

DRILLING/OTHER MACHINING

When drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.

IMPORTANT NOTES:

1. For maximum protection (lowest respirable dust production), James Hardie recommends always using "Best" — level cutting methods where feasible
2. NEVER use a power saw indoors
3. NEVER use a circular saw blade that does not carry the HardieBlade™ logo
4. NEVER dry sweep — Use wet suppression or HEPA Vacuum
5. NEVER use grinders
6. Always follow tool manufacturer's safety recommendations

P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

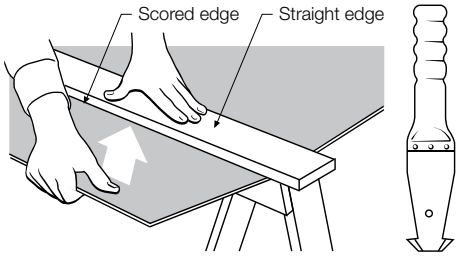
Working instructions

Refer to Recommended Safe Working Practices before starting any cutting or machining of product.

Score and Snap

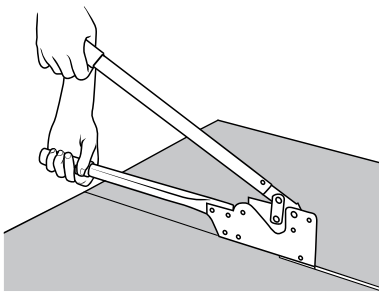
Score and Snap is a fast and efficient method of cutting the product using special tungsten tipped Score and Snap knife.

Preferably score on the face side of the product. Score against a straight edge and repeat the action to obtain adequate depth for clean break — normally 1/3 of sheet thickness. Snap upwards to achieve break. Smooth any rough edges with a rasp.



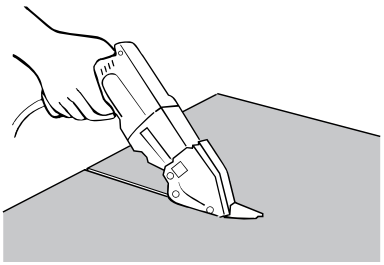
Hand guillotine

Make guillotine cut on the off-cut side of line to allow for the thickness of the blade.



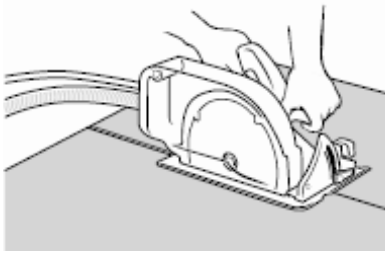
Fibreshear heavy duty

An electrically powered, fast, clean and effortless way of cutting James Hardie building products, especially around curves such as archways. Make Fibreshear cut on the “off-cut” side of the line to allow for the thickness of the shear.



HardieBlade™ Saw Blade

The HardieBlade™ Saw Blade used with a dust-reducing saw fitted with HEPA vacuum filter is ideal for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.



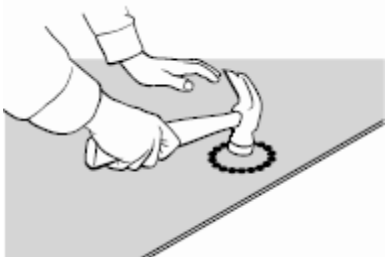
Hole-forming

For smooth clean cut circular holes:

- Mark the centre of the hole on the sheet.
- Pre-drill a ‘pilot’ hole.
- Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.

For irregular holes:

- Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.
- Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.



Storage and handling

To avoid damage, all James Hardie building products should be stored with edges and corners of the sheets protected from chipping.

James Hardie building products must be installed in a dry state and protected from weather during transport and storage. The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water, moisture, etc.

Quality

James Hardie conducts quality checks to ensure any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

3 Applications

HomeRAB Pre-Cladding is suitable for use as a rigid air barrier for residential buildings up to and including VH wind zone within the scope of NZS 3604 and E2/AS1. HomeRAB Pre-Cladding is fixed directly to the framing. The vertical joints are sealed over the face of the HomeRAB Pre-Cladding. HomeRAB Pre-Cladding is suitable for use behind all James Hardie claddings or alternative claddings such as brick, timber weatherboard, EIFS etc.

The **RAB Board** is suitable for use as a rigid air barrier in EH wind zone in residential or SED project applications to withstand high wind pressures in conjunction with cladding/commercial facades. In these applications, RAB Board is fixed directly to the framing. The vertical joints are sealed over the face of the RAB Board using joint flashing tape.

JAMES HARDIE RIGID AIR BARRIER

James Hardie rigid air barriers can remain exposed to the external elements for maximum 90 days prior to the external cladding being installed.

The James Hardie rigid air barriers can be used as a backing board behind stucco plasters. Refer to James Hardie Stucco Solution technical specification, E2/AS1 'External Moisture' clause of the NZBC and BRANZ 'Weathertight Solutions Stucco' for further information on stucco plaster. The RAB Board can also be used as a backing board behind other proprietary claddings which comply with the NZBC requirements. Proprietary cladding must be installed as per their manufacturing specifications. In these applications, a building underlay must be used as a slip layer to cover RAB Board and ensure a separation between mortars and RAB Board. The RAB Board is fixed over a minimum 18mm thick cavity batten for these applications. The RAB Board may also be required over the framing to withstand high wind pressures within the cavity.

The claddings/facades used over James Hardie rigid air barriers must satisfy the various performance requirements of the NZBC.

Horizontal profiled metal and uPVC claddings must not be direct fixed over James Hardie rigid air barriers. These must be fixed over an underlay or overlay the James Hardie rigid air barrier using the cavity construction method.

Vertical profiled metal cladding can be direct fixed over James Hardie rigid air barriers with a flexible building underlay separator over to comply with manufacturers recommendations.

The cladding fastener length must be increased by 5mm minimum to maintain the required nail pull out strength.

In case of gable end trusses sitting on top plates of external wall frame, the frame size must comply with the minimum timber sizes stipuated for wall frames in Section 8 of the NZS 3604.

Bracing

For bracing application the James Hardie rigid air barriers must be installed as per HomeRAB Pre-Cladding/RAB Board bracing details in the James Hardie Bracing Design Manual. Bracing with HomeRAB Pre-Cladding can only be achieved for direct fix construction. Bracing can be achieved for both construction methods i.e. direct fixed and cavity construction using RAB Board. The board must be fixed with 40 x 2.8mm HardieFlex nails at 150mm c/c to all framing. For further information on bracing refer to James Hardie Bracing Design Manual or Ask James Hardie on 0800 808 868.

Fire Rated Wall Construction

RAB Board is classified as 'Non-Combustible Material'. For fire rated wall applications RAB Board must be installed as per the current James Hardie Fire and Acoustic Design Manual. RAB Board is suitable to achieve fire ratings up to 60 minutes when installed in accordance with fire systems specifications published in James Hardie Fire and Acoustic Design Manual. The board must be fixed with 40 x 2.8mm HardieFlex nails at 150mm c/c to all framing.

TEMPORARY WEATHER PROTECTION

Installation of internal lining can be started after James Hardie rigid air barriers have been installed on the exterior of the building envelope. In order to achieve this, all sheet joints and penetrations must be sealed and the roof, soffit lining, windows/doors (including head flashings and airseals) must have been installed to ensure the building is weathertight before starting the installation of internal linings. The insulation, electrical cables, plumbing and any other services required in external walls must be installed and inspected by the building consent authority before starting the installation of internal linings. The internal lining and services must be installed in accordance with their manufacturer's product literature and comply with the NZBC requirements.

The claddings must be installed within 90 days after the installation of James Hardie rigid air barriers.

STUD TO TOP PLATE FIXING

Alternative stud to top plate connection refer to Figure 15.

4 Framing and fixings

FRAMING

The timber framing must be in accordance with the current relevant standards or comply with the specific engineering design requirements. The timber treatment and moisture content must comply with NZBC Acceptable Solution B2/AS1 requirements. Framing must satisfy the requirements of B1 and B2 clauses of the NZBC.

The minimum framing size required for fixing James Hardie rigid air barriers is 90 x 45mm. Studs must be provided as per Table 4. Ensure that the framing is suitable for installing the selected cladding. Refer to cladding installation manual for further information about the framing requirements.

For specific engineering design projects where the timber framing differs from whats been provided in this manual, Ask James Hardie on 0800 808 868.

FIXINGS

James Hardie rigid air barriers must be installed with its sealed face towards the external cladding and unsealed face towards the framing. The sealer applied on the face helps the board to drain the moisture freely over the face and keeps it dry.

- Nails must finish flush with board surface.

The **HomeRAB Pre-Cladding and RAB Board** is fixed as described below.

HomeRAB Pre-Cladding and RAB Board can either be gun nailed or hand nailed. It is recommended to use gun nails to cut down installation time. When gun nailing, follow nail gun manufacturer's instructions for correct operation of tool and site safety requirements.

- Nails must have a minimum clearance of 12mm from the sheet edges and a minimum of 50mm horizontally and 75mm vertically from the sheet corners.
- When using a nail gun use 50 x 2.8mm round head gun nails. The gun nails used must have a full round head to provide the required holding power.

  NOTE: Do not use D Head nails. Do not use gun nailing for bracing applications.
- When fixing for bracing applications, follow the bracing details for installation provided in James Hardie Bracing Design Manual.
- When using as a backing board over a cavity batten for stucco plasters or proprietary claddings, fix using 60 x 3.15mm HardieFlex nails at 200mm c/c at board edges and intermediate framing.
- When RAB Board is used for a fire rating system, the board must be fixed with HardieFlex nails at 150mm c/c at board edges and intermediate framing.

NOTE: HomeRAB Pre-Cladding must not be used in EH wind zones. Use RAB Board instead.

Table 4

Fixings			
Wind pressures	**Stud centres max**	**Type of nail**	**Nailing centres to all framing**
HomeRAB Pre-Cladding / RAB Board			
Up to VH wind zone	600mm	40 x 2.8mm HardieFlex nail	200mm
RAB Board			
Above 1.5kPa to 4.5kPa (EH wind zone and SED project)	400mm	40 x 2.8mm HardieFlex nail	200mm

FASTENER DURABILITY

Fasteners must have the appropriate level of durability required for the intended project to comply with the NZBC. This is of particular importance in coastal areas, areas subject to salt spray and other corrosive environments. The following table provides the information regarding the types of nails to use to comply with the durability requirements of the NZBC.

Table 5

Exposure conditions and nail selection prescribed by NZS 3604			
ZONE:	D Zone*	Zone C outside sea spray zone and Zone B and Geothermal hot spots	Bracing — outside sea spray
NAIL MATERIAL:	Grade 316 Stainless steel	Hot-dipped galvanised** or grade 316 stainless	Hot-dipped galvanised**

*Zone C areas where local knowledge dictates that increased durability is required are to be classified as sea spray zones. Also where the cladding is expected to meet 50 year durability, HomeRAB Pre-Cladding/RAB Board must be fixed with stainless steel nails.

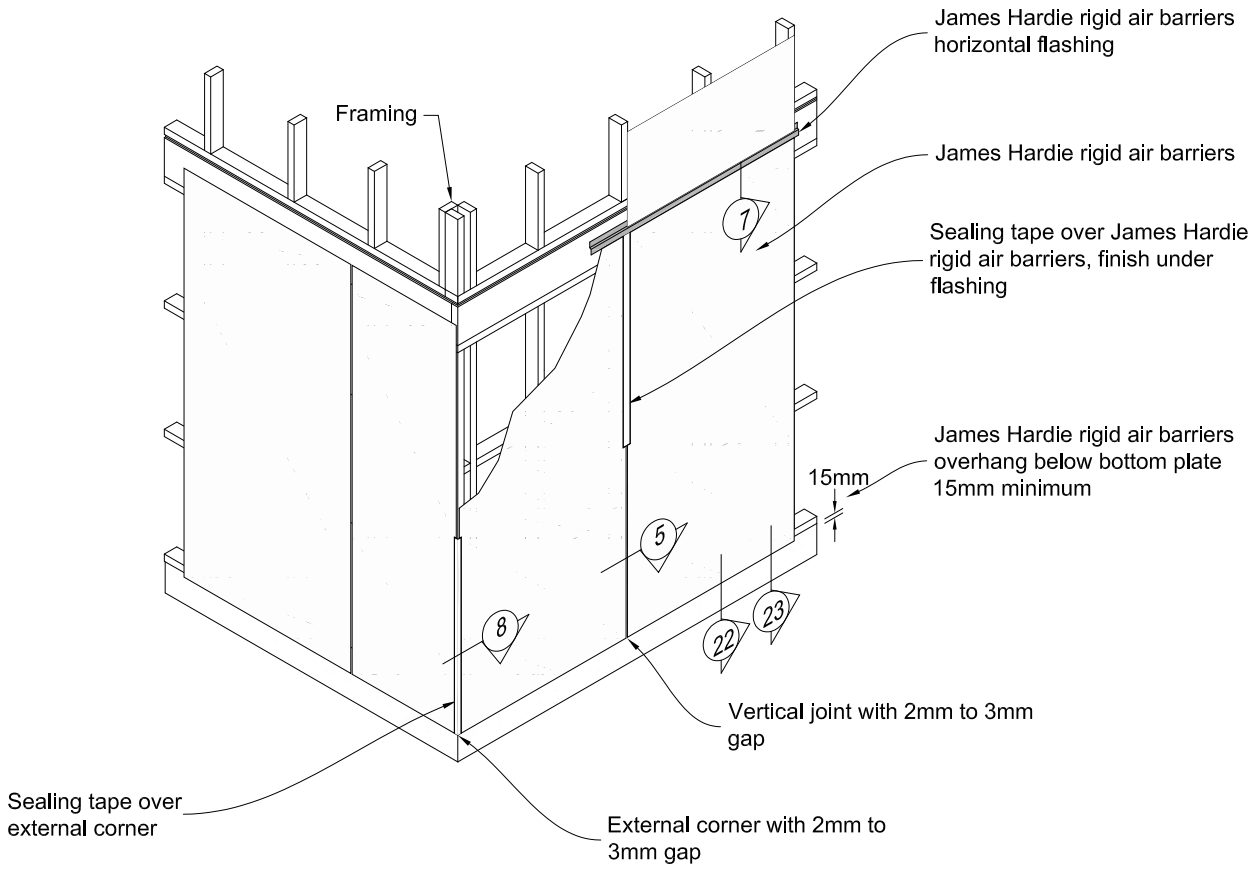
** Hot dip galvanised must comply with AS/NZS 4680

Check with the local Territorial Authority if unsure. Refer to fixing manufacturer for warranty and fixing installation guidance.

Fasteners must be fully compatible with all other materials that they are in contact with to ensure the durability and integrity of the assembly. Contact fastener manufacturers for more information. Also refer to Table 20 and 21 of E2/AS1 for further information about the suitable fastening materials and their compatibility with other materials.

Galvanised nails can be used for bracing when in non coastal zones.

Figure 4: James Hardie Rigid Air Barriers layout



5 Installation

BOARD LAYOUT

When using James Hardie rigid air barrier, building underlays are not required over the framing. HomeRAB Pre-Cladding/ RAB Board has been tested and complies with the performance requirements of Table 23 of Clause E2 of the NZBC. The sheets are jointed keeping a gap of 2-3mm maximum between the sheet edges. The board must be cleaned of any dust before fixing the jointing tape over the joint.

Cut edges where exposed must be primed prior to installation with Dulux® Primacryl, Resene Quick Dry or similar.

The bottom edge of James Hardie rigid air barriers must overhang below the bottom plate by 15mm minimum. Refer Figures 21 and 22.

Vertical Joints

Vertical joints must be sealed to stop the moisture ingress into the framing behind James Hardie rigid air barrier. The vertical joints are sealed over by running a 75mm wide sealing tape e.g. SUPER-STICK Building Tape / 3M All Weather Flashing Tape 8067.

A 50mm wide Inseal 3259 sealing tape can also be used where the CLD Structural Cavity Batten or timber cavity battens are fixed over the joint. The Inseal tape gets compressed permanently under the cavity battens to seal the joint.

Inseal tapes must not be left exposed. Battens must be installed within 24 hours of the Inseal tape installation for the compression to happen. White protective tape must be removed before batten installation.

The sealing tapes must be pressed hard over the James Hardie rigid air barriers surface while fixing so that they achieve the required bond. The sealing tapes must not be exposed to elements for more than 90 days. This achieves the required protection when the cladding is installed. The claddings must be installed within 90 days.

NOTE: Refer to sealing tape manufacturers recommendations regarding the installation of their sealing tapes in cold climate conditions. It is recommended to warm up the sealing tapes eg when the air and substrate temperatures are below 10°C. Check with tape manufacturer for their recommendations

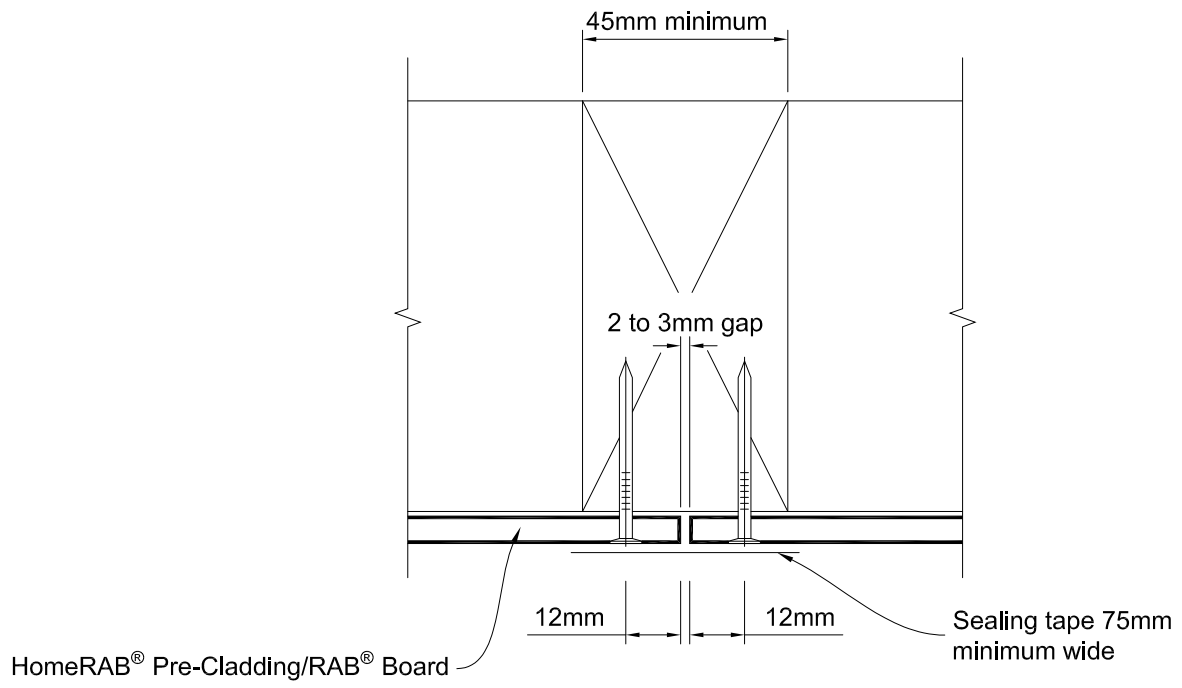
Horizontal Joints

The horizontal joint of James Hardie rigid air barriers must be flashed using a uPVC horizontal flashing or alternatively aluminium or colour steel Z flashings can also be used. Refer Figure 7. Leave a gap of minimum 15mm at the solid timber floor joist or as specified by the project engineer. The flashing must be lapped by a minimum 35mm on both sides of the joint.

For walls longer than 3m, horizontal uPVC flashing must be lapped by 50mm minimum and silicone sealed.

Rigid air barriers must not be fixed into floor joists.

Figure 5: Vertical joint



Internal/External Corners

James Hardie rigid air barrier corner joints must be sealed using a 75mm minimum wide sealing tape. A 80mm wide Inseal 3259 sealing tape can also be used where the cavity battens are fixed over the corner joint to compress the Inseal tape.

When using a uPVC horizontal flashing in horizontal joints, the internal and external corner flashing joints must be sealed using a 75mm minimum wide joint sealing tape. Refer Figure 10.

When using James Hardie rigid air barrier as a backing board for stucco plaster, the vertical joints of James Hardie rigid air barrier are not required to be sealed using flashing tapes. The horizontal joints at floor level and in tall walls must be flashed to satisfy the requirements of clause E2 of the NZBC.

Figure 6: Horizontal joint flashing

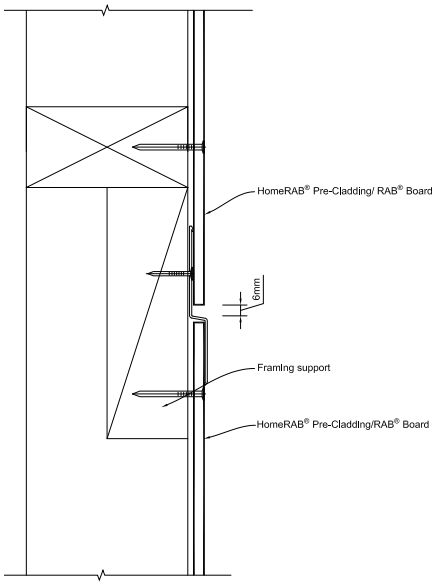


Figure 7: Horizontal joint

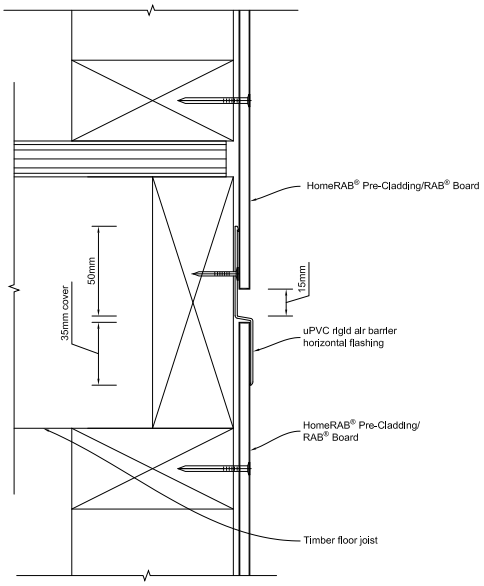


Figure 8: External corner joint

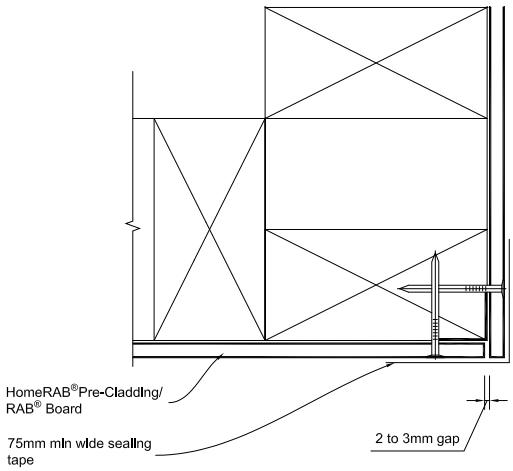


Figure 9: Internal corner joint

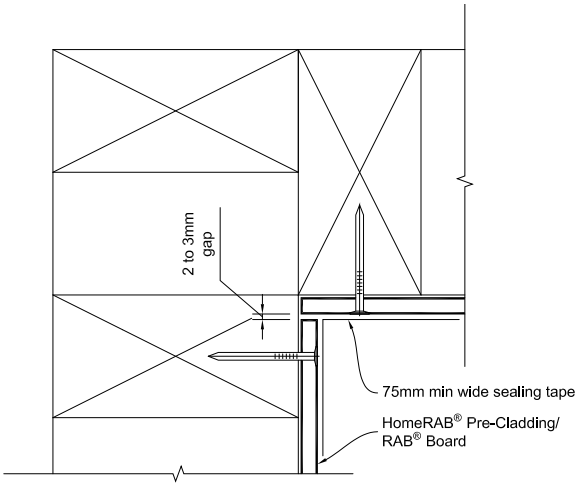


Figure 10a: Corner junction to horizontal joint

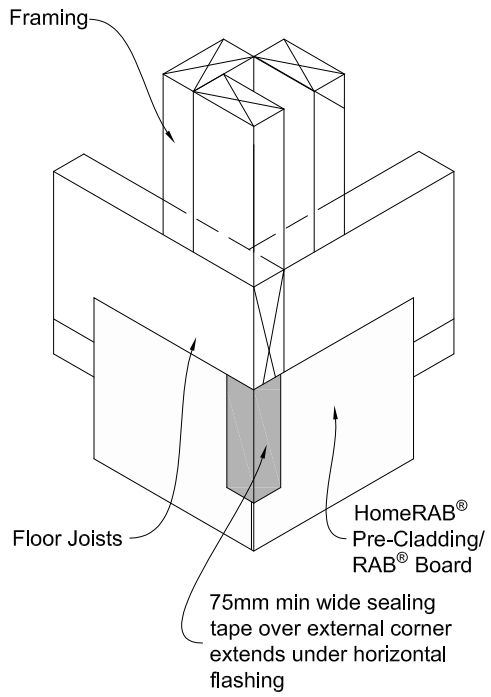


Figure 10b: Corner junction to horizontal joint

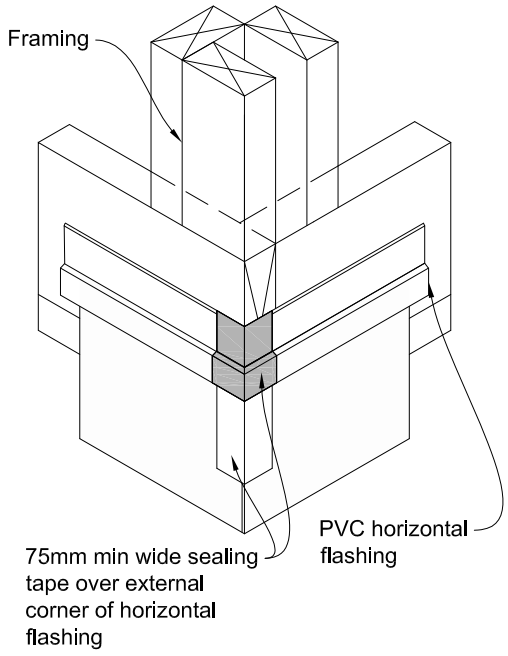
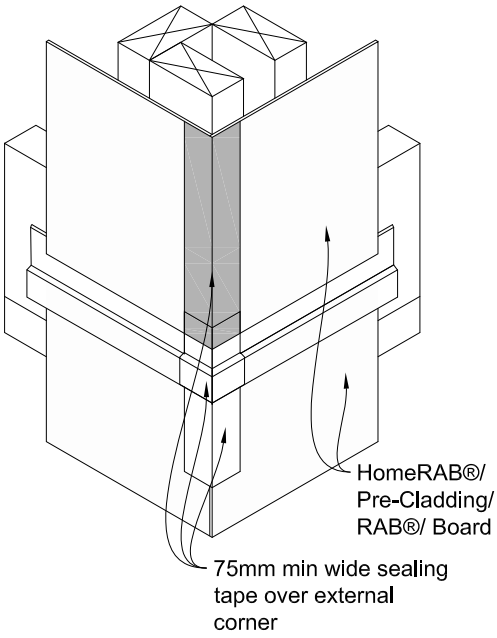


Figure 10c: Corner junction to horizontal joint



Flexible Underlay

James Hardie rigid air barriers can also be used in conjunction with flexible underlay in accordance with Section 9.1.7.2 of E2/AS1. When installing rigid underlay as per E2/AS1 requirements, its horizontal and vertical joint does not require to be sealed with flashing tapes, but instead, a flexible underlay is applied over the entire rigid air barrier in accordance with Section 9.1.7.1. The flexible underlay must comply with Table 23 of E2/AS1. The wall openings must be flashed in accordance with E2/AS1 and this installation manual.

Figure 11: RAB Board used as backing board for stucco plaster/proprietary cladding systems

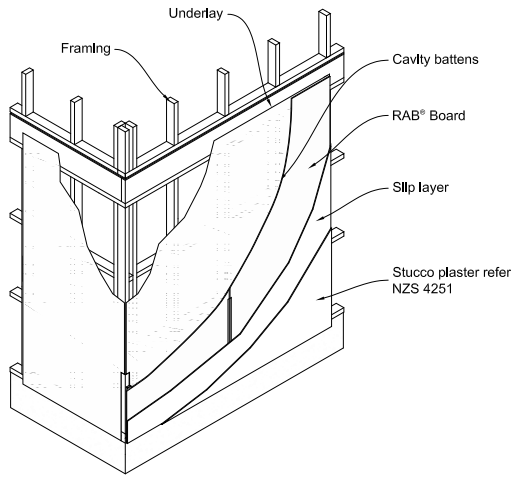


Figure 12: James Hardie Rigid Air Barriers to standard soffit

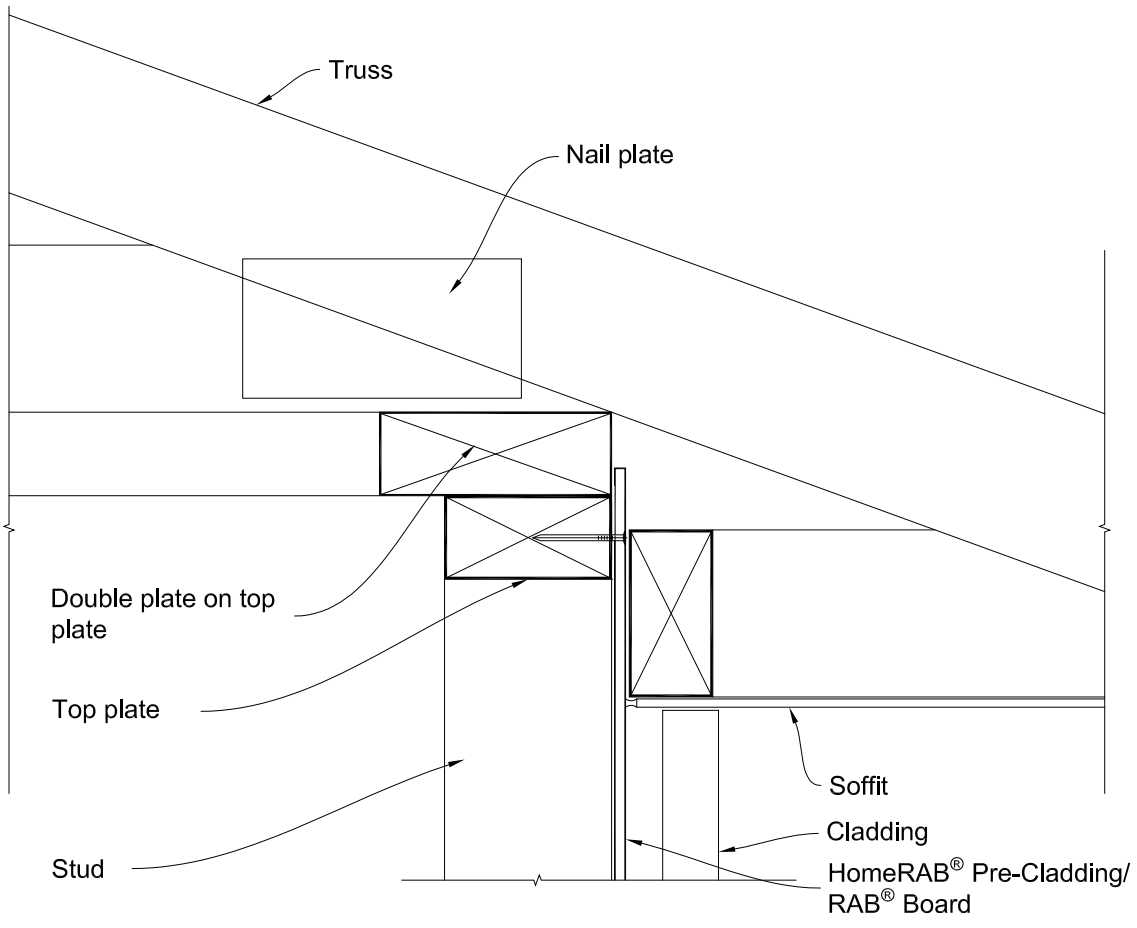
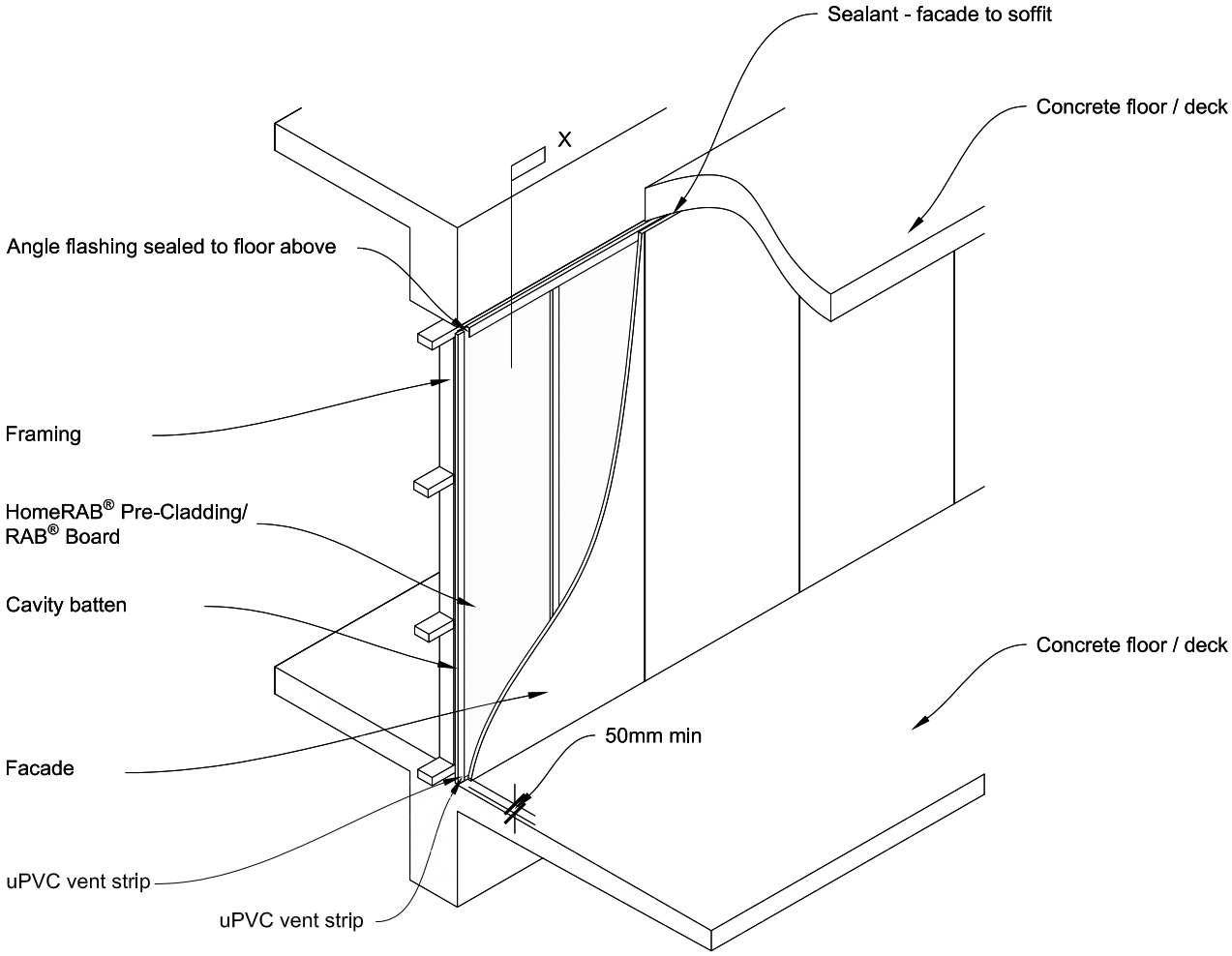
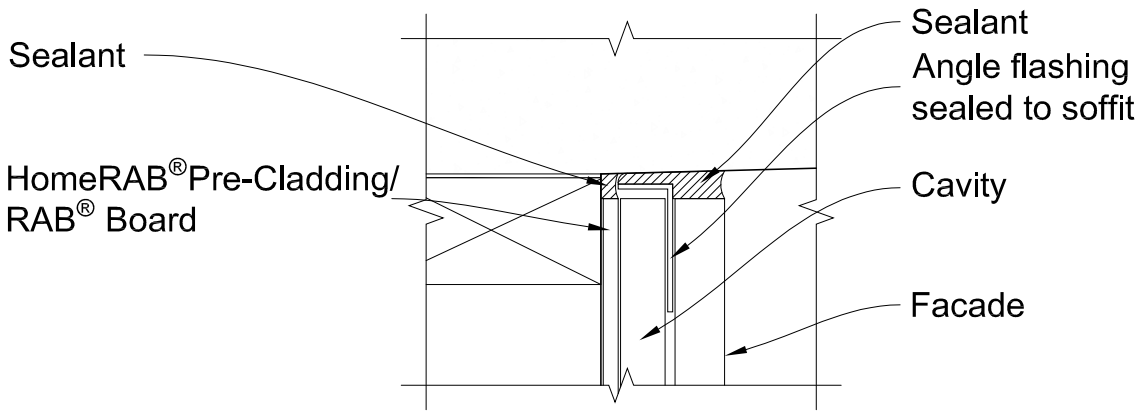


Figure 13: RAB Board to soffit junction/concrete



Note:
Check facade manufacturer for clearances

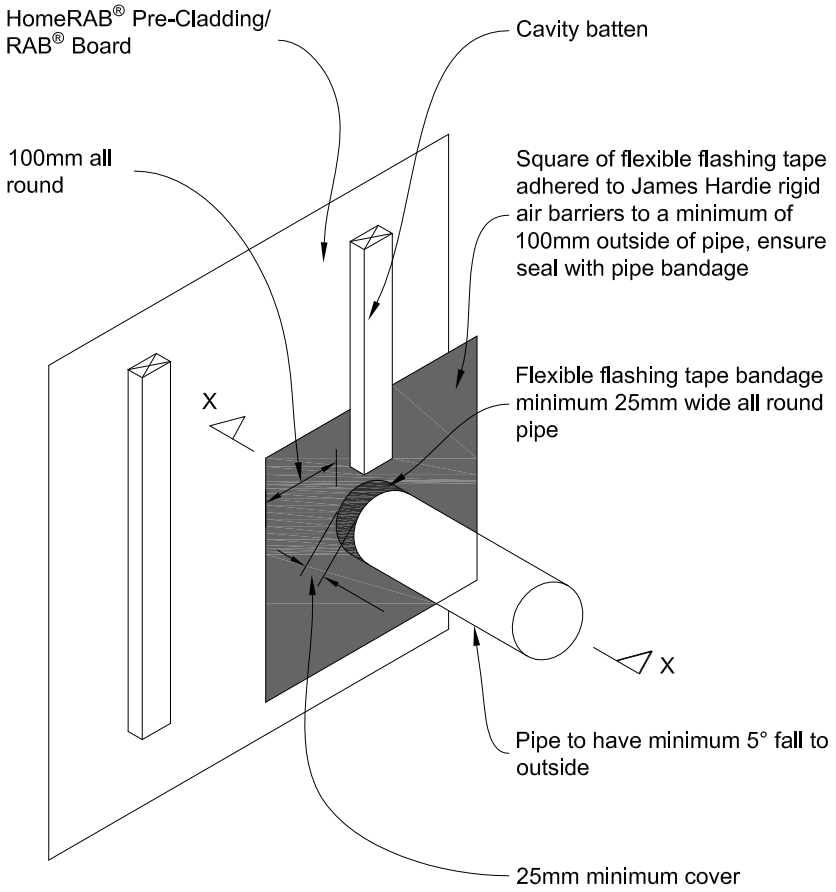


Section X

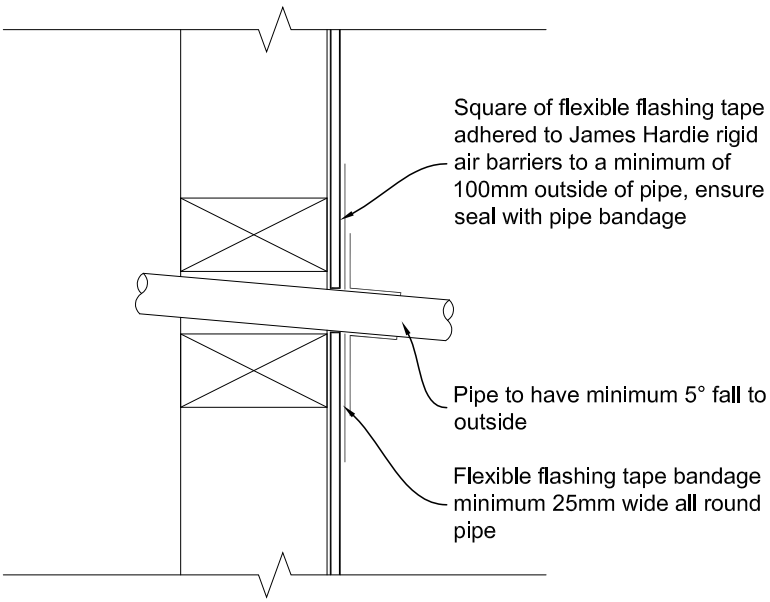
Penetrations

The pipe penetrations through James Hardie rigid air barrier must be sealed properly using a flexible flashing tape. Maintain a 100mm minimum cover of flashing over the board around the penetration.

Figure 14: Pipe penetration through James Hardie Rigid Air Barriers

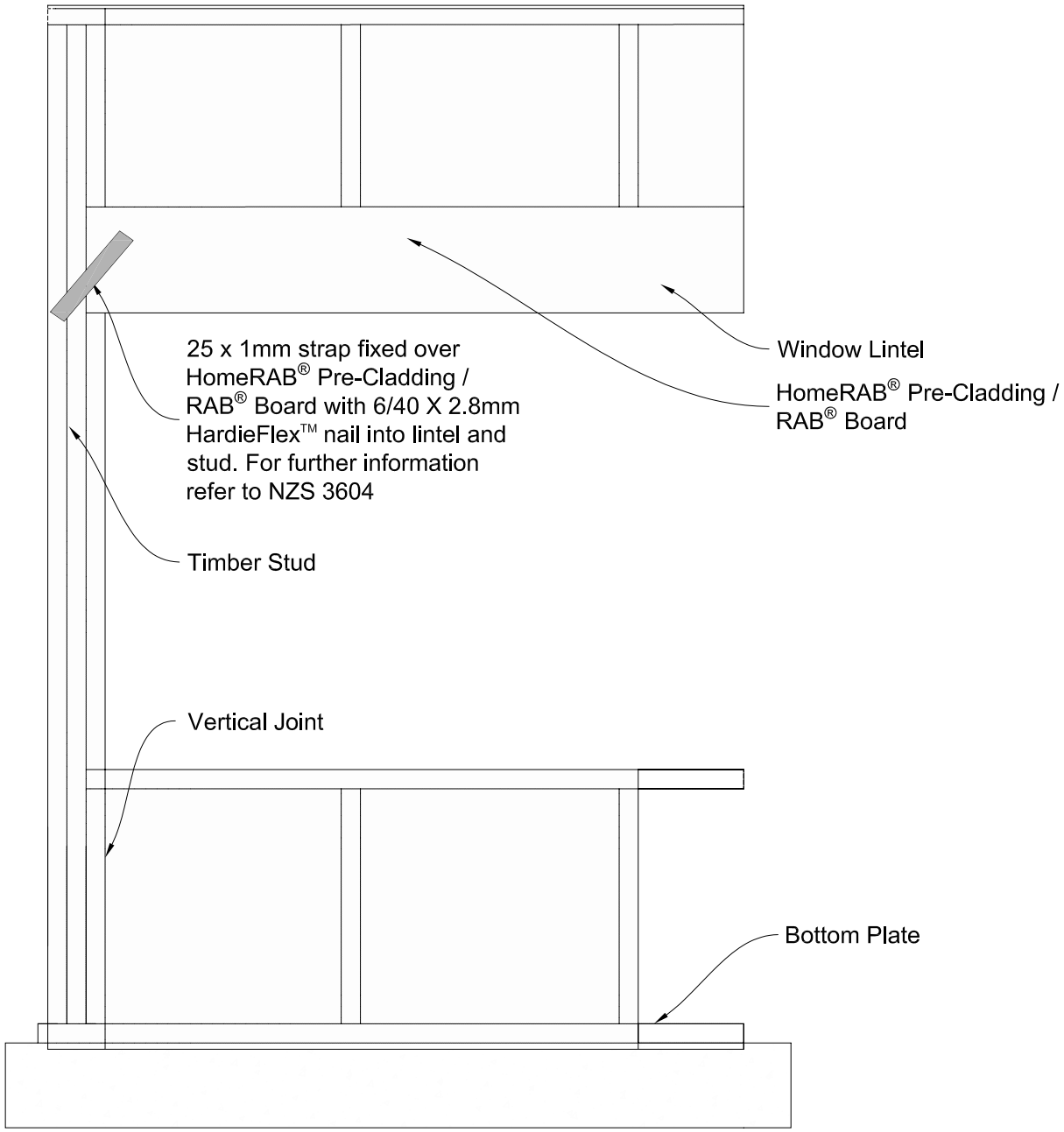


Note: Also refer to Figure 60 of E2/AS1 for information on pipe penetrations.



Section XX

Figure 15: Lintel connection



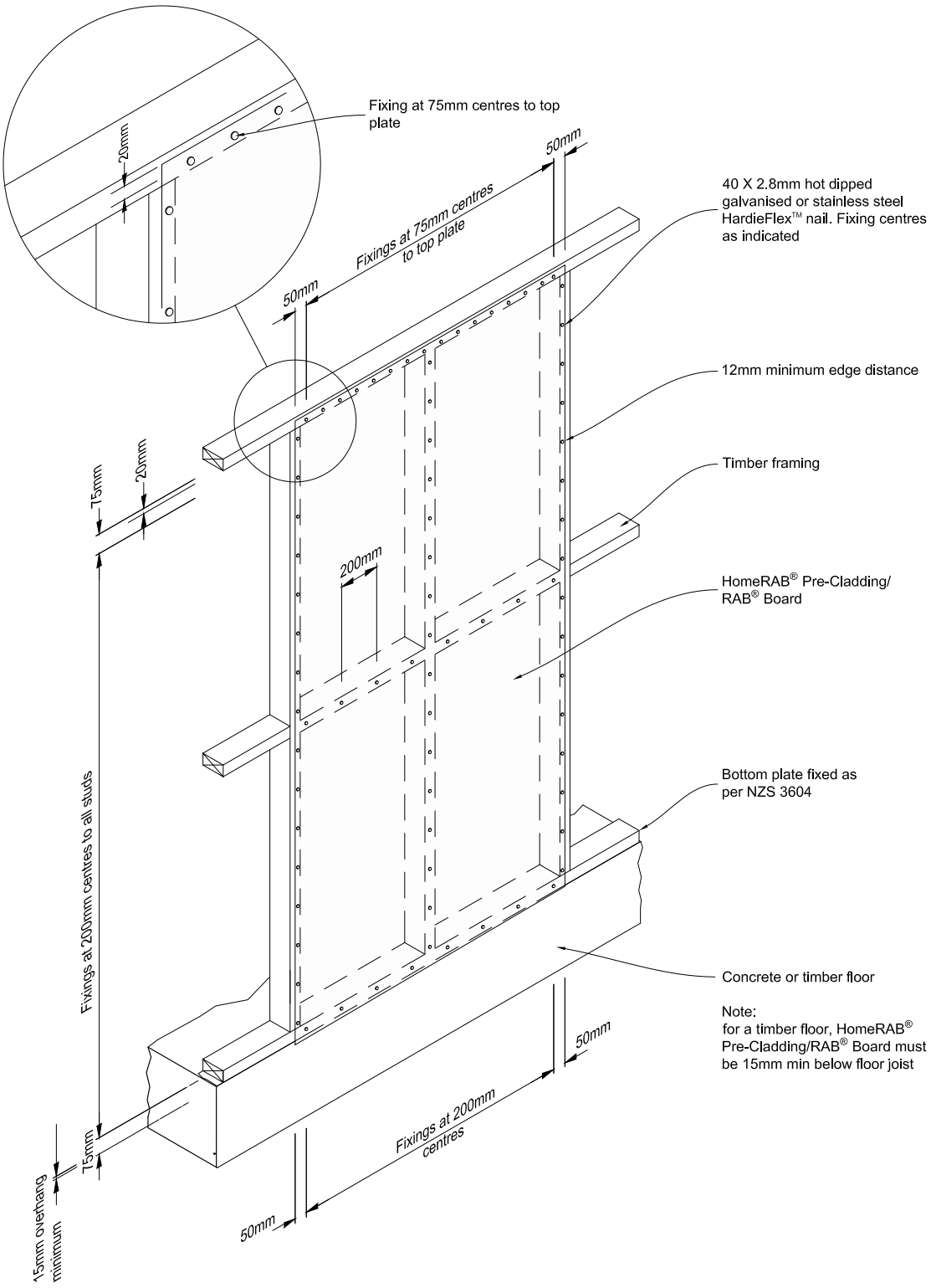
STUD TO TOP PLATE FIXING

Table 8.18 of NZS 3604 specifies two types of fixings i.e. Type-A with a fixing capacity of 0.7kN and Type-B with a fixing capacity 4.7kN. HomeRAB Pre-Cladding or RAB Board rigid air barriers have been tested and are verified as suitable alternatives to achieve the required stud top plate connectivity as mentioned above and no special use of straps/plates or wire dogs etc. is required.

For a 0.7kN connectivity, the standard fixing of HomeRAB Pre-Cladding and RAB Board using 40 x 2.8mm HardieFlex nails at 200mm centres maximum will achieve this.

For a 4.7kN connectivity, fix HomeRAB Pre-Cladding or RAB Board using 40 x 2.8mm HardieFlex nails at 75mm centres maximum to top plate with a minimum edge distance of 20mm. Refer to Figure 15.

Figure 16: Stud to top plate connection



Flashings

The exposed timber framing around the window jamb can either be covered with a 150mm minimum wide flashing tape / sealing tape, refer Figure 19, or the jamb can be covered with a building underlay, refer Figure 20. The window sill must be dressed with a 150mm minimum wide flashing tape. The tape is sealed over the face of James Hardie rigid air barrier, refer Figure 16.

The James Hardie rigid air barrier surface must be clean, free of grime and dry before the tapes are applied. Some tape manufacturers require a primer tak spray be applied before fixing the tapes to the board surface to achieve a better tape adhesion. Check with the tape manufacturers for further information regarding minimum requirements etc.

Figure 17: Window flashing

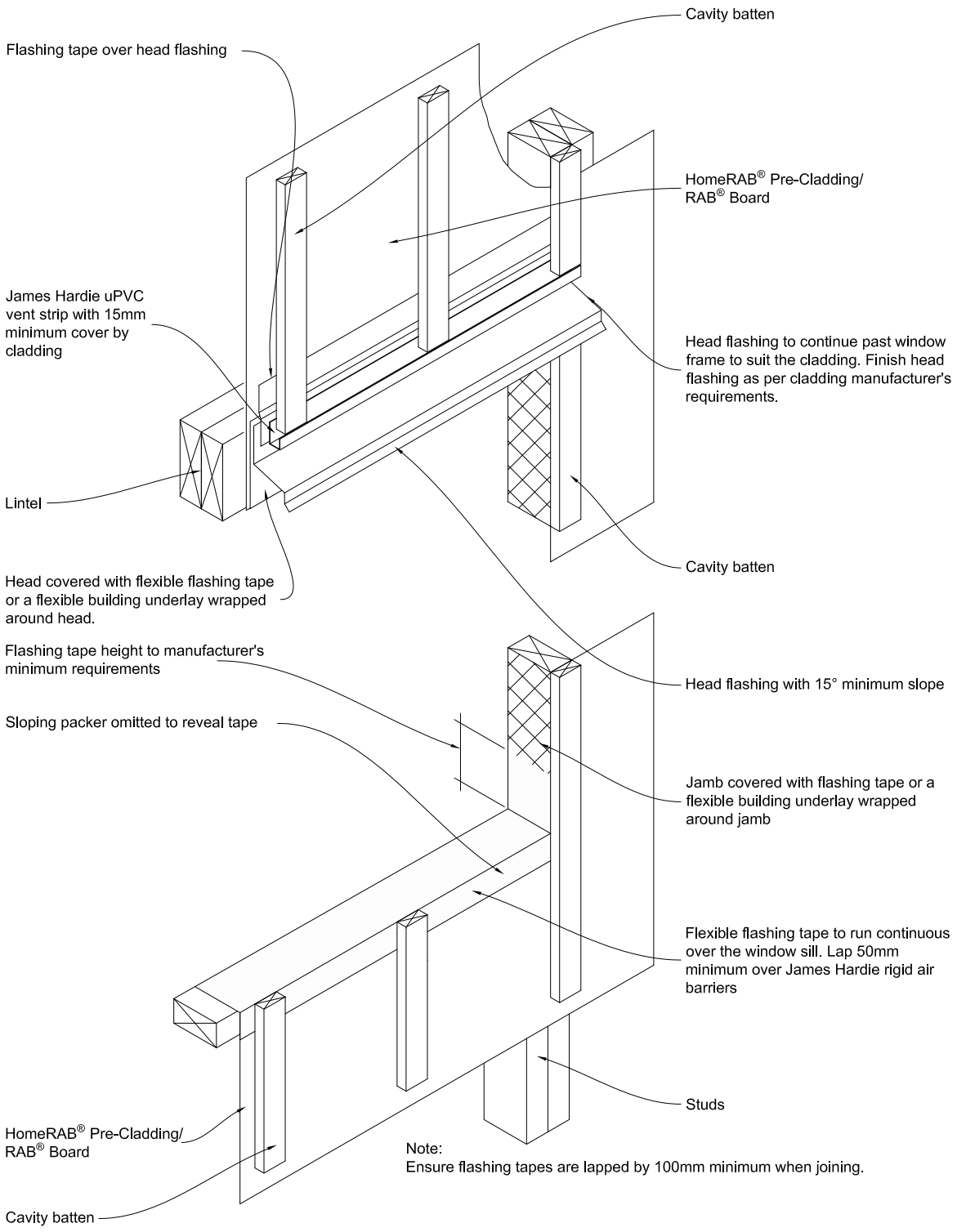
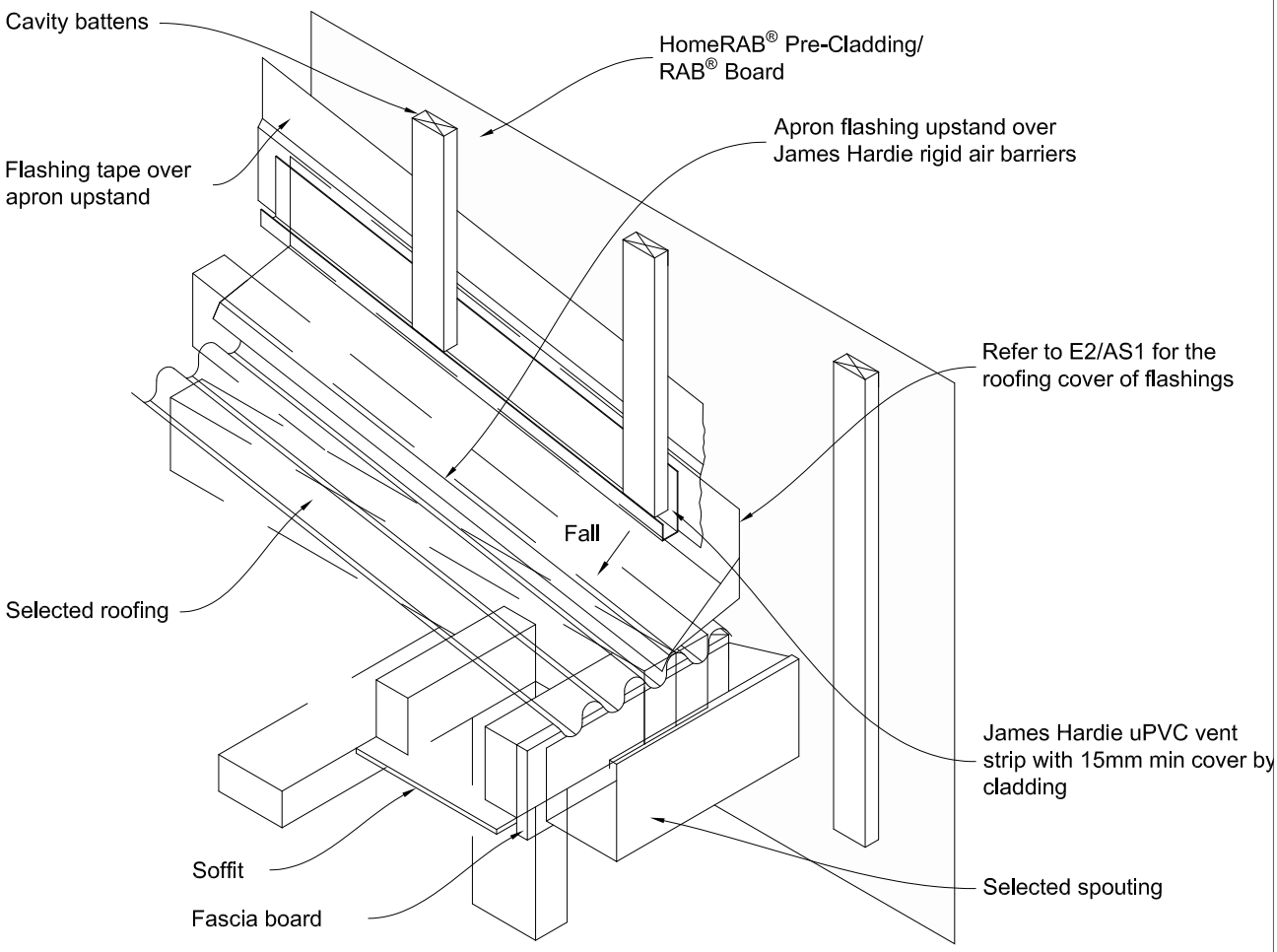


Figure 18: Apron flashing



Balustrade to Wall Junctions

The junctions between balustrades to wall should be appropriately flashed. Refer to E2/AS1 of the NZBC for information and flashing details.

Figure 19: Flashing at balustrade

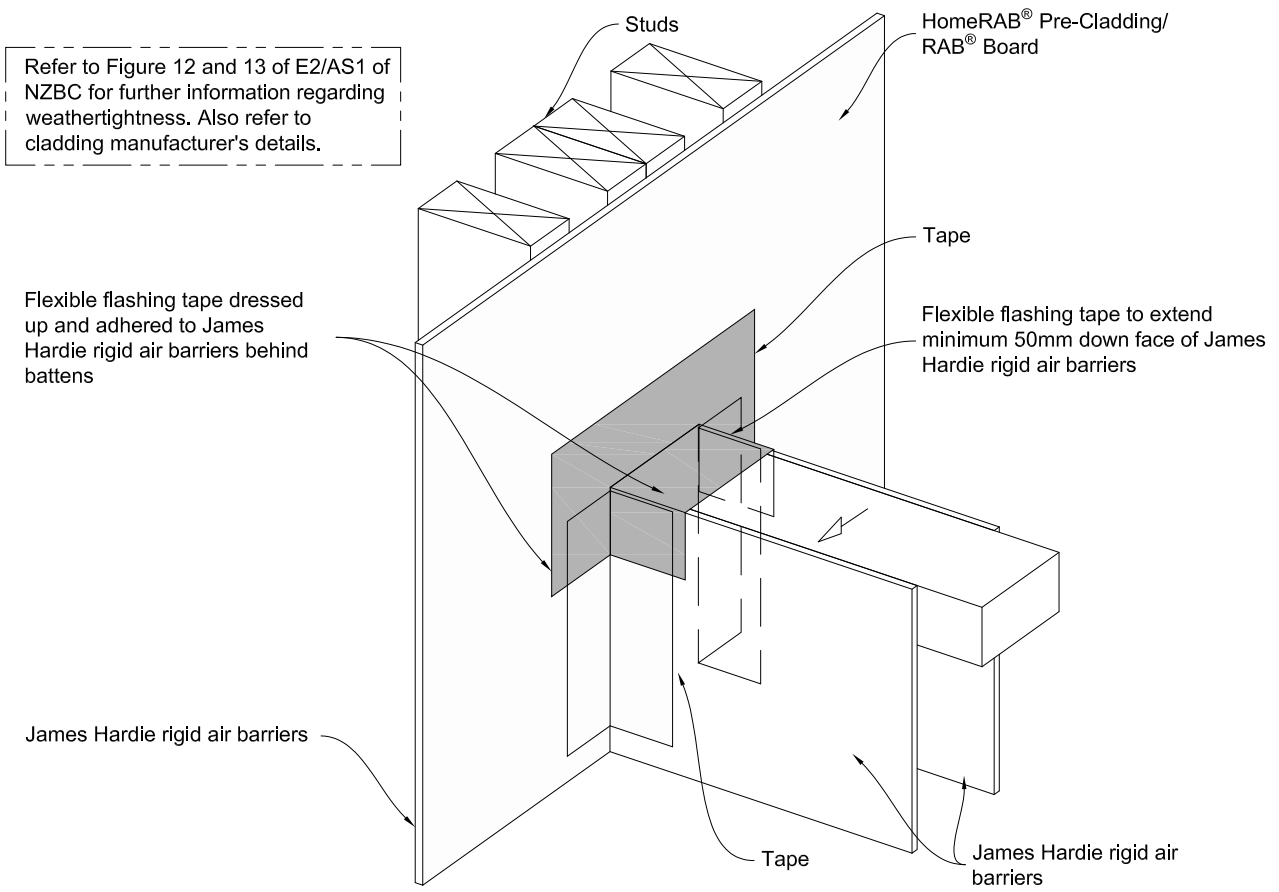
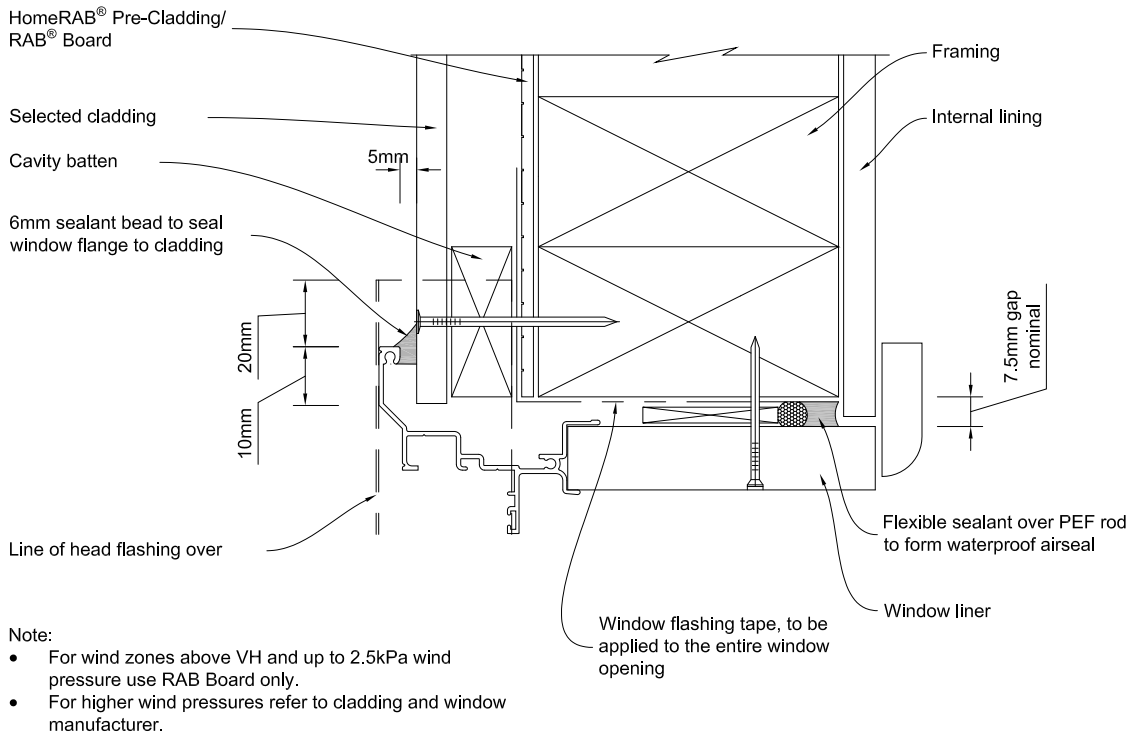


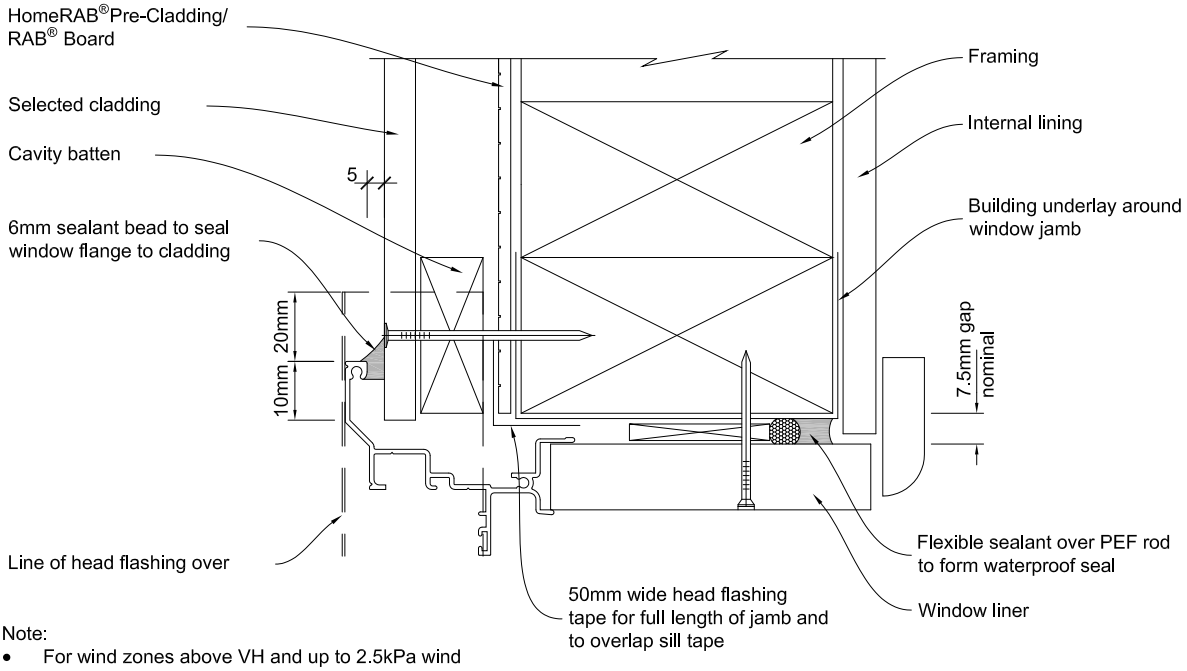
Figure 20: Window jamb with flashing tape



Note:

- For wind zones above VH and up to 2.5kPa wind pressure use RAB Board only.
- For higher wind pressures refer to cladding and window manufacturer.

Figure 21: Alternate window jamb with building underlay



Note:

- For wind zones above VH and up to 2.5kPa wind pressure use RAB Board only.
- For higher wind pressures refer to cladding and window manufacturer.

Note: Flashing tapes must be installed to meet requirements of tape manufacturer

SURFACE CLEARANCES

James Hardie rigid air barriers must extend below the bottom plate by 15mm minimum over concrete foundation and 15mm past floor joist of timber foundation. James Hardie rigid air barriers must maintain a 100mm minimum clearance between the bottom edge of the sheet and the finished ground.

Check cladding manufacturer for minimum clearances required for the selected cladding.

Maintain the required clearances between the bottom plate and top of ground to comply with the NZBC and NZ standards. The adjacent finished ground must slope away from the building in accordance with the NZBC requirements. Do not install James Hardie rigid air barriers in such a way that it may remain in contact with standing water.

Figure 22: Foundation detail — direct fix cladding

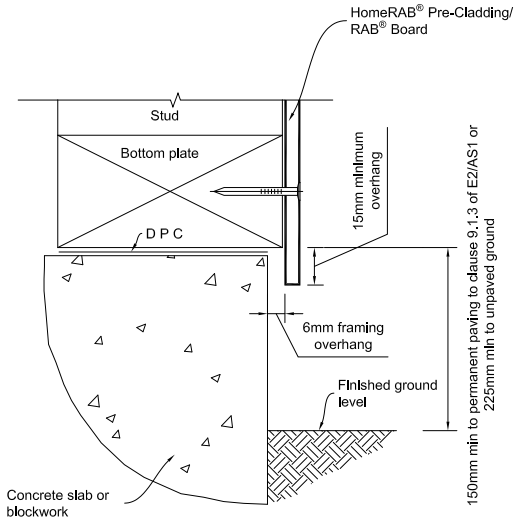
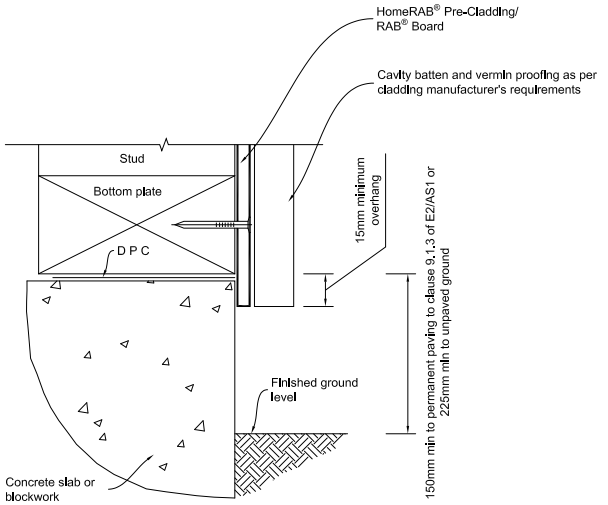


Figure 23: Foundation detail — cavity fix cladding



ALPINE REGIONS

In regions subject to freeze/thaw conditions, James Hardie rigid air barriers must not be in direct contact with snow or ice build up e.g. external walls in alpine regions subject to snow drifts over winter. James Hardie rigid air barriers have been tested to resist freeze thaw in accordance with AS/NZS 2908.2 clause 8.2.3 requirements and is suitable for use in alpine regions.

6 Product information

GENERAL

HomeRAB Pre-Cladding and RAB Board are cellulose fibre reinforced cement building products. The basic composition is Portland cement, ground sand, cellulose fibre and water.

RAB Board is easily identified by the name RAB Board printed on the back face. It has green colour water repellant sealer applied on its front face.

HomeRAB Pre-Cladding is easily identified by the name 'HomeRAB Pre-Cladding' on the front face. It has green colour water repellent sealer applied on its front face. The name is also printed on the back face of the lining.

HomeRAB Pre-Cladding and RAB Board are manufactured to conform to the requirements of AS/NZS 2908.2 'Cellulose-Cement Products Part 2: Flat Sheet (ISO 8336).

HomeRAB Pre-Cladding and RAB Board are classified Type B, Category 3 in accordance with AS/NZS 2908.2.

For Safety Data Sheets (SDS) visit www.jameshardie.co.nz or Ask James Hardie on 0800 808 868.

DURABILITY

Resistance to Moisture/Rotting

James Hardie rigid air barriers have been assessed for permanent moisture induced deterioration (rotting) and have met the expectation of AS/NZS 2908.2.

Resistance to Fire

James Hardie rigid air barriers have been tesed/assessed and are classified as Non-Combustible Material.

7 Finishes and maintenance

The selected cladding must be installed and finished within 90 days after the installation of James Hardie rigid air barriers, and the cladding must comply with the requirements of the NZBC. Regular cleaning and maintenance of claddings paints, joints, junctions, penetrations, flashings etc must be carried out at regular intervals and as per the requirements of the material manufacturers. Regular maintenance of cladding is also a requirement under the NZBC.

The ground clearances required for the James Hardie rigid air barriers and the cladding must always be maintained.

Notes

Notes

Product Warranty

James Hardie®
RIGID AIR BARRIERS

April 2016

James Hardie New Zealand ("James Hardie") warrants for a period of 15 years from the date of purchase that the HomeRAB® Pre-Cladding/RAB® Board (the "Product"), will be free from defects due to defective factory workmanship or materials and, subject to compliance with the conditions below, will be resistant to cracking, rotting, fire and damage from termite attacks to the extent set out in James Hardie's relevant published literature current at the time of installation. James Hardie warrants for a period of 15 years from the date of purchase that the accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials. Nothing in this document shall exclude or modify any legal rights a customer may have under the Consumer Guarantees Act or otherwise which cannot be excluded or modified at law.

CONDITIONS OF WARRANTY:

The warranty is strictly subject to the following conditions:

a) James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation;

b) this warranty is not transferable;

c) the Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including coating and jointing systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice;

d) the project must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("NZBC"), regulations and standards;

e) the claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product;

f) James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces);

g) all warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law;

h) if meeting a claim under this warranty involves re-coating of Products, there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.

Disclaimer: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. James Hardie has tested the performance of the HomeRAB® Pre-Cladding/RAB® Board when installed in accordance with the HomeRAB® Pre-Cladding/RAB® Board installation manual in accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design) James Hardie shall not be liable for the recommendations made in its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards, as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie installation manual are suitable for the intended project and that specific design is conducted where appropriate.

James Hardie
a smarter way™

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