James Hardie
a smarter way™

James Hardie®
WEATHERBOARD

Technical Specification

NOVEMBER 2015 | NEW ZEALAND

Contents

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 Application and scope

1.1 APPLICATION

James Hardie Weatherboards are made of fibre cement and are pre-primed. They are categorised as a lightweight cladding product as per NZS 3604.
James Hardie Weatherboards are manufactured in different profiles ranging between smooth and patterned finishes such as:

SMOOTH WEATHERBOARD

Smooth Weatherboard (7.5mm) is available in three widths (180mm, 240mm and 305mm) and has a smooth finish.

RUSTICATED WEATHERBOARD

Rusticated Weatherboard (7.5mm) combines a rough-sawn texture with a smooth strip in the lap area. It is 205mm wide.

FRONTIER WEATHERBOARD

Frontier Weatherboard (7.5mm) is available in two widths (245mm and 310mm). The board has a woodgrain textured surface.

SPECIFIER

If you are a specifier or other responsible party for a project, ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

INSTALLER

If you are an installer ensure that you follow the design, moisture management principles, and associated details and material selection provided by the designer. All the details provided in this document must be read in conjunction with the specifier's specification.

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.

1.2 SCOPE

This specification covers the use of James Hardie Weatherboards for buildings that fall within the scope of NZS 3604 and NZBC Acceptable Solution 'E2/AS1', paragraph 1.1. This specification covers the use of James Hardie Weatherboards in both direct fixed and cavity construction methods. Please refer to 'E2/AS1' for further information regarding the selection of construction method for claddings.

1.3 DETAILS

Various James Hardie Weatherboards details are provided in the Details section of this document. This specification and details in CAD file are also available to download from our website at www.jameshardie.co.nz.

1.4 SPECIFIC DESIGN

For use of James Hardie Weatherboards outside the scope of this document, the architect, designer or engineer must undertake specific design. For advice on designs outside the scope of this specification, Ask James Hardie on 0800 808 868.

2 Design

2.1 COMPLIANCE

James Hardie Weatherboards comply with section 9.5.2 of 'E2/AS1'. Information contained in this document regarding the installation of James Hardie Weatherboards are aligned with 'E2/AS1' of New Zealand Building Code (NZBC).

2.2 RESPONSIBILITY

The specifier or other party responsible for the project must ensure that the information and details in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope of this technical specification. For applications outside the scope of this literature and details which are not provided herein, the architect, designer or engineer must undertake specific design and it should be ensured that the intent of their design meets the requirements of the NZBC.

All dimensions shown are in millimetres unless noted otherwise. All New Zealand Standards referenced in this manual are current edition and must be complied with.

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

2.3 SITE AND FOUNDATION

The site on which the building is situated must comply with the NZBC Acceptable Solution 'E2/AS1' 'Surface Water'. Foundation design must comply with the requirements of NZS 3604 'Timber Framed Buildings' or be as per specific engineering design. The grade of adjacent finished ground must slope away from the building to avoid the possibility of water accumulation in accordance with NZBC requirements.

2.4 SURFACE CLEARANCES

The clearance between the bottom edge of the cladding and paved/unpaved ground must comply with section 9.1.3 of E2/AS1. The finished floor level must also comply with these requirements. These clearances must be maintained throughout the life of the building.

James Hardie Weatherboards must overhang the bottom plate on a concrete slab by a minimum of 50mm, as required by NZS 3604.

James Hardie Weatherboards must have a minimum clearance of 100mm from paved ground and 175mm from unpaved ground.

On roofs and decks the minimum clearance must be 50mm.

Do not install external cladding such that it may remain in contact with water or ground.

2.5 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.

Wall construction design must effectively manage moisture, considering both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled.

Walls must include those provisions as required by the NZBC Acceptable Solution 'E2/AS1' 'External Moisture'. In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing for waterproofing. The other materials, components and installation methods used to manage moisture in the walls, must comply with the requirements of relevant standards and the NZBC. For further information in relation to designing for weathertightness, refer to the Building Research Association of New Zealand (BRANZ) and the Department of Building and Housing (DBH) updates on the following websites, respectively www.branz.co.nz and www.dbh.govt.nz.

2.6 STRUCTURE

Timber-framed buildings must be designed in accordance with NZS 3604 (Timber Framed Buildings). When the framing is provided as per the specific engineering design, the framing stiffness must be equivalent to, or more than, the stiffness requirements of NZS 3604. For timber frame walls longer than 12m, it is best practice to allow for consutruction joints to allow movements generated due to timber shrinkage or deflections etc.

2.7 WIND LOADING

James Hardie Weatherboards cladding is suitable for use in all wind zones in New Zealand up to and including EH as defined in NZS 3604.

A specific design is required for all situations where a building falls in a specific engineering design (SED) wind zone.

2.8 FIRE RATED WALLS

Walls clad with James Hardie Weatherboards using a direct fix or cavity construction method can achieve fire ratings of up to 60/60/60 to comply with C/AS1 of the NZBC, when constructed in accordance with this literature, including the fire rated system requirements as specified in James Hardie Fire and Acoustic Design Manual. Refer to this design manual for further information about fire rated systems.

2.9 ENERGY EFFICIENCY

External walls constructed using James Hardie Weatherboards, bulk insulation, where the area of glazing is 30% or less of the total wall area and constructed as per this technical specification complies with the requirements for walls in NZBC Acceptable Solution H1/AS1 (NZBC Clause H1 Energy Efficiency), Replacement Table 1. To meet thermal insulation requirements for the construction, the bulk insulation as specified in Table 1 must be used. This insulation may be substituted with insulations having higher R-values. The thermal insulation of a wall gets affected when the depth of the timber framing is increased or decreased. The calculation used in Table 1 is based on a timber framing size 90 x 45mm and using an internal lining material such as James Hardie Villaboard® Lining or a 10mm plasterboard.

Table 1

Insulation capability		
Climate Zone	**Construction R-Value Requirement**	**Minimum R-Value of Insulation Required**
1 and 2	1.9 m^2 ºC/W	#R2.0
3	2.0 m^2 ºC/W	#R2.2

Total construction R-Value depends on the insulation material used and the framing ratio. The insulation material R-Values specified in this table are for studs spaced at 600mm c/c and nogs spaced at 800mm c/c.

To achieve higher R-Values, the wall insulation must be replaced with an insulation material having higher R-Values to suit the requirements.

For further guidance on insulation requirement refer to current edition of 'House Insulation Guide' published by BRANZ.

3 Framing

3.1 GENERAL

This James Hardie Weatherboards technical specification is only suitable for timber-framed buildings. Other framing materials are outside the scope of this specification.

3.2 STRUCTURAL GRADE

Minimum timber grade selected for external wall framing must be in accordance with NZS 3604.

3.3 DURABILITY

To comply with the NZBC requirements the external framing must be treated to a minimum H1.2 treatment. Refer to the NZBC Acceptable Solution B2/AS1 'Durability' for further information about the durability requirements.

For timber treatment information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round and Sawn Timber) for minimum timber treatment selection and treatment requirements.
Also refer to framing manufacturer's literature for further guidance on timber selection. Framing must be protected from moisture at sites in accordance with the recommendations of framing manufacturer's.

Note: Refer to NZS 3602 for information about the allowable moisture contents in timber.

3.4 FRAME CONSTRUCTION

All timber framing sizes and set-out must comply with NZS 3604 and stud, nogs/dwangs centres as required by this specification:

Use of timber framing must be in accordance with framing manufacturer's specifications.

In case of gable end trusses sitting on top plate of external wall frame, the frame size must be in accordance with truss design and specification supplied by the frame and truss manufacturer/ supplier supported by independant design producer statement.

3.5.1 Direct Fix Construction Method

The following framing must be provided for direct fixed construction method:

- Studs must be provided at 600mm centres maximum.
- Nogs must be provided at 1200mm centres maximum.
- Double studs will be required at internal corners for fixing weatherboards without drilling the weatherboard ends.

3.5.2 Cavity Construction Method

The following framing must be provided for cavity construction method:

- When studs are at 600mm centres the nogs must be provided at 800mm centres maximum.
- When studs are at 400mm centres the nogs may be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.

3.5 TOLERANCES

In order to achieve an acceptable wall finish, it is imperative that framing is straight and true.

Framing tolerances must comply with the requirements of NZS 3604.

4 Preparation

4.1 HOMERAB® PRE-CLADDING OR FLEXIBLE UNDERLAY

HomeRAB Pre-Cladding or flexible underlay must be provided as per the requirements of the NZBC Acceptable Solution 'E2/AS1' 'External Moisture' and NZS 3604.

The flexible underlays must comply with Table 23 of 'E2/AS1'. The flexible underlays must be fixed in accordance with 'E2/AS1', NZS 3604 and the underlay manufacturer's recommendations.

Walls which are not lined on the inside face (e.g. garage walls or gable ends) must include a rigid sheathing or an air barrier behind the cladding which complies with the requirements of the NZBC 'Acceptable Solution' 'E2/AS1'. HomeRAB Pre-Cladding is suitable for use in these applications. It must be installed in accordance with James Hardie Rigid Air Barriers Installation Manual.

4.2 RAB BOARD

For EH wind zone, RAB Board (6mm) must be used. To achieve the temporary weathertightness using James Hardie rigid air barriers, windows/doors can be temporarily installed. Refer to James Hardie Rigid Air Barriers installation manual for information regarding its installation.

4.3 FLASHING

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to weatherboard installation. Please refer to moisture management requirements in Clause 2.5. The building underlays must be appropriately incorporated with penetration and junction flashings. Materials must be lapped in such a way that water tracks down to the exterior on the face of flexible underlay.

The selected flashing materials must comply with the durability requirements of Table 20 of Acceptable Solution 'E2/AS1'.

4.4 VENT STRIP

The James Hardie uPVC cavity vent strip has opening area of 1000mm^2/m length and must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. It is important that the openings in the vent strip are kept clear and unobstructed to allow free drainage and ventilation of cavities.

4.5 CAVITY BATTENS

Buildings with a risk score of 7-20 calculated in accordance with the NZBC Acceptable Solution 'E2/AS1' Table 3 requires James Hardie Weatherboards to be installed on a cavity.

The battens provide airspace between the frame and cladding and are considered a 'packer' only in this specification.

The timber battens must be minimum H3.1 treated in accordance with NZS 3640 (Chemical preservation of round and sawn timber) to comply with the durability requirements of B2/AS1.

Cavity battens must comply with 'E2/AS1' and

- be minimum 18mm thick
- be minimum as wide as the width of studs
- be fixed by the cladding fixings to the main framing through the building underlay
- until claddings are fixed the battens need only to be tacked to framing. (Batten fixing is required temporarily to keep them straight on the wall during construction.)

The cavity battens are installed as described below:

- Fix cavity battens to studs.
- Battens must be fixed with 40 x 2.8mm galvanised nails at 800mm centres maximum.

4.6 INTERMEDIATE SUPPORT

Where studs are at 600mm centres an intermediate means of restraining the building underlay and insulation from bulging into the cavity shall be installed. An acceptable method to achieve this is using one of the following options as per E2/AS1:

- intermediate cavity batten between the studs
- 75 mm galvanized mesh
- polypropylene tape at 300mm centres fixed horizontally and drawn taut

No intermediate supports are required where

- studs are at 400mm centres or
- rigid air barriers instead of building underlays are used.

4.7 CORNERS

Anticipated joist shrinkage must be allowed for in the design process. Do not run trims or aluminium extrusions continuously across solid floor joists. Trims or extrusions to be flashed to best trade practice at these locations.

4.8 EXTERNAL CORNERS

James Hardie Weatherboards shall be finished at external corners using uPVC or aluminium corner mould, corner soakers and box corner. Refer to Figures 5, 6, 7, 19, 20 and 21.

4.9 INTERNAL CORNERS

James Hardie Weatherboards shall be finished at internal corners using uPVC or aluminium 'W' mould. Refer to Detail 8, 9, 22 and 23.

4.10 JUNCTIONS AND PENETRATIONS

Refer to Clause 2.5 of this specification for moisture management requirements. All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for James Hardie Weatherboards which meet the requirements of E2 'External Moisture' approved document of the NZBC. Refer to Figures 11 to 13 and Figures 25 to 33.

5 Fixing James Hardie Weatherboards

5.1 GENERAL

The horizontal lap of James Hardie Weatherboards must be 30mm minimum. James Hardie Weatherboards must be kept dry and under cover whilst in storage prior to and during fixing.

Cut ends which are exposed or where sealant is applied to the boards such as box corners, internal corners etc. must be primed prior to installation. Dust and loose material must be removed before priming.

An H3.1 treated timber cant strip must be provided to support the bottom board on the wall. Refer to Figures 3 and 17.

5.2 FASTENER DURABILITY

Fasteners must meet the durability requirements of NZ Building Code. NZS 3604 specifies requirements for fixing material to be used in relation to the exposure conditions and are summarised in Table 2.

Table 2

Exposure conditions and nail selection prescribed by NZS 3604		
Nail Material		
Zone D*	Zone C outside sea spray zone and Zone B and Geothermal hot spots	Bracing — All zones
Grade 316 Stainless	Hot-dipped galvanised or 316 stainless	Grade 316 Stainless

** (Zone C areas where local knowledge dictates that increased durability is required, appropriate selection shall be made). Microclimate conditions as detailed in NZS 3604, Paragraph 4.2.4 require SED.*

Also refer to the NZBC Acceptable Solution 'E2/AS1' Table 20 and 21 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

5.3 NAIL SIZES AND FIXING METHOD

James Hardie Weatherboards must be fixed to studs with the types of nails specified in Table 3, in accordance with the following requirements

- All nails must be driven flush with the board surface.
- When fixing weatherboard at the ends, nail must be driven at a minimum distance of 20mm from the end.
- For nails driven 50mm or closer from the end edges of James Hardie Weatherboards, holes must be pre-drilled using a 3mm Titanium drill bit.

Table 3

Nail requirements for James Hardie Weatherboards	
DIRECT FIXED TO FRAME	
Face Nailing	
50 x 2.8mm HardieFlex™ nails	Finish flush with the board surface
CAVITY CONSTRUCTION	
Face Nailing over flexible underlay	
75 x 3.15mm HardieFlex™ nails	Finish flush with the board surface
CAVITY CONSTRUCTION	
Face Nailing over James Hardie rigid air barrier	
75 x 3.15mm HardieFlex™ nails	Finish flush with the board surface

5.4 GUN NAILING

James Hardie Weatherboards can be gun-nailed for face nailing fixing methods. Nails must be finished flush with board surface.

Round head nails must be used and the size of these nails must comply with the requirements of Table 3.

Nails must be fired at a minimum distance of 50mm from the ends of boards when gun nailing is used — double studs will be required.

Note: Do not use 'D' head nails.

6 Jointing

The ends of James Hardie Weatherboards are jointed off-stud using a back soaker. The joints may be located centrally between studs but no closer than 150mm from the studs. The joints must be staggered by 600mm minimum. Flexible silicone sealant must be used with back soakers for jointing. Refer to Figures 4 and 18.

7 Finishing

Protective coating of James Hardie Weatherboards is required in order to meet the durability requirements of the New Zealand Building Code.

7.1 PREPARATION

Remove any surface dirt, grime or other contaminants and ensure the James Hardie Weatherboards are dry before painting.

7.2 SEALANTS

All sealants must demonstrate the ability to meet the relevant requirements of the NZBC. Their application and usage must be in accordance with manufacturer's instructions. Sealants, if coated, must be compatible with the paint system.

7.3 PAINTING

All James Hardie Weatherboards are pre-primed on their face and bottom edge with a factory-applied acrylic base coat.

James Hardie Weatherboards must be painted within 90 days of installation. All exposed faces, including the top edges under the sills and bottom edges of James Hardie Weatherboards and accessories must be finished with two coats of quality exterior paint system complying with any of parts 7, 8, 9, and 10 of AS 3730.

James Hardie Weatherboards can be painted dark colours when installed with aluminium mouldings only.

When using uPVC corner moulds or flashings, the light reflective value of the colour used must be more than 40% as required under section 4.3.1 of 'E2/AS1'. Dark colours cause excessive movements and deteriorate the cladding performance.

Some environments require special coatings. Paint selection and specifications is dependant on the paint system chosen. Refer to the paint manufacturer.

7.4 STAINING

Stains containing linseed oil are specifically designed for wood and may not be suitable for fibre cement cladding products, primed or unprimed. Semi-transparent stains can vary in uniformity of appearance depending on method of application and conditions and will require a high level of skill and craftsmanship to achieve a uniform appearance. Clear coats have not proven durable in exterior exposure and James Hardie considers them a maintenance item that may require application of a refurbishing sealer at regular intervals. James Hardie does not warrant the appearance and durability of the use of semi-transparent stains and clear coats.

For further information contact the stain manufacturers. Refer to Section 13 for stain manufacturer details.

8 Storage and handling

James Hardie Weatherboards must be laid flat on a smooth level surface. To ensure optimum performance, store weatherboards under cover and keep dry prior to fixing. If the weatherboards should become wet, allow to dry thoroughly before fixing.

Do not carry weatherboards on the flat, always carry in the vertical position to avoid excessive bending.

9 Maintenance

It is the responsibility of the specifier to determine normal maintenance requirements to comply with the NZBC Acceptable Solution B2/AS1.

The extent and nature of maintenance will depend on the geographical location and exposure of the building.

As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

- Washing down exterior surfaces every 6-12 months*,
- Re-applying exterior protective finishes**,
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants.
- Cleaning out gutters, blocked pipes and overflows as required,
- Pruning back vegetation which is close to or touching the building.

**Do not use a water blaster to wash down the cladding.*
***Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.*

10 Product information

10.1 MANUFACTURING AND CLASSIFICATION

James Hardie New Zealand is an ISO 9001 Telarc certified manufacturer. James Hardie Weatherboards is manufactured to meet the requirements of AS/NZS 2908.2: 2000 'Cellulose-Cement Products', James Hardie Weatherboards has a classification of Type A Category 3 in accordance with this standard.

The weatherboards are supplied pre-primed on their face and bottom edge with an acrylic primer. The bottom front edge is square machine trimmed. The top covered edge is square water-jet trimmed.

James Hardie Weatherboards are identified by the printing of the name at regular intervals on the back face.

10.2 DURABILITY

James Hardie Weatherboards, when installed and maintained as per the technical specification, will meet the durability requirements for claddings as required in the NZBC Approved Document B2 'Durability'.

10.2.1 Resistance to Moisture/Rotting

James Hardie Weatherboards demonstrates resistance to permanent moisture induced deterioration (rotting) and has passed the following tests in accordance with AS/NZS 2908.2

- Water Permeability (Clause 8.2.2)
- Warm Water (Clause 8.2.4)
- Heat Rain (Clause 6.5)
- Soak Dry (Clause 8.2.5).

10.2.2 Control of External Fire Spread

James Hardie Weatherboards meet the requirements of Appendix C C7.1.1 and is classified as 'Non-Combustible Material' which is suitable for use as external wall cladding and complies with the requirements of Paragraph 5.4 of the NZBC Acceptable Solution C/AS1 and Paragraph 5.8.1 of Acceptable Solutions C/AS2 to C/AS6 of the NZBC.

10.2.3 ALPINE REGIONS

In regions subject to freeze/thaw conditions, James Hardie Weatherboards must not be in direct contact with snow or ice build up for extended periods, e.g. external walls in alpine regions must be protected where snow drifts over winter is expected.

The James Hardie Weatherboards have been tested in accordance with AS/NZS 2908.2 Clause 8.2.3.

10.3 PRODUCT SIZES AND MASS

Available sizes of James Hardie Weatherboards and their weights are given in Table 5. James Hardie Weatherboards are classified as a light weight wall cladding (not exceeding 30kg/m^2) in accordance with NZS 3604.

11 Safe working practices

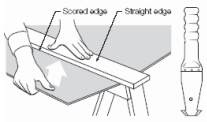
WARNING — DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

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 INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

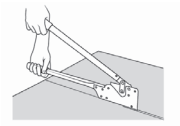
James Hardie recommended safe working practices
CUTTING OUTDOORS
1. Position cutting station so wind will blow dust away from the user or others in working area. 2. Use one of the following methods based on the required cutting rate: **BEST** • Score and snap • Hand guillotine • Fibreshear **BETTER** • Dust reducing circular saw equipped with HardieBlade™ Saw Blade and HEPA vacuum extraction **GOOD** • Dust reducing circular saw with HardieBlade™ Saw Blade.
CUTTING INDOORS
• Cut only using score and snap, hand guillotine or fibreshears (manual, electric or pneumatic). • Position cutting station in a well-ventilated area.
SANDING/REBATING/DRILLING/OTHER MACHINING
When sanding, rebating, 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 manufacturers' safety recommendations.
P1 or P2 respirators should 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.

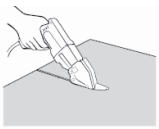
Working instructions
Refer to recommended Safe Working Practices before starting any cutting or machining of product.

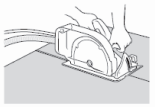
Score and Snap


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 connected to a HEPA vacuum 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
All James Hardie building products should be stored to avoid damage, with edges and corners of the sheets protected from chipping. James Hardie building products must be installed in a dry state and be protected from rain 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 or moisture, etc.

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

12 Product sizes

Table 5

Product information								
				Coverage information				
Product	**Length (mm)**	**Width (mm)**	**Thickness (mm)**	**Effective cover**	**No. of planks/ metre height**	**Mass kg/ lineal m (approx. at EMC)**	**Mass kg/m2 approx. at EMC)**	**Pallet weight kg (60/120 units/pack)**
Smooth	4200 4200 4200	180 240 305	7.5 7.5 7.5	150 210 275	6.7 4.8 3.6	2.4 2.6 3.6	16.0 13.7 12.9	600/1170 770/1540 950/1900
Rusticated	4200	205	7.5	175	5.7	2.6	14.9	700/1350
Frontier	4200 4200	245 310	7.5 7.5	215 280	4.7 3.6	3.1 3.8	14.4 13.6	790/1580 970/1950

Note: All dimensions provided are based on nominal only and subject to manufacturing tolerances.

**The effective thickness of finished 7.5mm James Hardie Weatherboards on the wall at the lap is approx 17-19mm.*

13 Accessories

Table 6

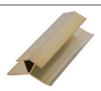
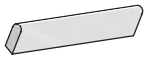
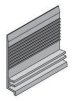
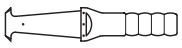
Accessories supplied by James Hardie for James Hardie Weatherboards				
	Accessory and Material Number		**Size (MM)**	**Material/Appearance**
	External Corner Soaker - 310 - 245 - 180	 **303930** **303931** **303932**	 310 245 180	Etch Primed Aluminium Self colour
	Concealed Back Soaker - 310 - 245 - 205 - 180	 **303933** **303934** **303935** **303936**	 310 245 205 180	Etch Primed Aluminium Self colour
	External Flashing (box) - 3000	 **300852**	 3000	uPVC
	External Corner (box) Mould - 3000 - 2700	 **300380** **300378**	 3000 2700	Etch Primed Aluminium
	External Corner Mould 135º - 2700	 **300375**	 2700	Etch Primed Aluminium
	Weatherboard Cap Mould - 3000	 **300995**	 3000	uPVC
	James Hardie Internal 'W' Corner Mould - 2700	 **300870**	 2700 long	uPVC
	Internal Corner Mould 135º - 2700	 **300383**	 2700 long	Etch Primed Aluminium
	Corner Underflashing - 50 x 50	**303745**	3000 long	uPVC
	Vent Strip	**302490**	3000 long	PVC White
	Internal 'W' Corner - 2700	**300386**	2700 long	Etch Primed Aluminium
	HardieFlex™ nail - 5kg	**304253**	75 x 3.15mm	316 Stainless Steel
	HardieFlex™ nail - 5kg	**304251**	75 x 3.15mm	Hot Dip Galvanised
	**HardieBlade™ Saw Blade** Diamond tip fibre cement circular saw blade. Spacers not included.	**300660**	184mm	Diamond Tipped
	**HardieBlade™ Saw Blade** Diamond tip fibre cement circular saw blade. Spacers not included.	**303375**	254mm	Diamond Tipped

Table 7

Accessories not supplied by James Hardie for James Hardie Weatherboards

James Hardie recommends the following products for use in conjunction with its Weatherboards. James Hardie does not supply these products. Please contact component manufacturer for information on their warranties and further information on their products.

	Accessory and Material Number	Size (MM)	Material/Appearance
	HardieFlex™ nail	40 x 2.8mm and 50 x 2.8mm	316 Stainless Steel
	HardieFlex™ nail	40 x 2.8mm and 50 x 2.8mm	Hot Dip Galvanised
	Flexible sealant ie: Sikaflex AT Facade	Tube	Cured rubberised compound
	PEF Rod Sika Boom or similar	Polyethylene foam	Semi rigid foam
	Flashing Tape Tyvek, Protecto Wrap or similar	Proprietary tape to adhere to building underlay	
	Flashing to Table 20 ‘E2/AS1’	Refer Figure 13	Flashing fabricator
	Timber Scriber	As required	H3.1 Treated Timber. Timber merchant or cut on site
	Cant Strip Redway Developments 03 358 5775	To suit	uPVC
	Stain available from Timberkote Tel: 0800 846 225	To suit	
	Scoring Knife		

14 Details

Various details outlined in the following table are available on Pages 15 to 38.

Table 8

Details				
DESCRIPTION	**DIRECT FIXED**		**CAVITY CONSTRUCTION**	
	FIGURE	**PAGE**	**FIGURE**	**PAGE**
Framing Setout	Figure 1	15		
Sheet Fixing Setout	Figure 2	16	Figure 16	26
Concrete Footing	Figure 3	17	Figure 17	27
Weatherboard Fixing	Figure 4	18	Figure 18	28
uPVC or Aluminium Box Corner	Figure 5	19	Figure 19	29
External Boxed Corner	Figure 6	19	Figure 20	29
External Corner Soaker	Figure 7	20	Figure 21	30
Internal 90º uPVC or Aluminium 'W' Mould	Figure 8	20	Figure 22	30
Internal 135º Aluminium 'W' Mould	Figure 9	21	Figure 23	31
Soffit Detail	Figure 10	21	Figure 24	31
Sill Flashings without Facings	Figure 11	22	Figure 25	32
One Piece Head Flashing without Facings	Figure 12	22	Figure 26	32
Jamb Flashing without Facings	Figure 13	23	Figure 27	33
Batten Setout			Figure 14 and 31	24 and 36
Cavity Sill with facings			Figure 28	33
Cavity One piece head flashing with facing			Figure 29	34
Cavity jamb flashing with facing			Figure 30	35
Batten Fixing			Figure 15	25
Parapet Flashing			Figure 32	37
Meter Box at Head			Figure 33	37
Meter Box at Sill			Figure 34	38
Meter Box at Jamb			Figure 35	38
Pipe Penetration			Figure 36	39
One Piece Apron Flashing Joint			Figure 37	40

Figure 1: Direct fix framing setout

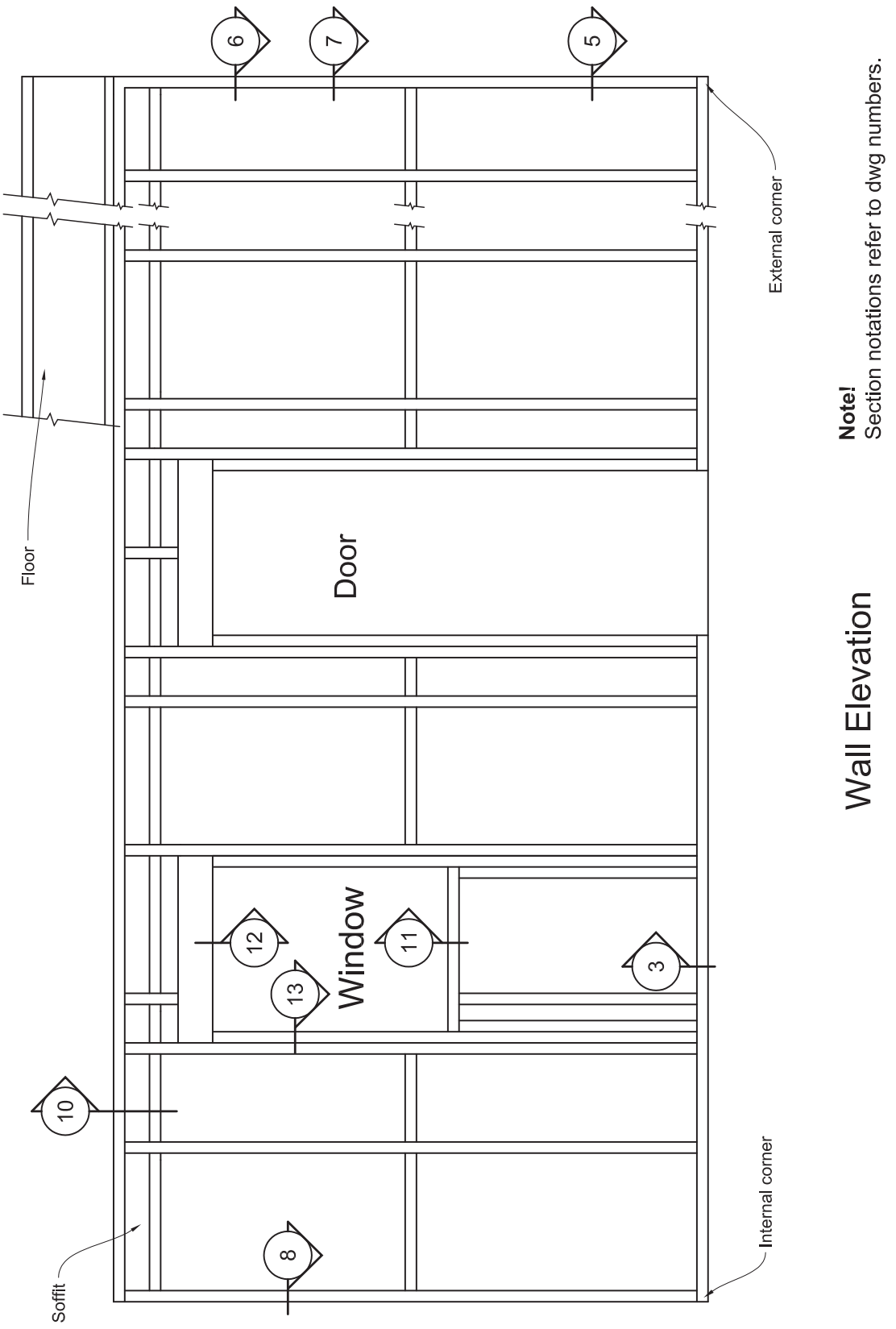


Figure 2: Direct fix sheet fixing setout

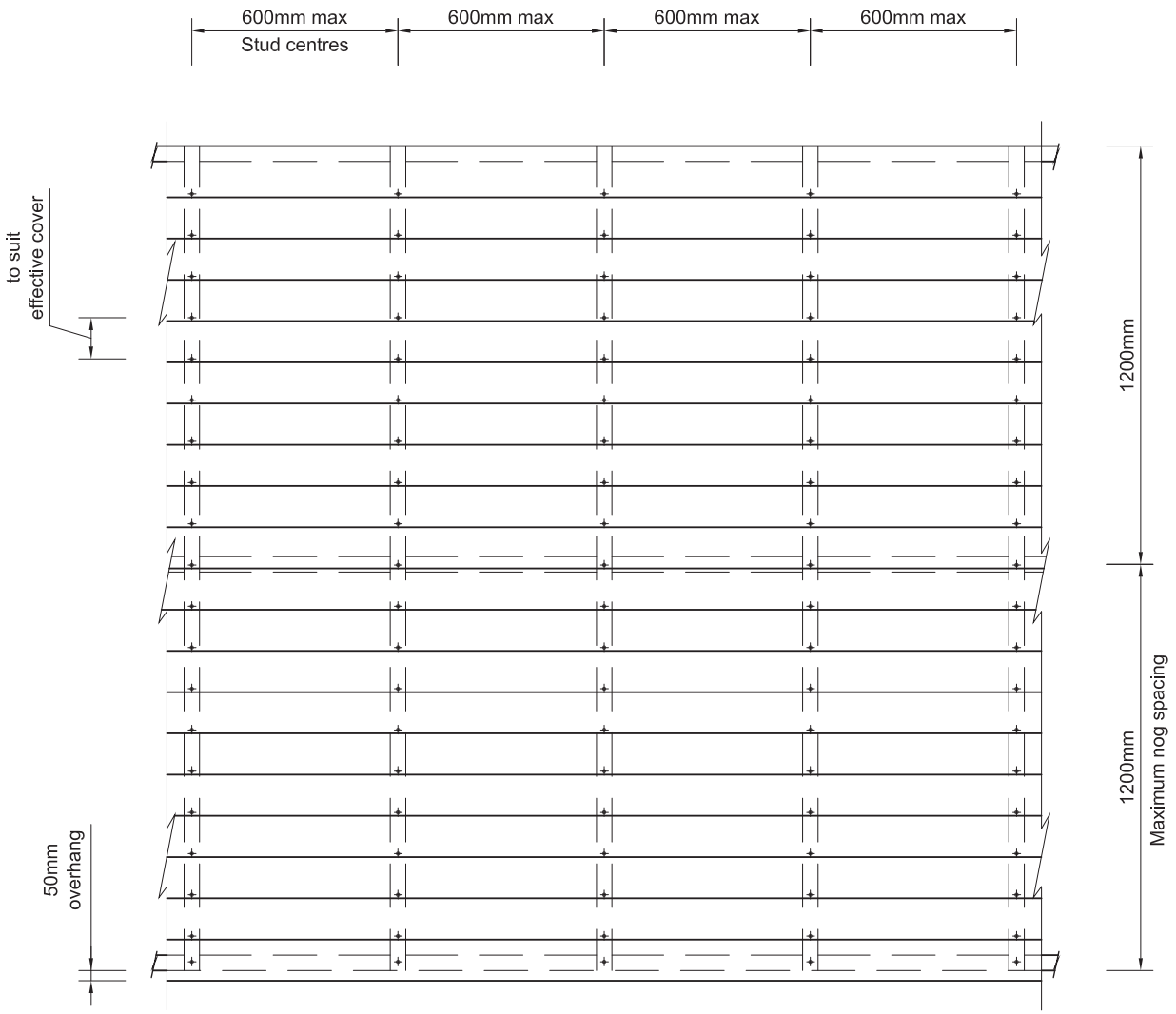


Figure 3: Direct fix concrete footing

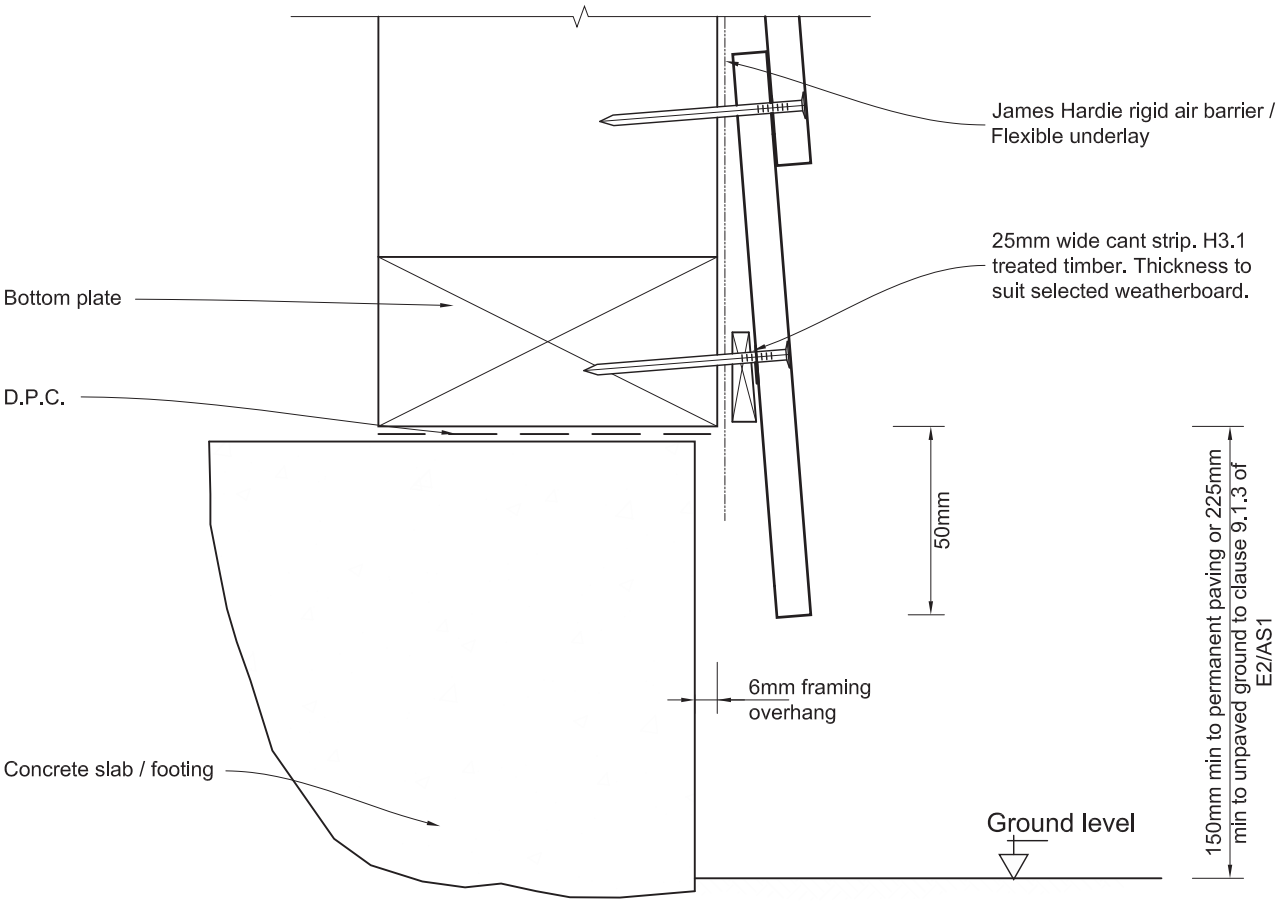
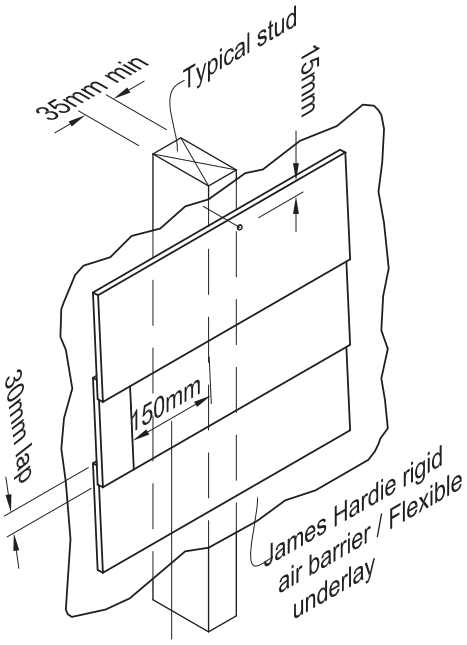
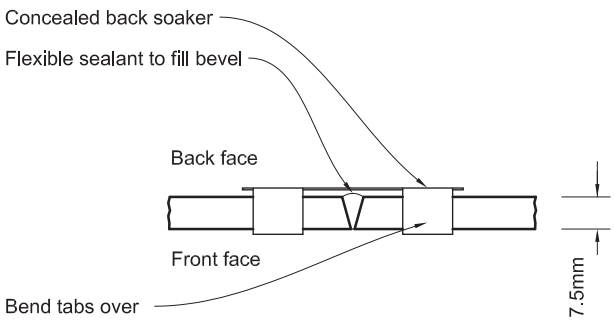


Figure 4: Direct fix weatherboard fixing

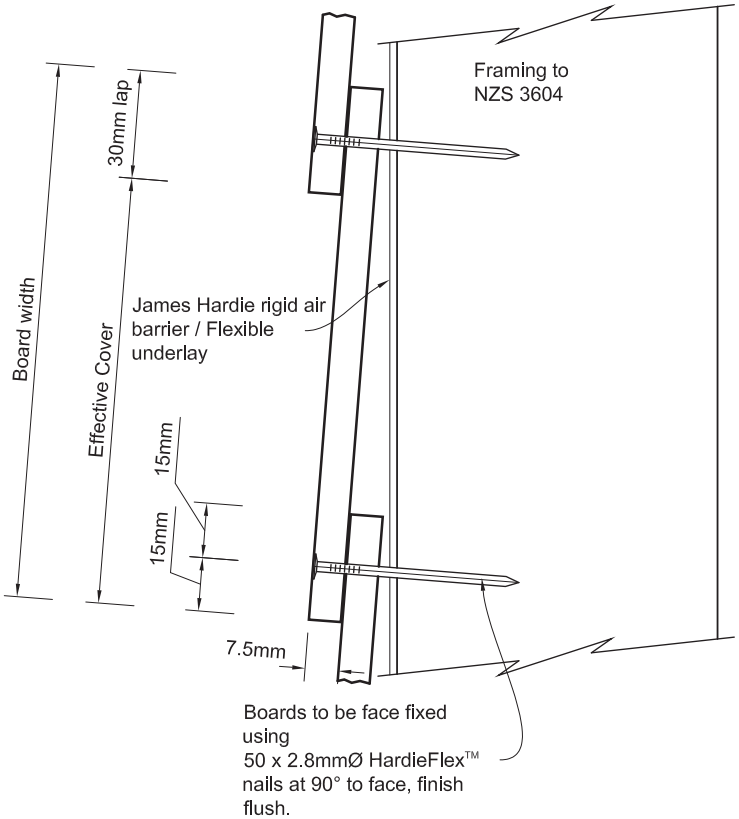


Concealed back soaker join in weatherboard to be 150mm minimum from side of stud.
Joints must be staggered by 600mm minimum

Jointing Off Stud



Concealed Back Soaker



Face Nailing

Figure 5: Direct fix uPVC or aluminium box corner

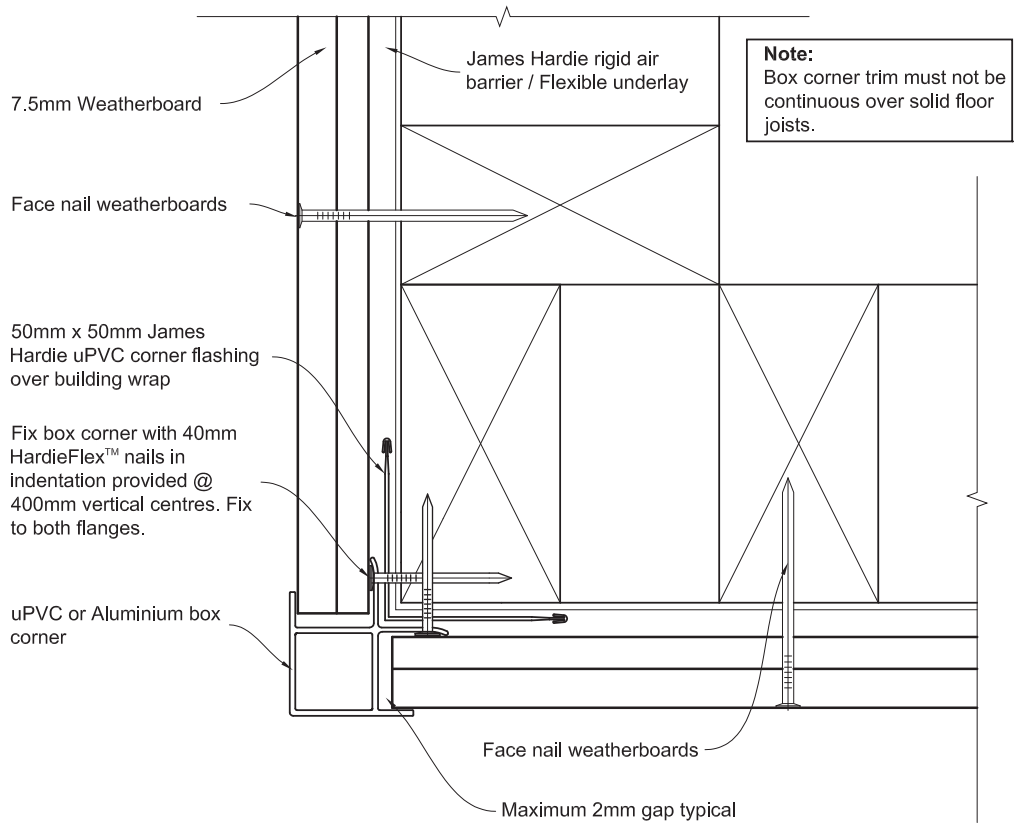


Figure 6: Direct fix external boxed corner

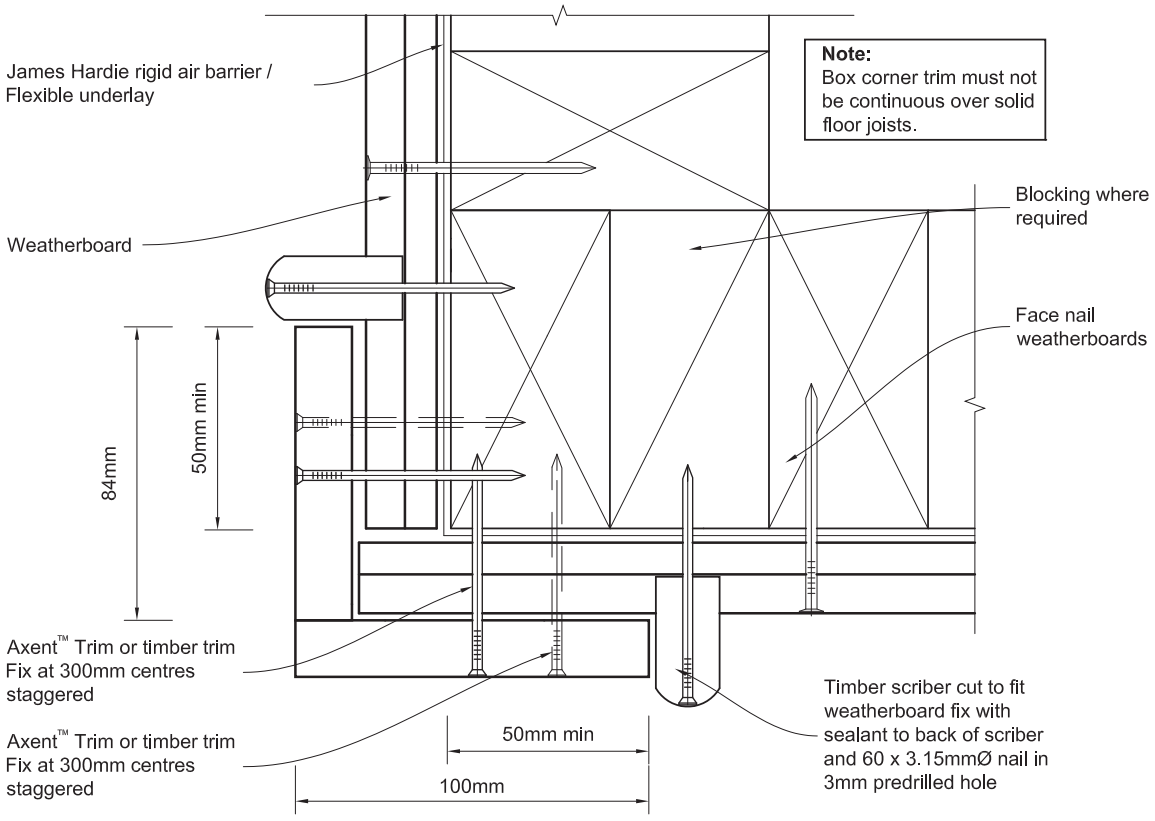
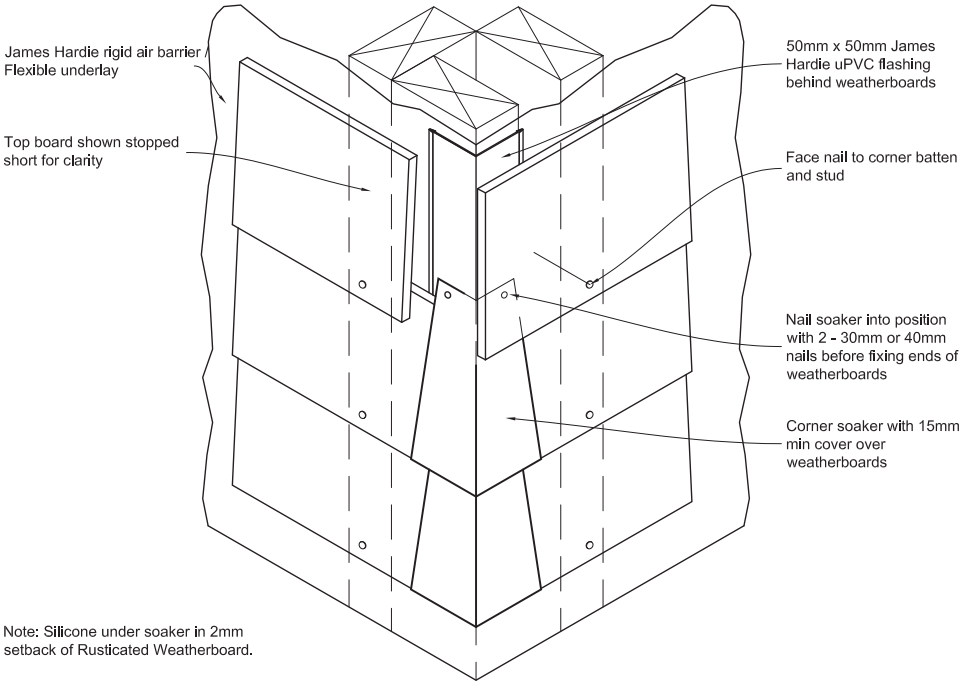


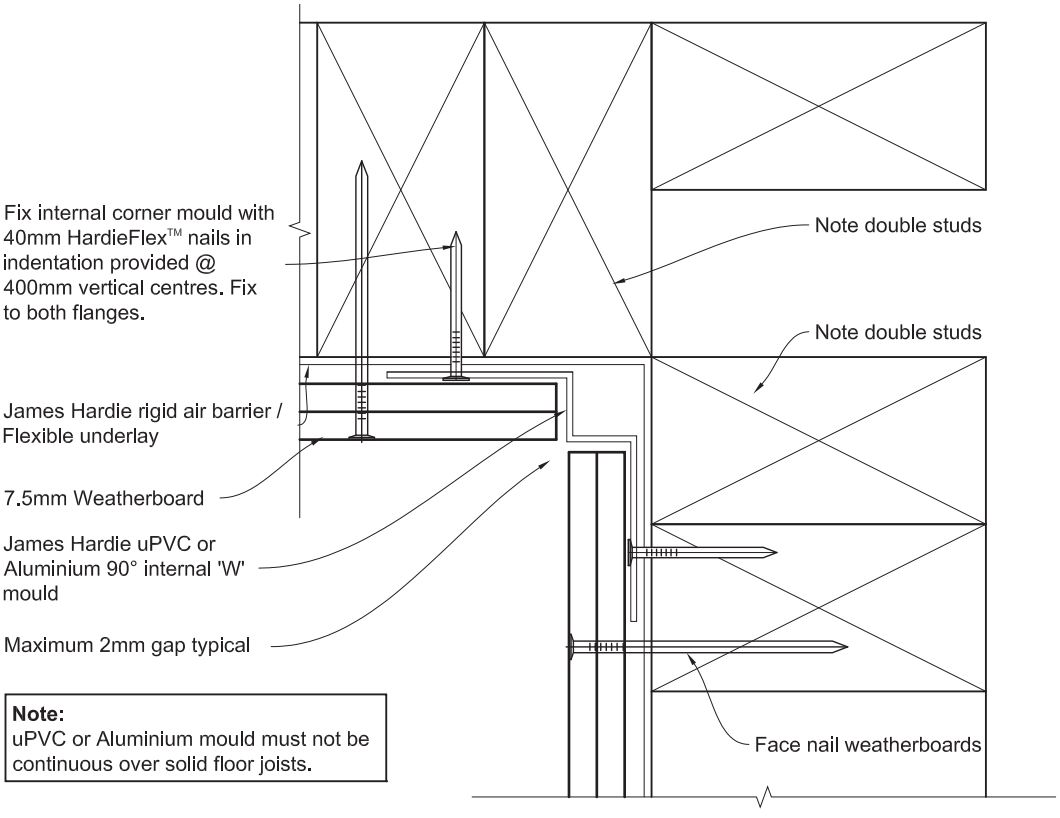
Figure 7: Direct fix external corner soaker



Corner Soaker

Soaker material	Nail material
Aluminium or Galvanised Steel	Hot dip galvanised or Stainless Steel as required for durability

Figure 8: Direct fix internal 90° uPVC or aluminium 'W' mould



Note:
uPVC or Aluminium mould must not be continuous over solid floor joists.

Figure 9: Direct fix internal 135º aluminium 'W' mould

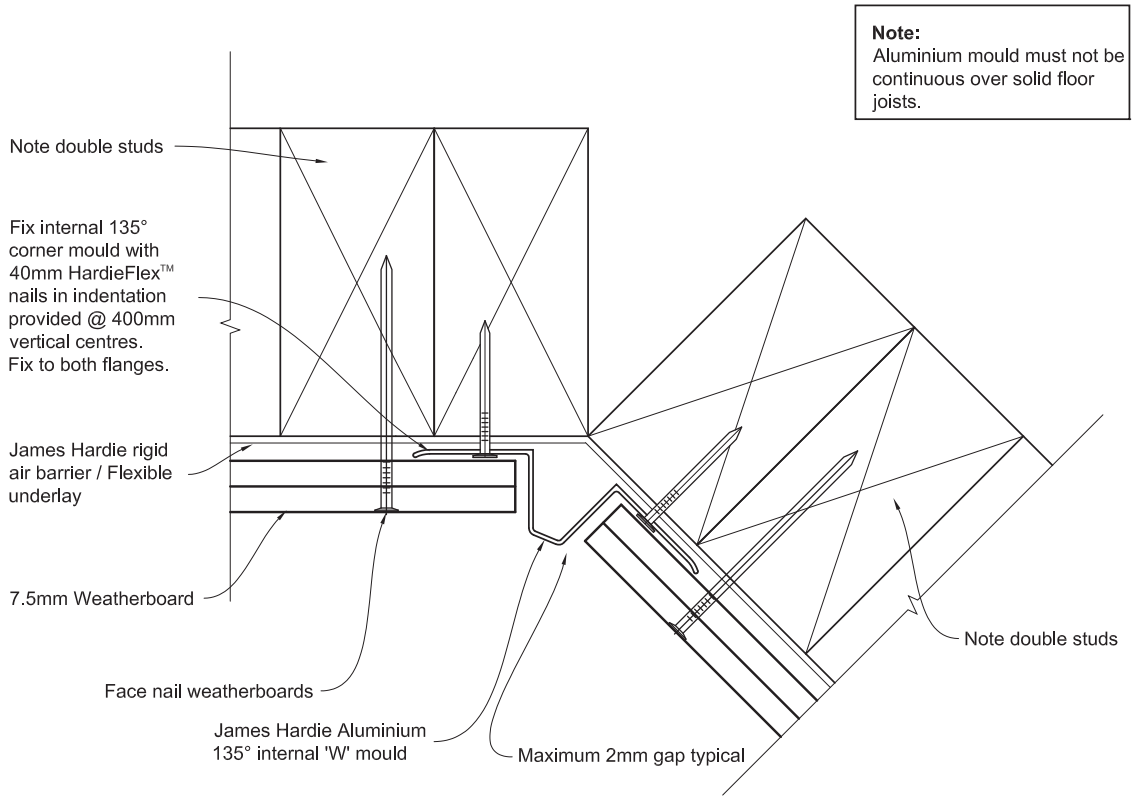


Figure 10: Direct fix soffit detail

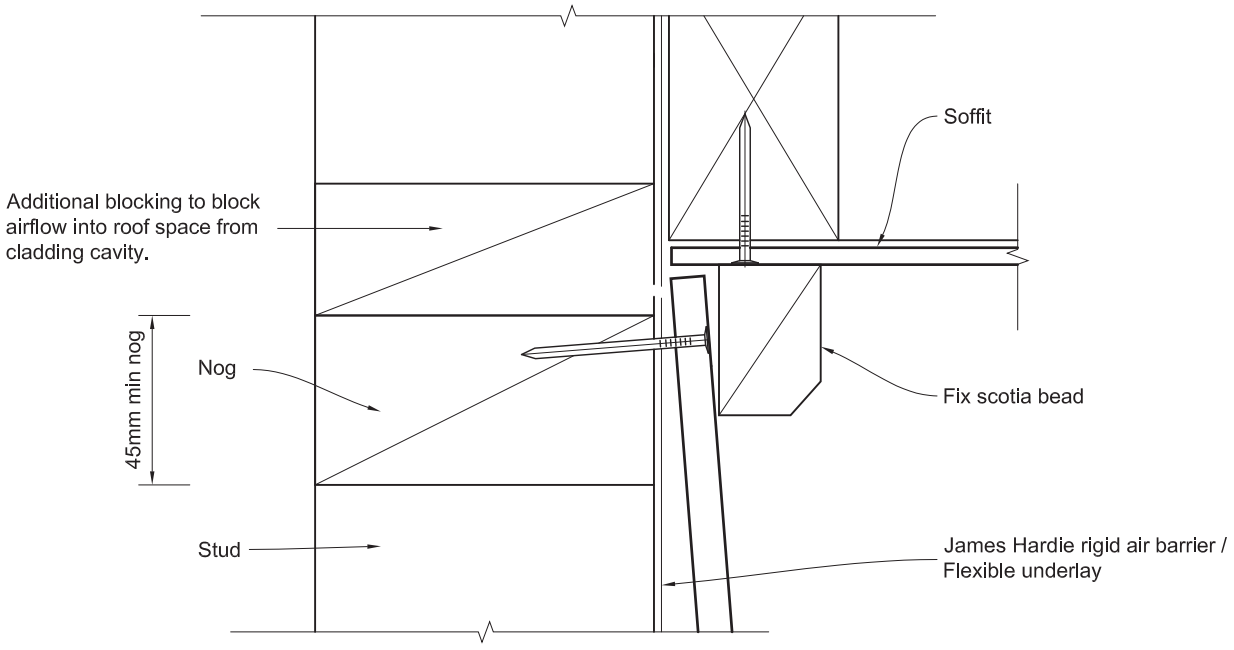
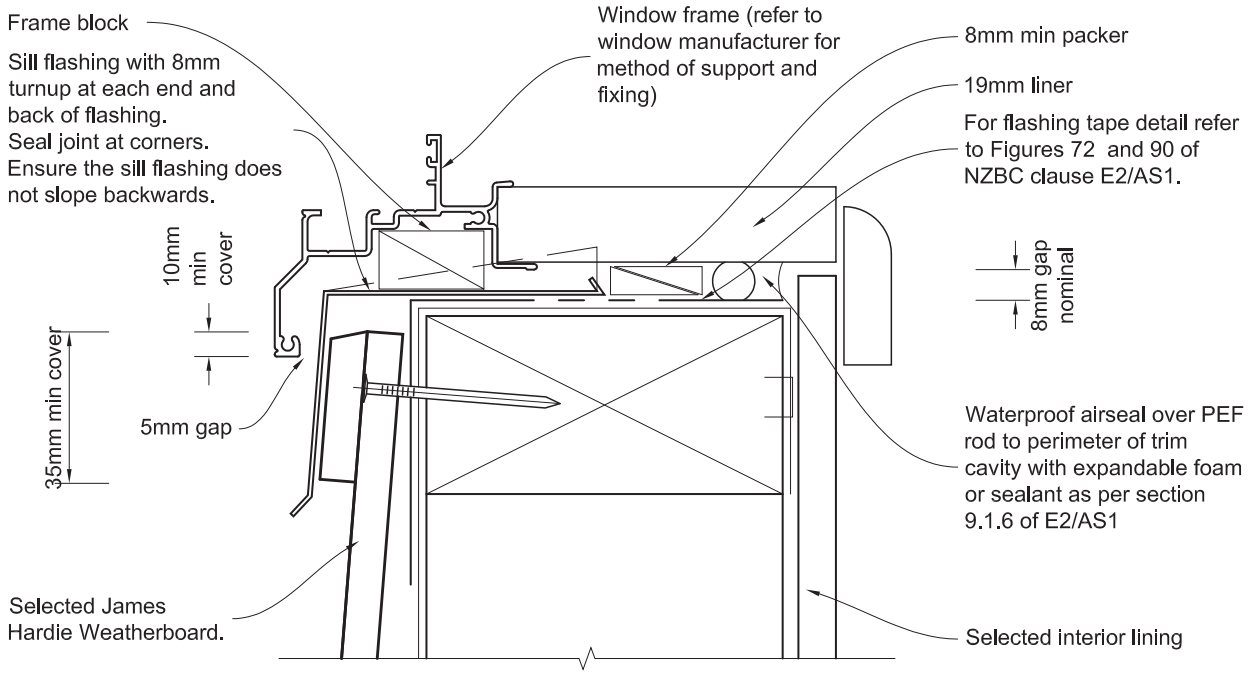


Figure 11: Direct fix window sill flashings without facings

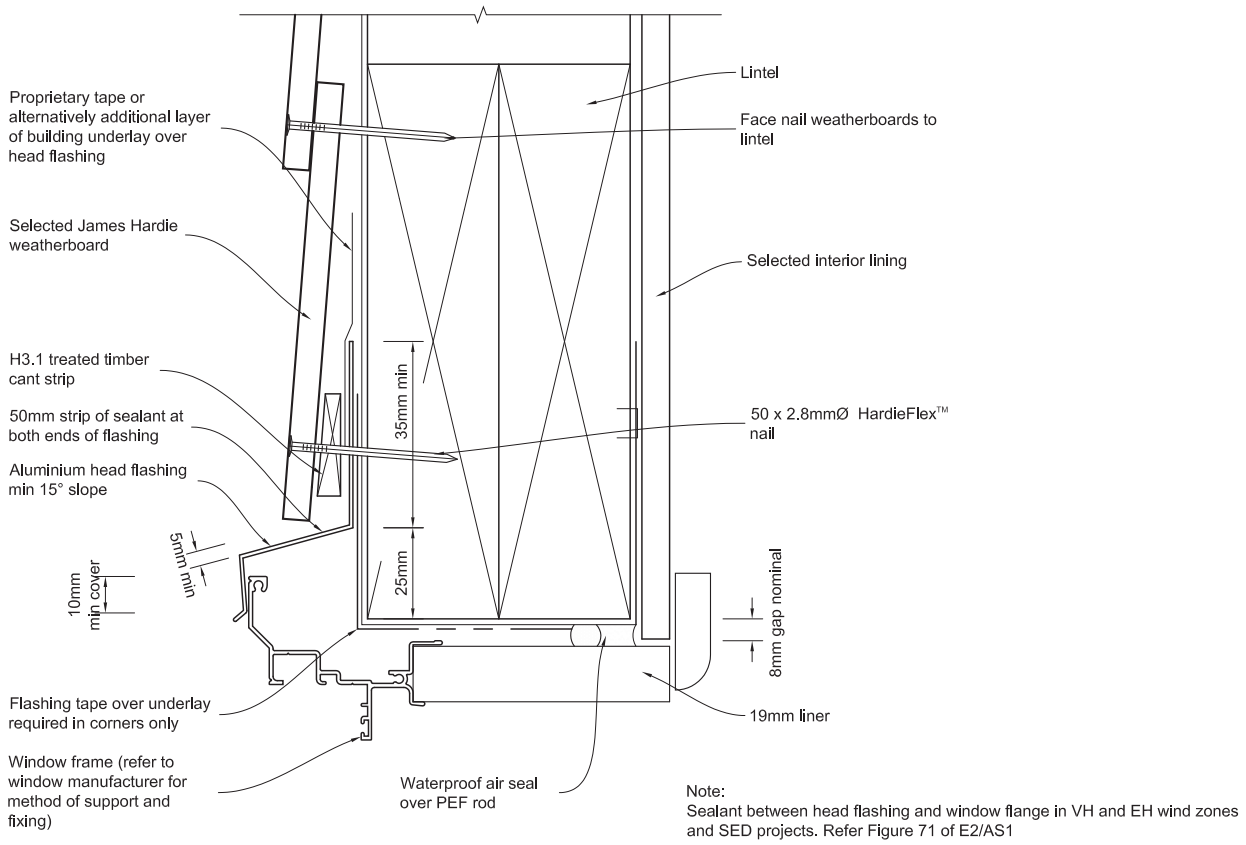


General notes for materials selection

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC 'E2/AS1'.
2. Building underlay must comply with acceptable solution 'E2/AS1'.
3. Flashing tape must have proven compatibility with the selected building underlay and other materials with which it comes into contact.

Refer to the manufacturer or supplier for technical information for these materials.

Figure 12: Direct fix one piece head flashing without facings



Note:
Sealant between head flashing and window flange in VH and EH wind zones and SED projects. Refer Figure 71 of E2/AS1

Figure 13: Direct fix jamb flashing without facings

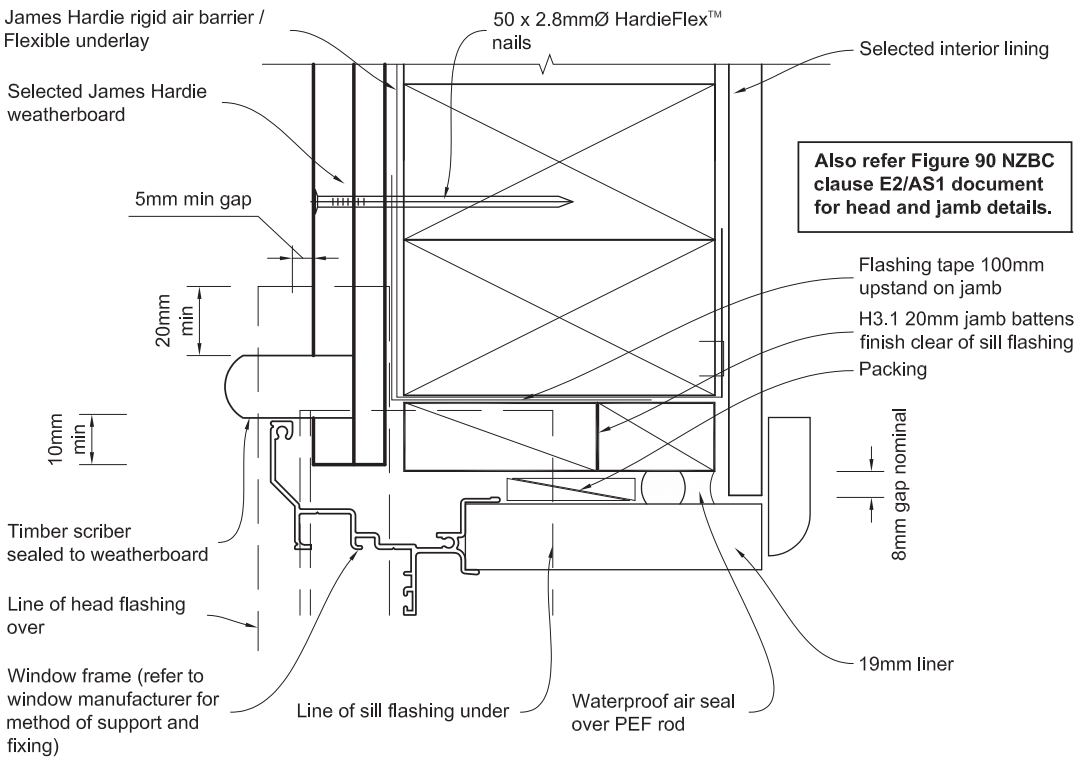


Figure 14: Cavity framing and batten setout

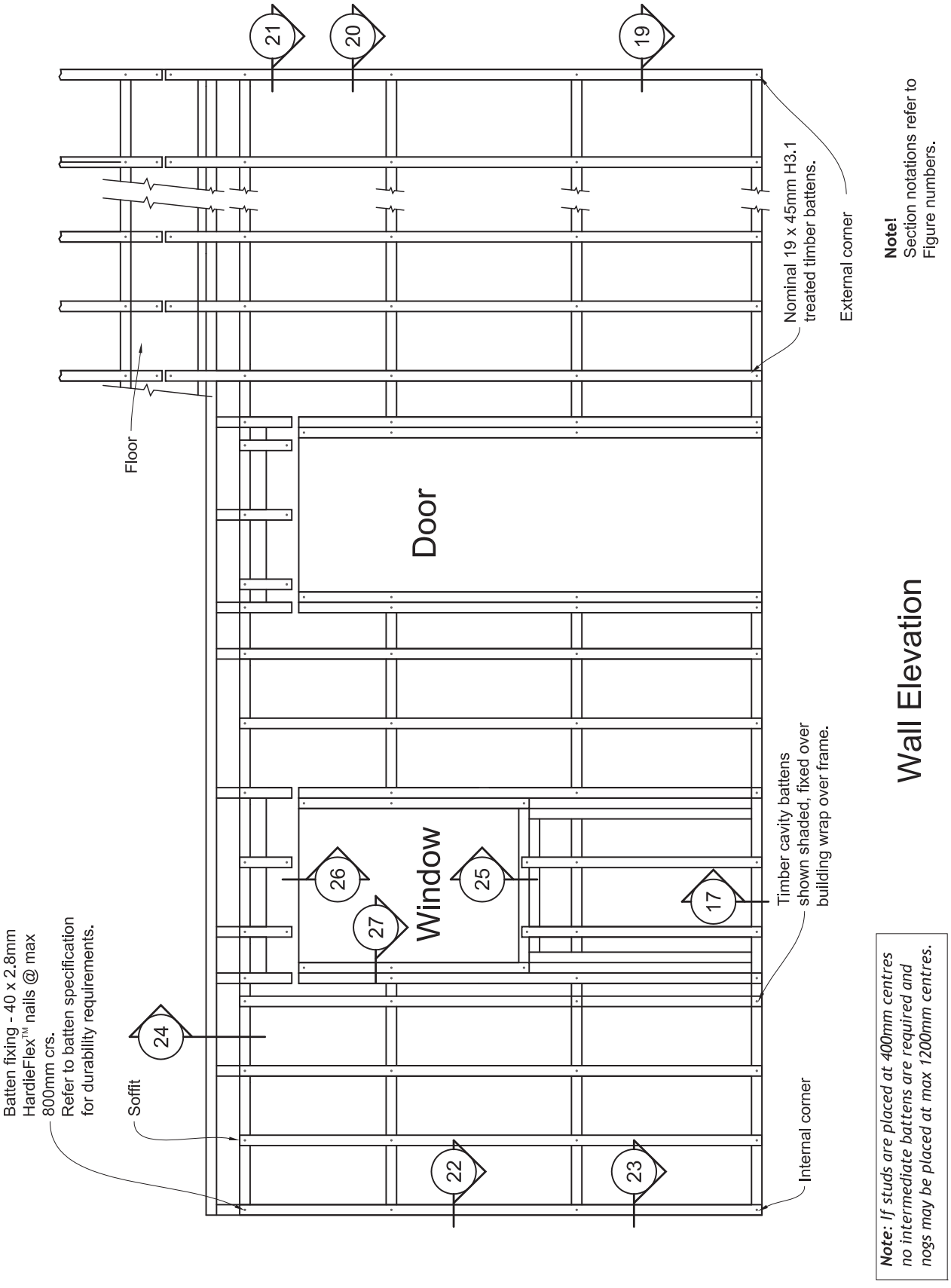
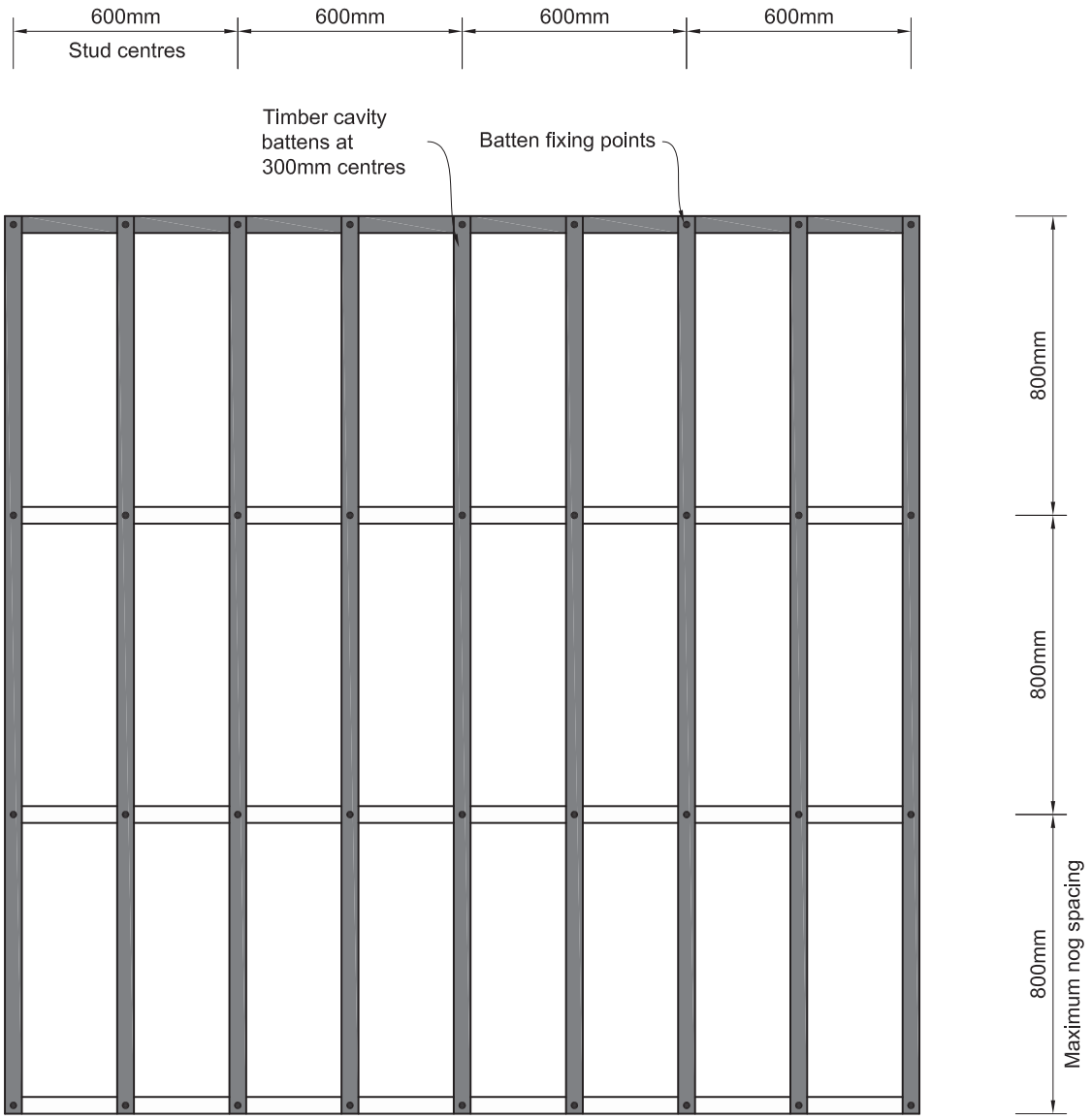


Figure 15: Cavity framing batten fixing



Minimum stud width 35mm

Note: No horizontal timber cavity battens required at nogs

Figure 16: Cavity weatherboard fixing setout

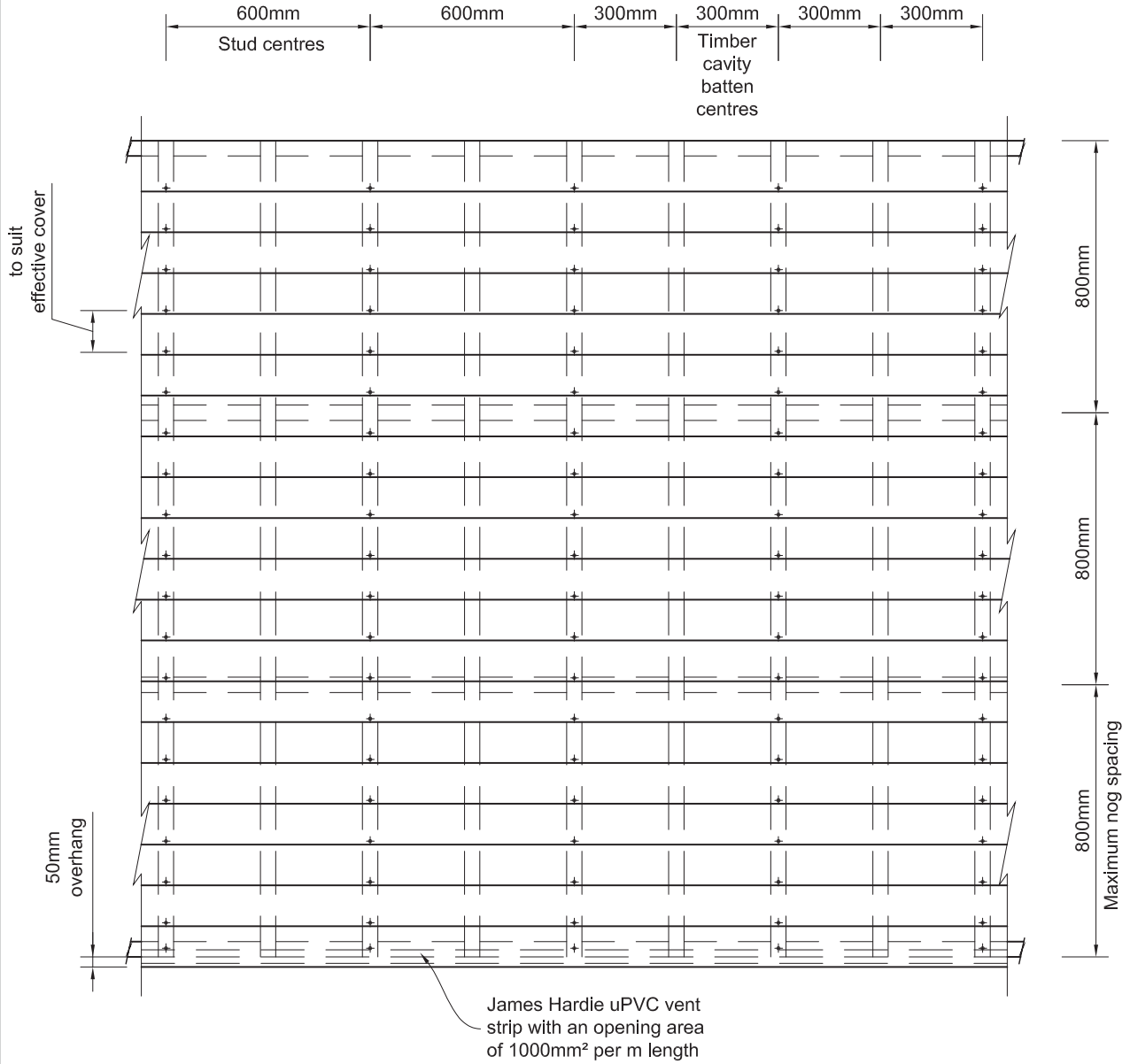


Figure 17: Cavity concrete footing

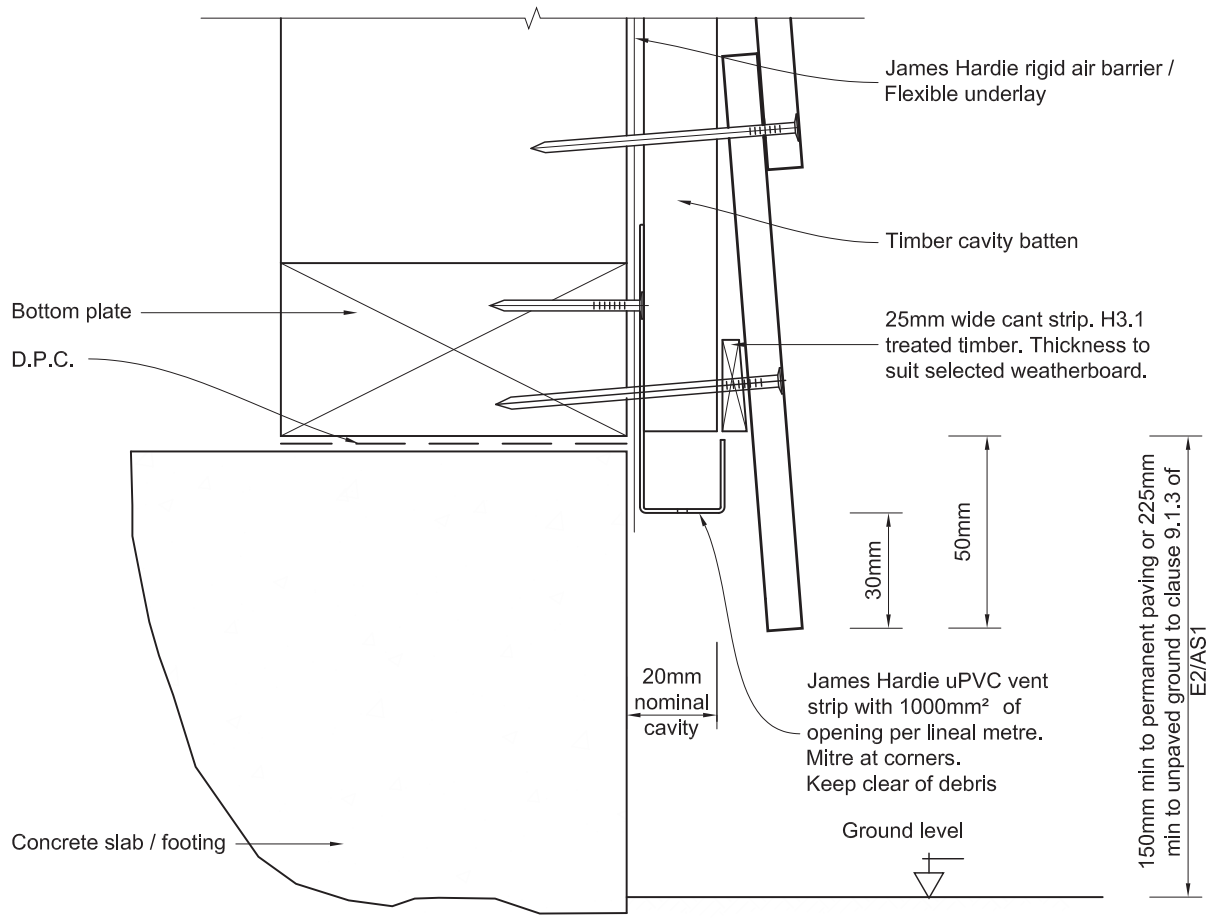
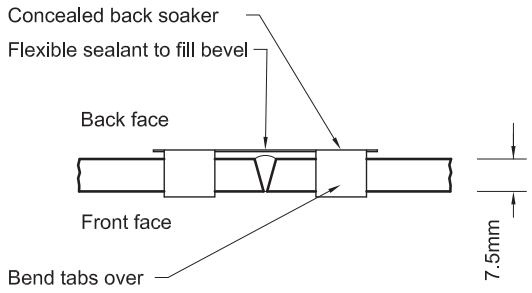
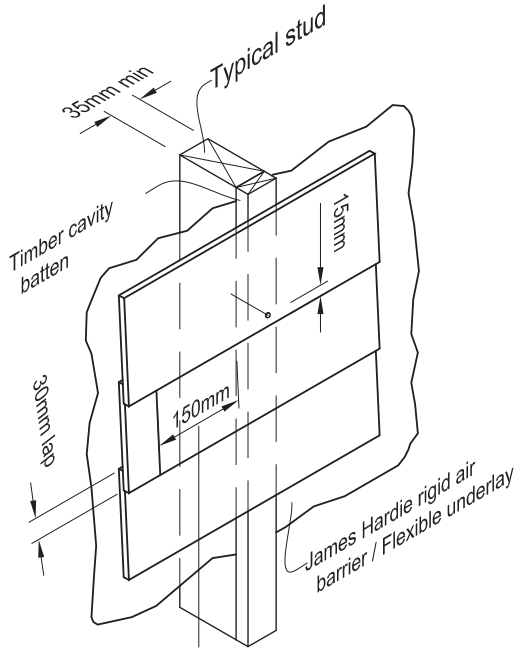


Figure 18: Cavity weatherboard fixing



Concealed Back Soaker



Concealed back soaker join in weatherboard to be 150mm minimum from side of stud.
Joints must be staggered by 600mm minimum

Jointing off Stud

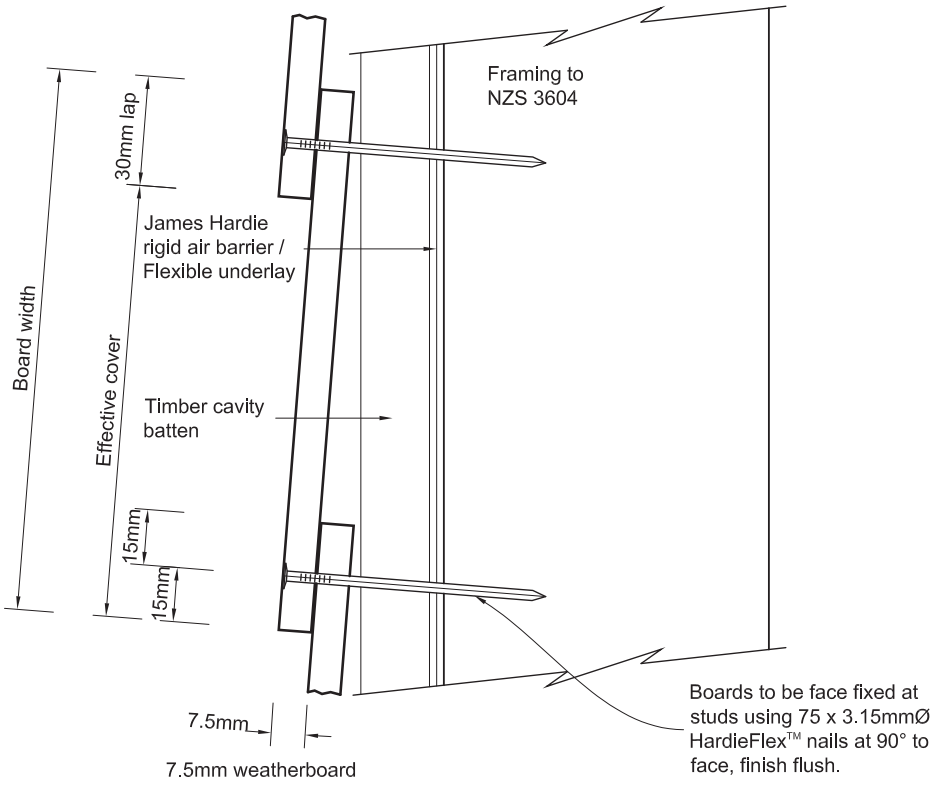


Figure 19: Cavity uPVC or aluminium box corner

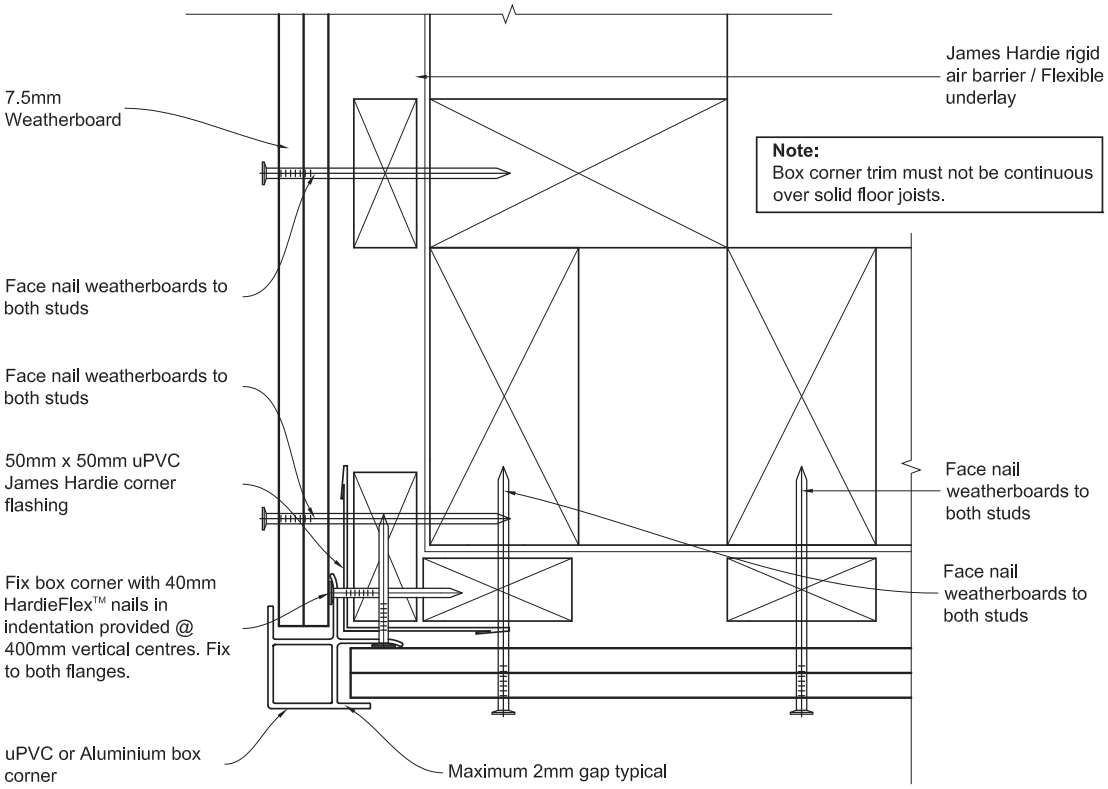


Figure 20: Cavity boxed corner

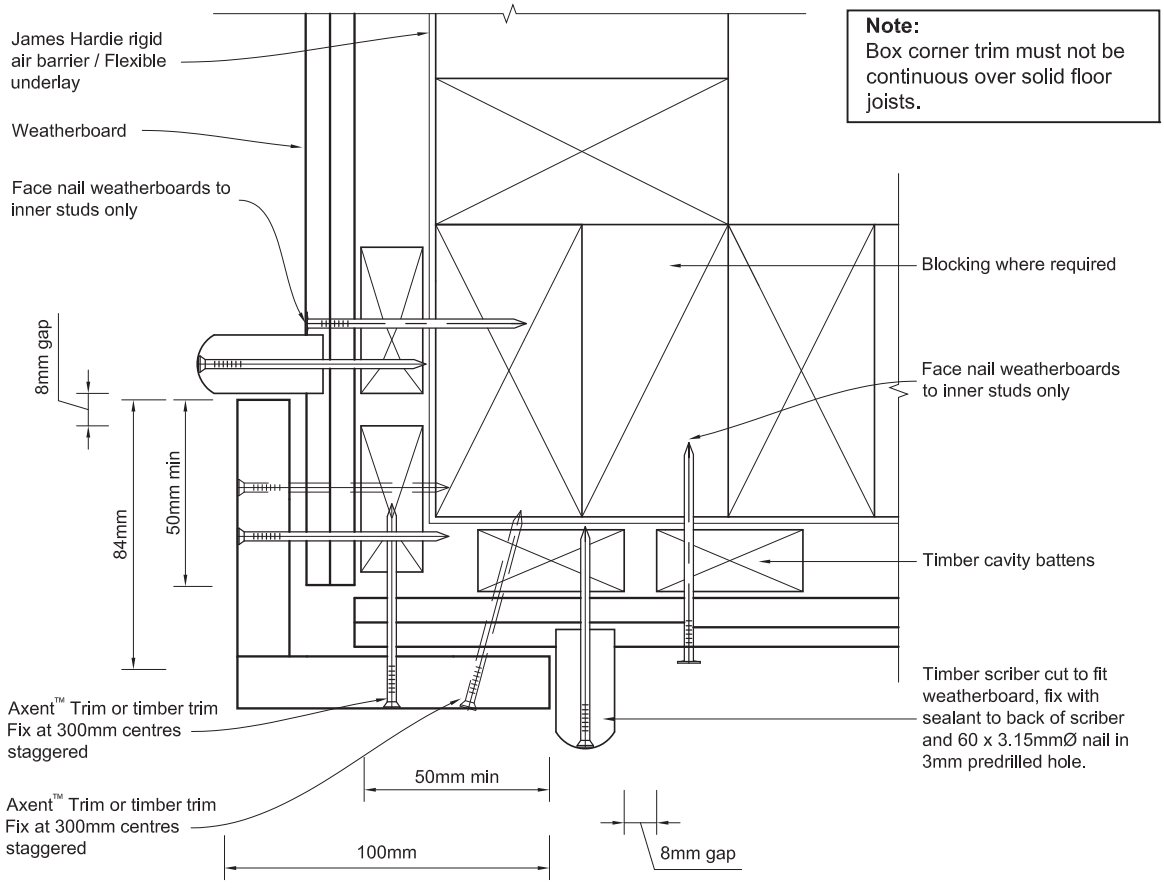
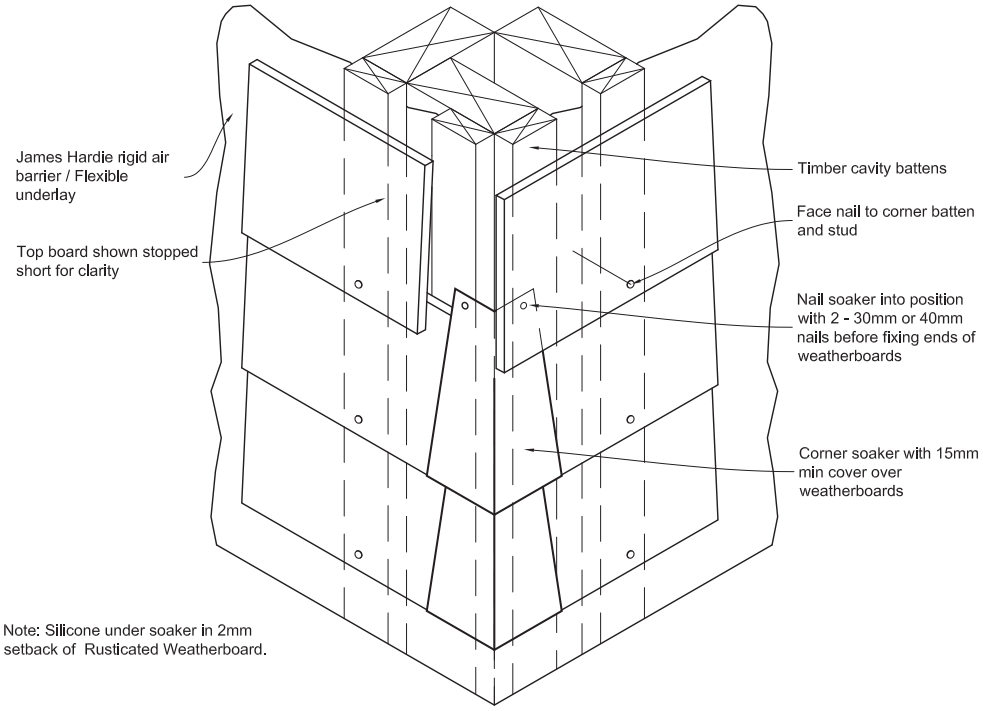


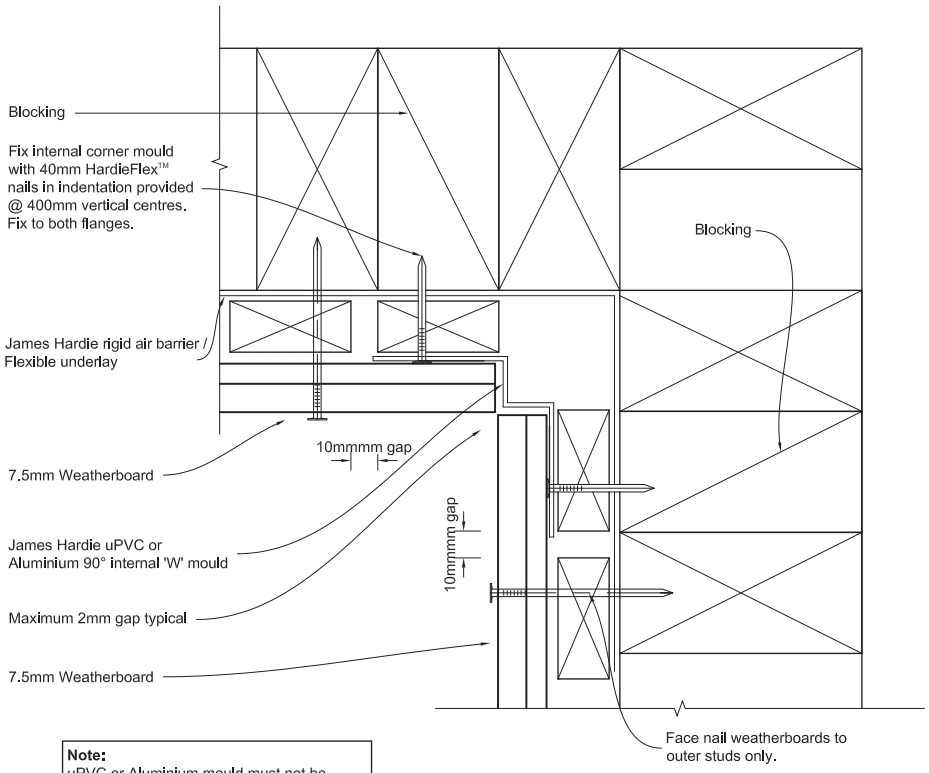
Figure 21: Cavity external corner soaker



Corner Soaker

Soaker material	Nail material
Aluminium or Galvanised Steel	Hot dip galvanised or Stainless Steel as required for durability

Figure 22: Cavity internal 90º uPVC or aluminium 'W' mould



Note:
uPVC or Aluminium mould must not be continuous over solid floor joists.

Figure 23: Cavity internal 135º aluminium 'W' mould

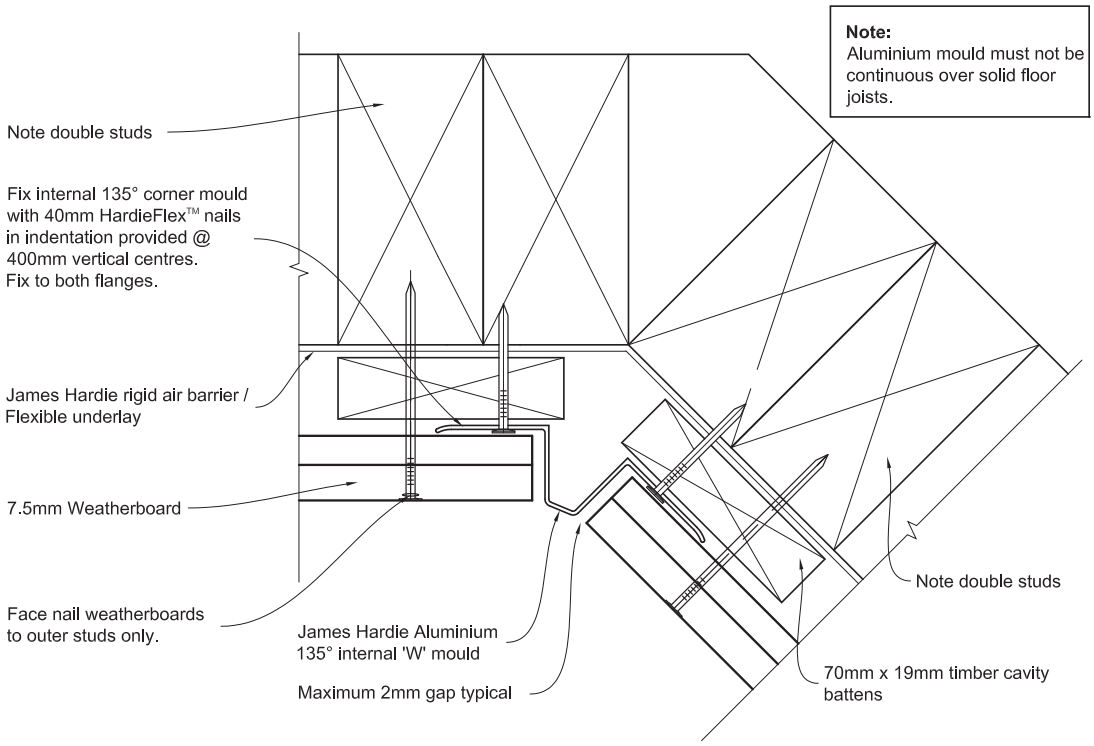


Figure 24: Cavity soffit detail

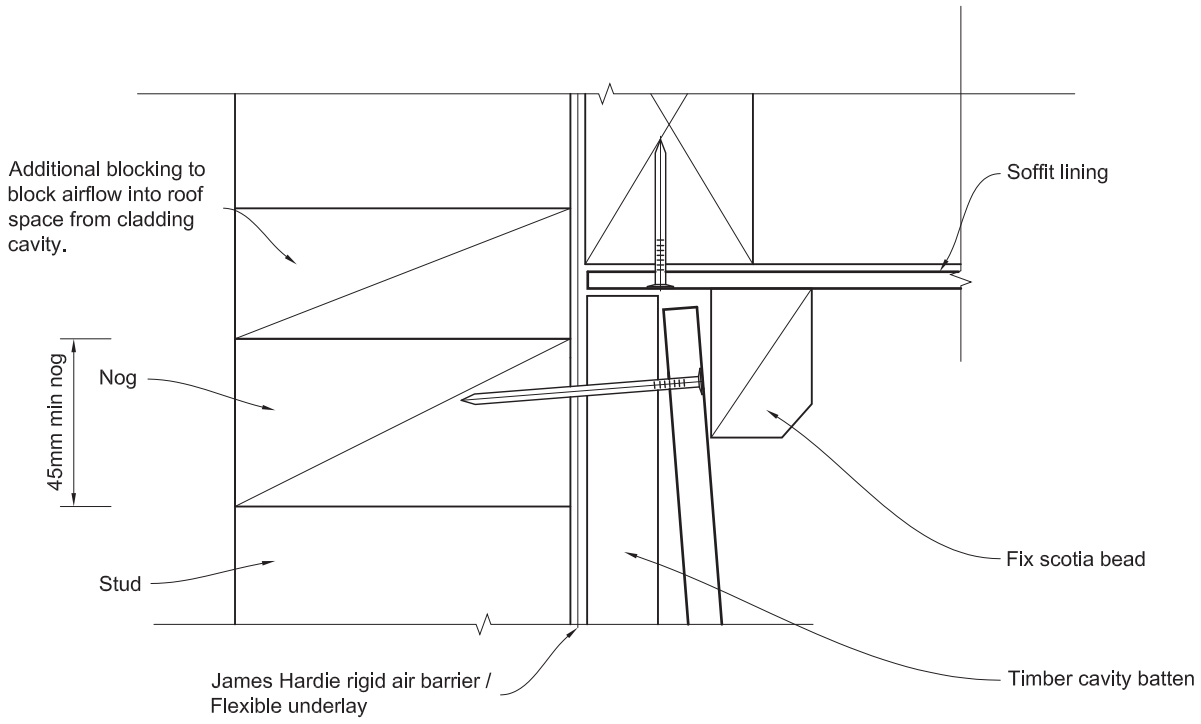
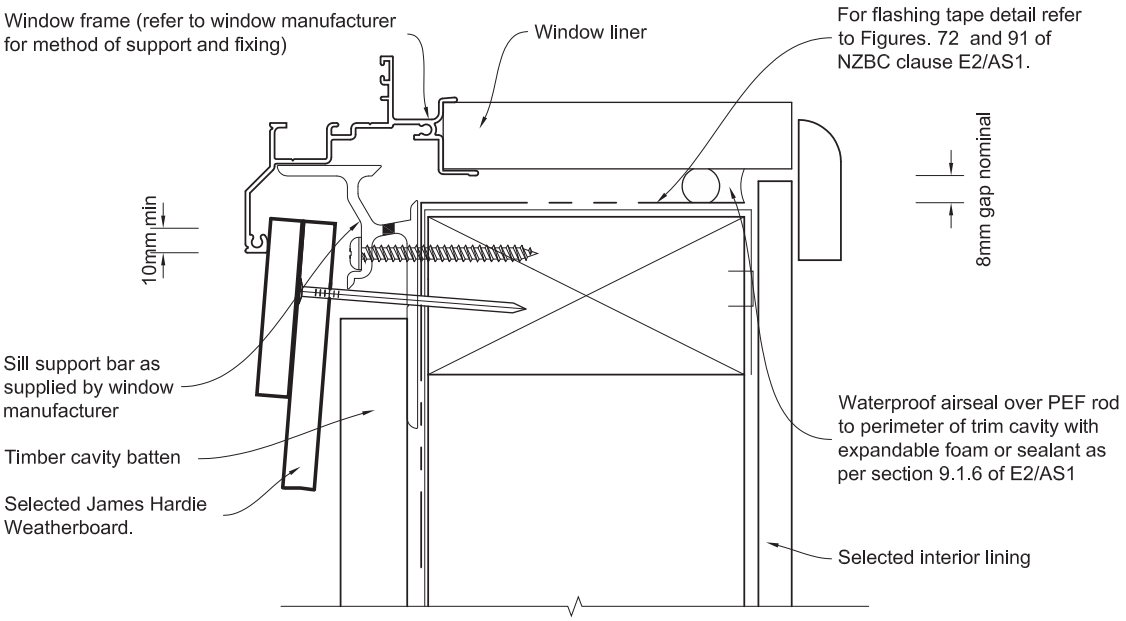


Figure 25: Cavity sill flashing without facings

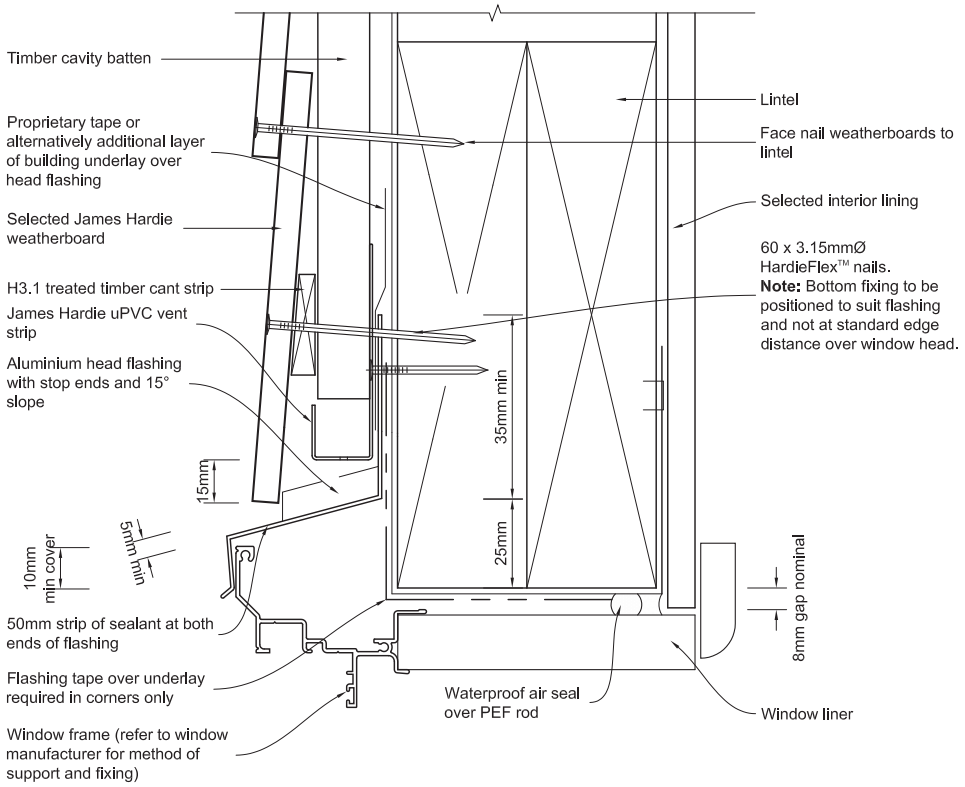


General notes for materials selection

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC 'E2/AS1'.
2. Building underlay must comply with acceptable solution NZBC 'E2/AS1'.
3. Flashing tape must have proven compatibility with the selected building underlay and other materials with which it comes into contact.
4. Sill support bars must comply with EM6, E2/AS1 and B2/AS1

Refer to the manufacturer or supplier for technical information for these materials.

Figure 26: Cavity one piece head flashing without facings



Note: Sealant between head flashing and window flange in VH and EH wind zones and SED projects. Refer Figure 71 of E2/AS1

Figure 27: Cavity jamb flashing without facings

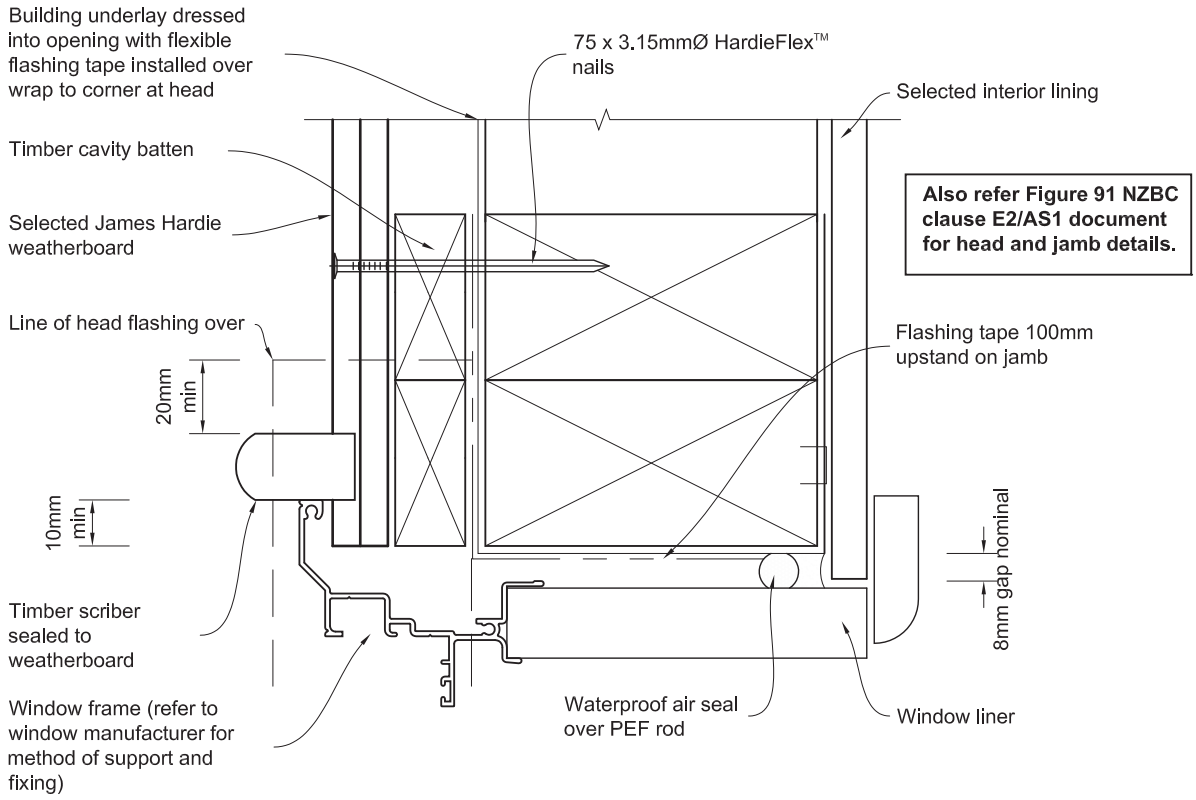
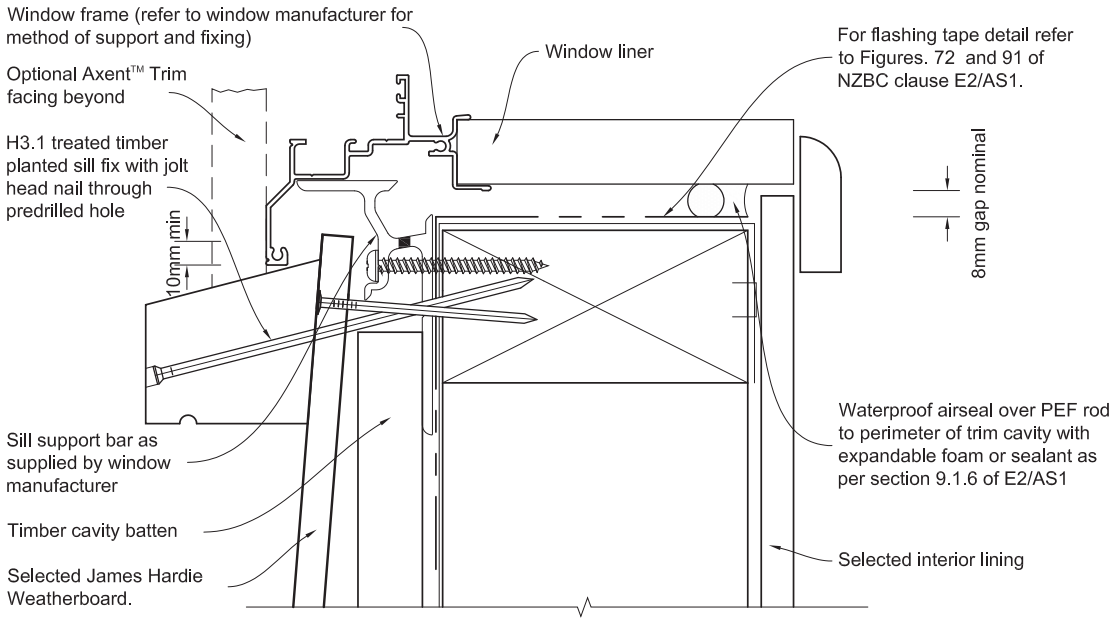


Figure 28: Cavity sill flashing with facing

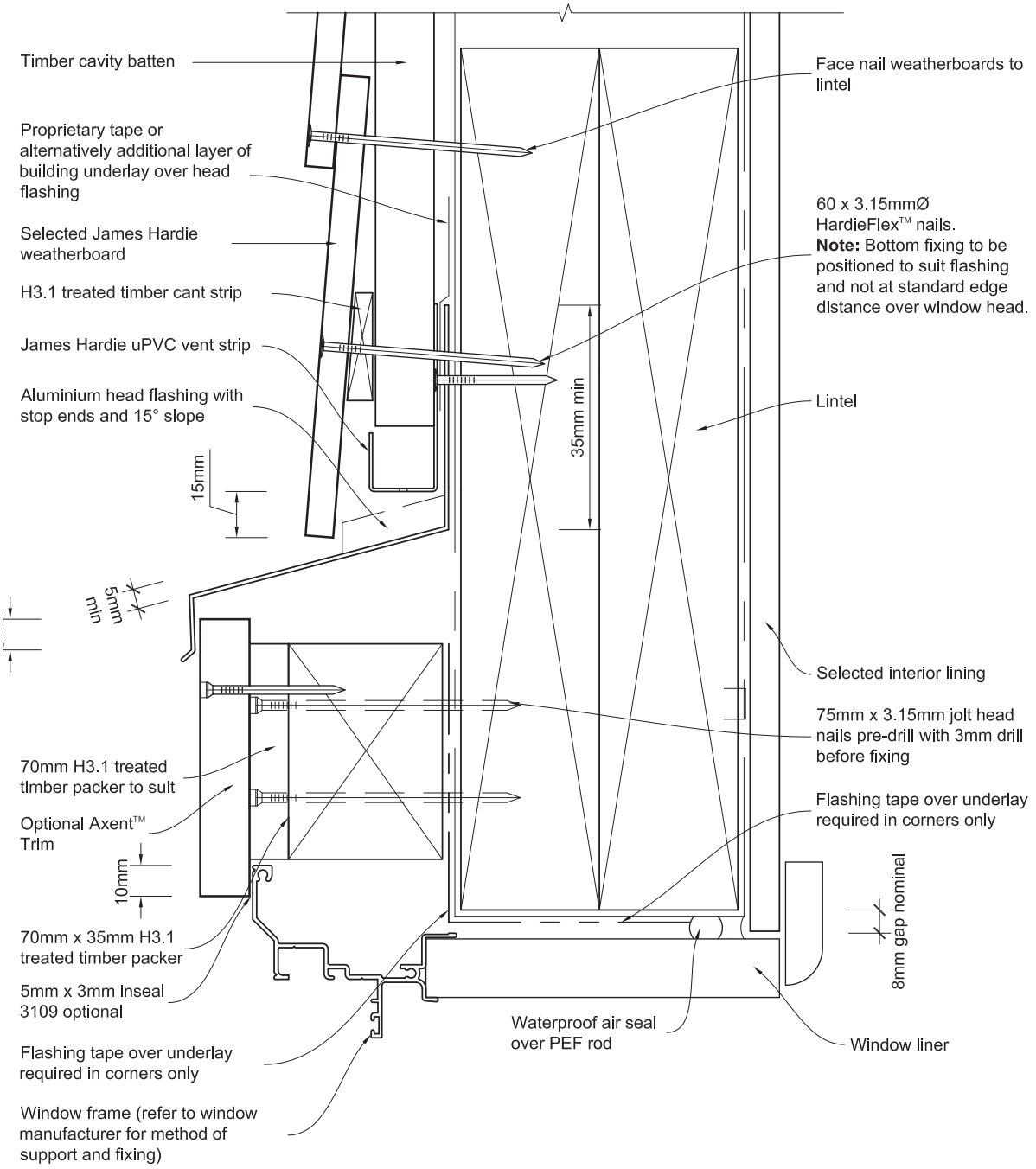


General notes for materials selection

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC 'E2/AS1'.
2. Building underlay must comply with acceptable solution NZBC 'E2/AS1'.
3. Flashing tape must have proven compatibility with the selected building underlay and other materials with which it comes into contact.
4. Sill support bars must comply with EM6, E2/AS1 and B2/AS1

Refer to the manufacturer or supplier for technical information for these materials.

Figure 29: Cavity one piece head flashing with facings



Note: Sealant between head flashing and window flange in VH and EH wind zones and SED projects.
Refer Figure 71 of E2/AS1

Figure 30: Cavity jamb flashing with facings

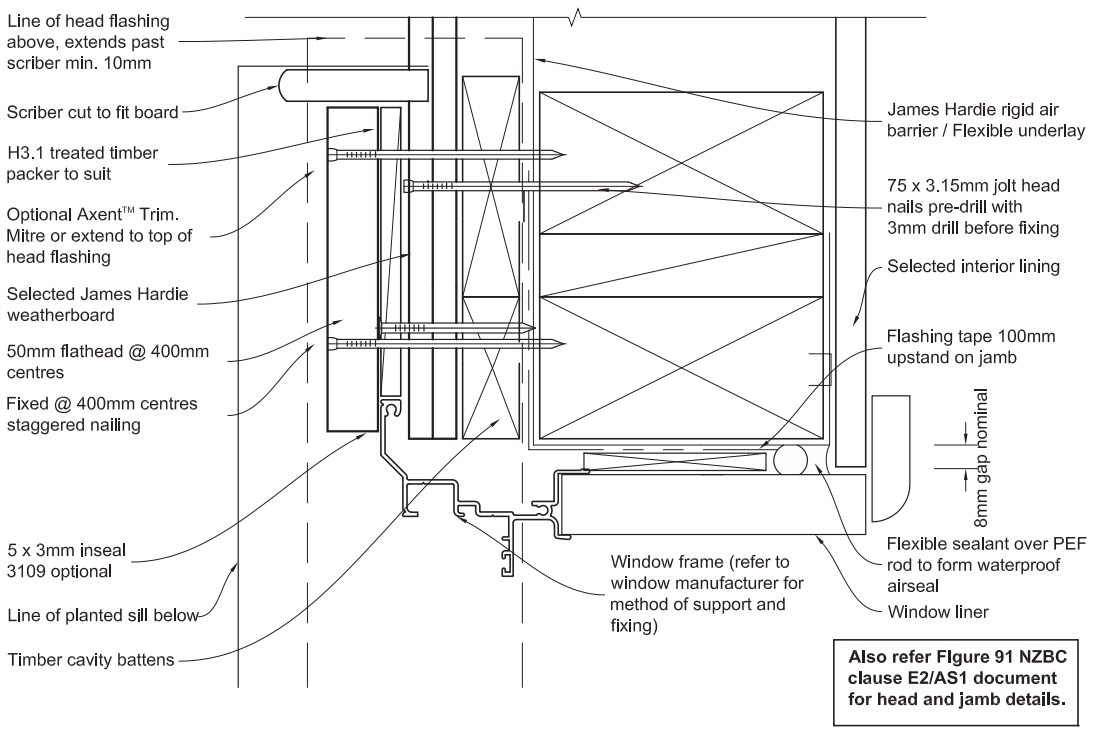
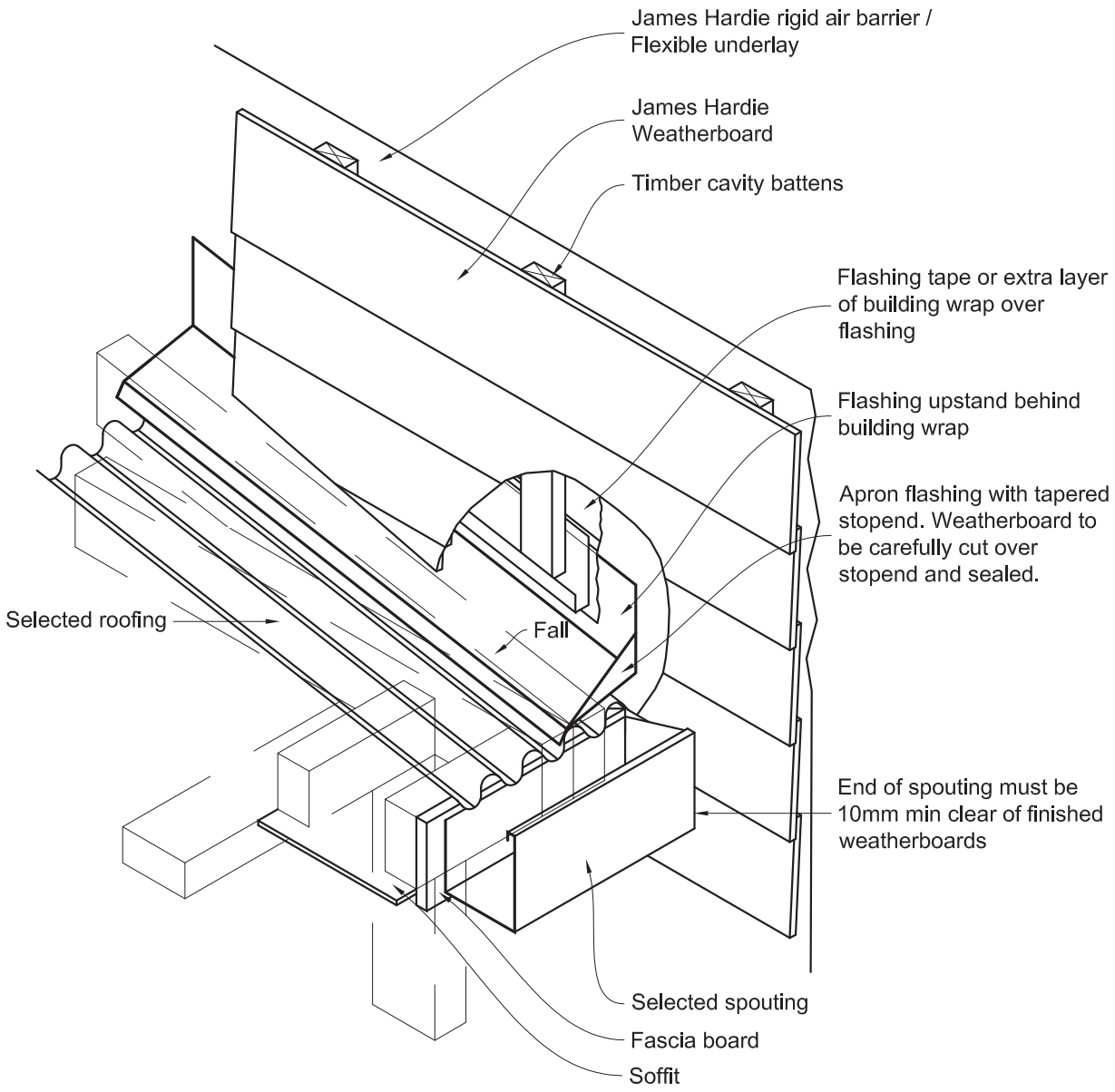


Figure 31: Cavity framing and batten setout



*
When 50 year durability for flashing is required refer Table 20 NZBC E2/AS1 document.

Figure 32: Cavity parapet flashing

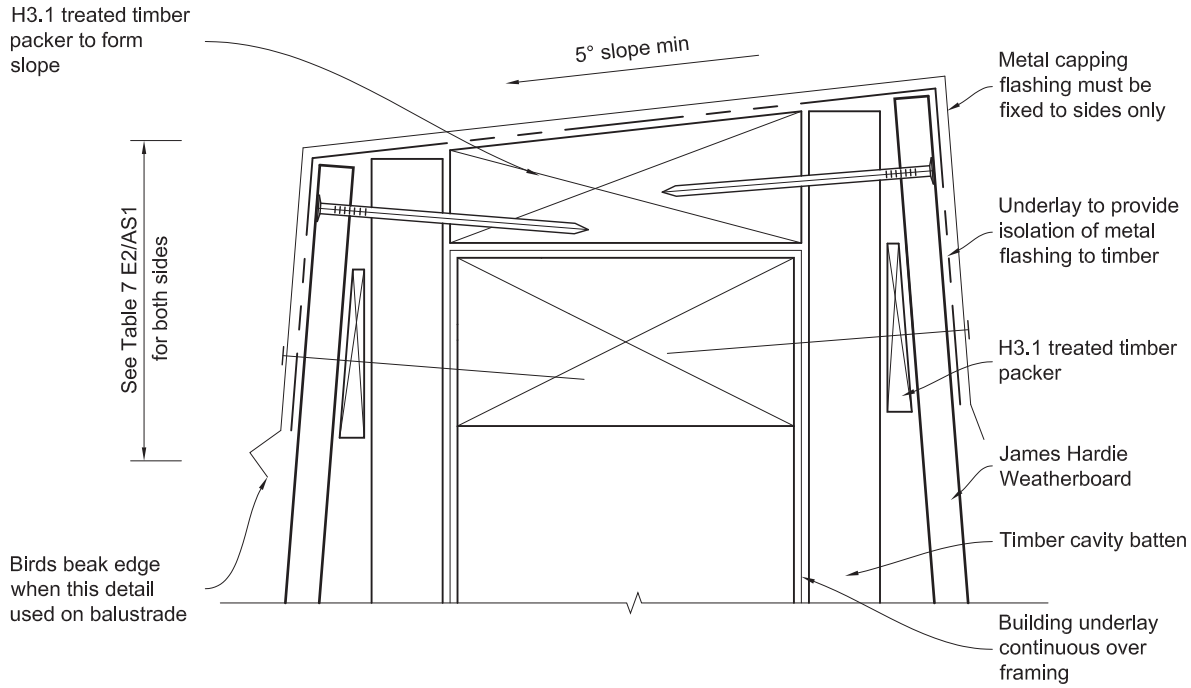


Figure 33: Cavity meter box at head

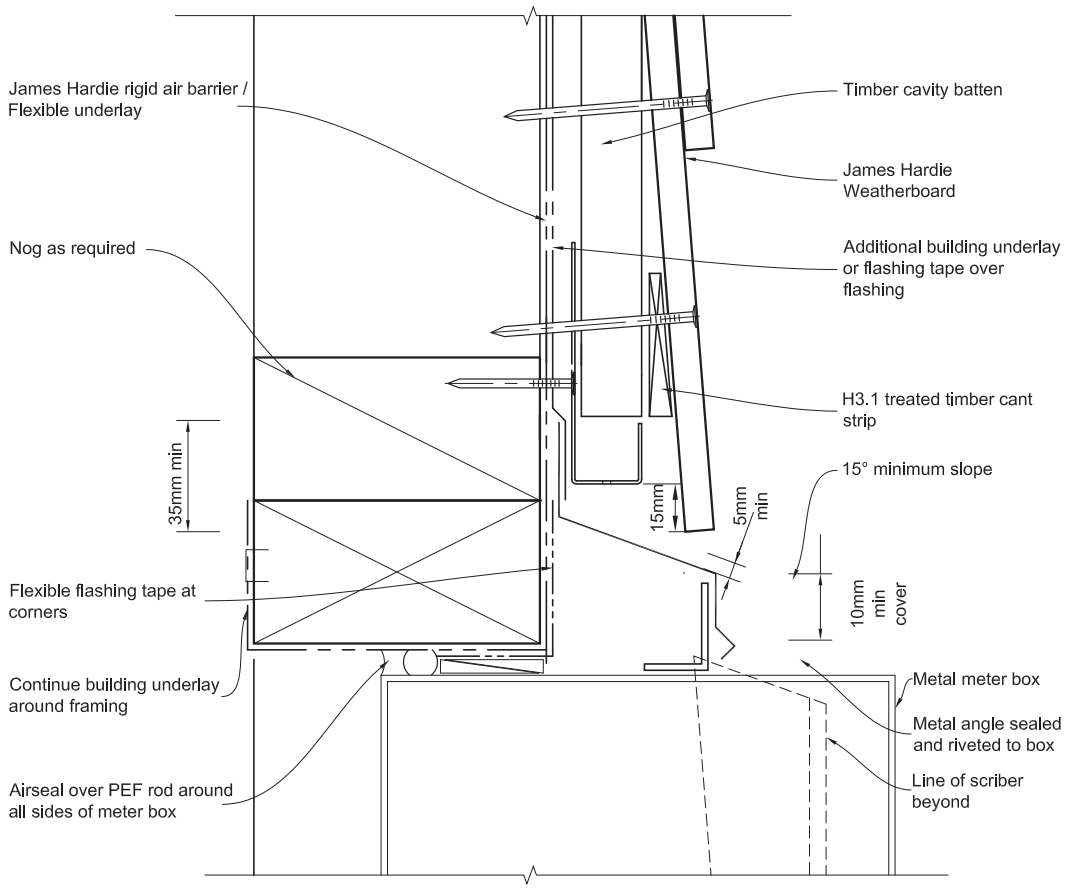


Figure 34: Cavity meter box at sill

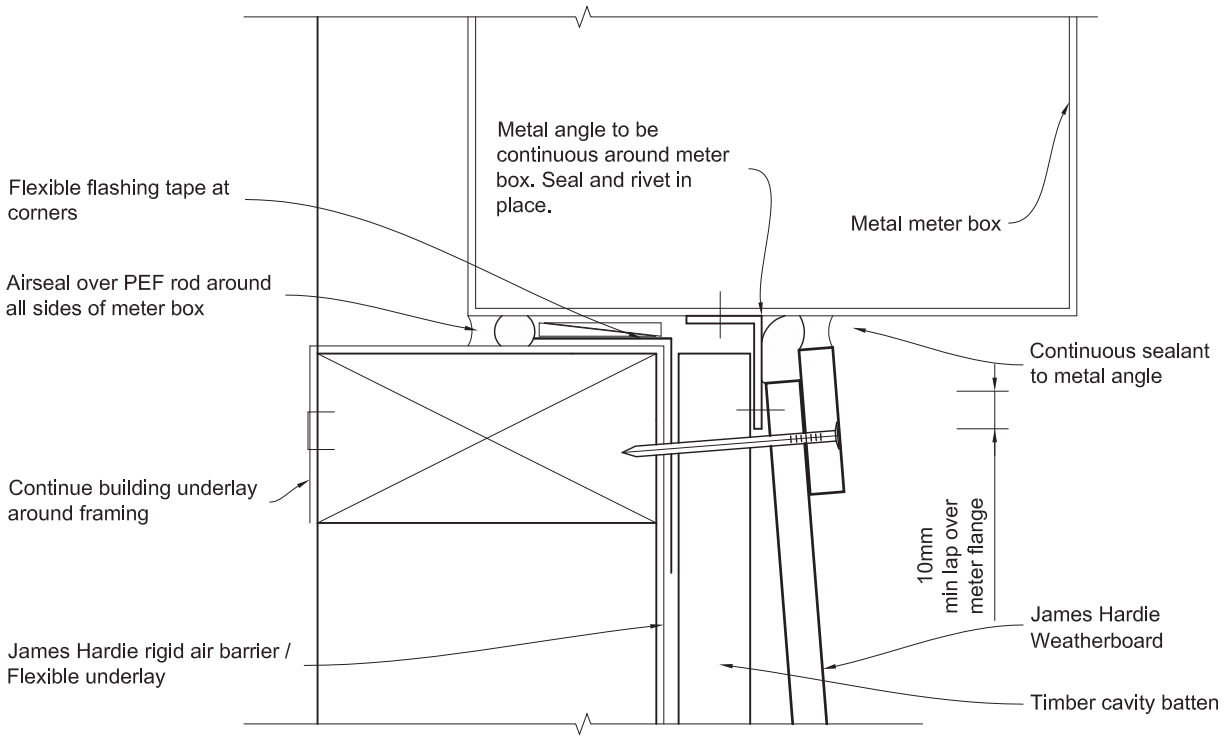


Figure 35: Cavity meter box head flashing at jamb

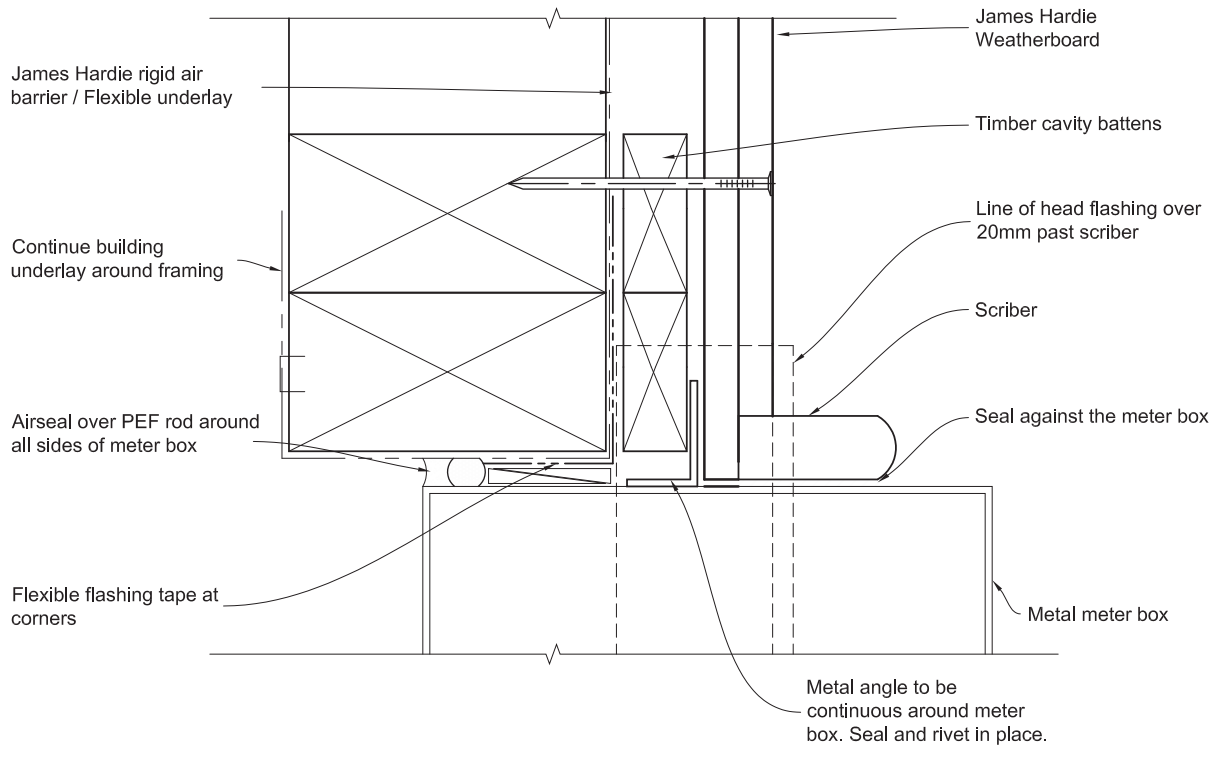


Figure 36: Cavity pipe penetration

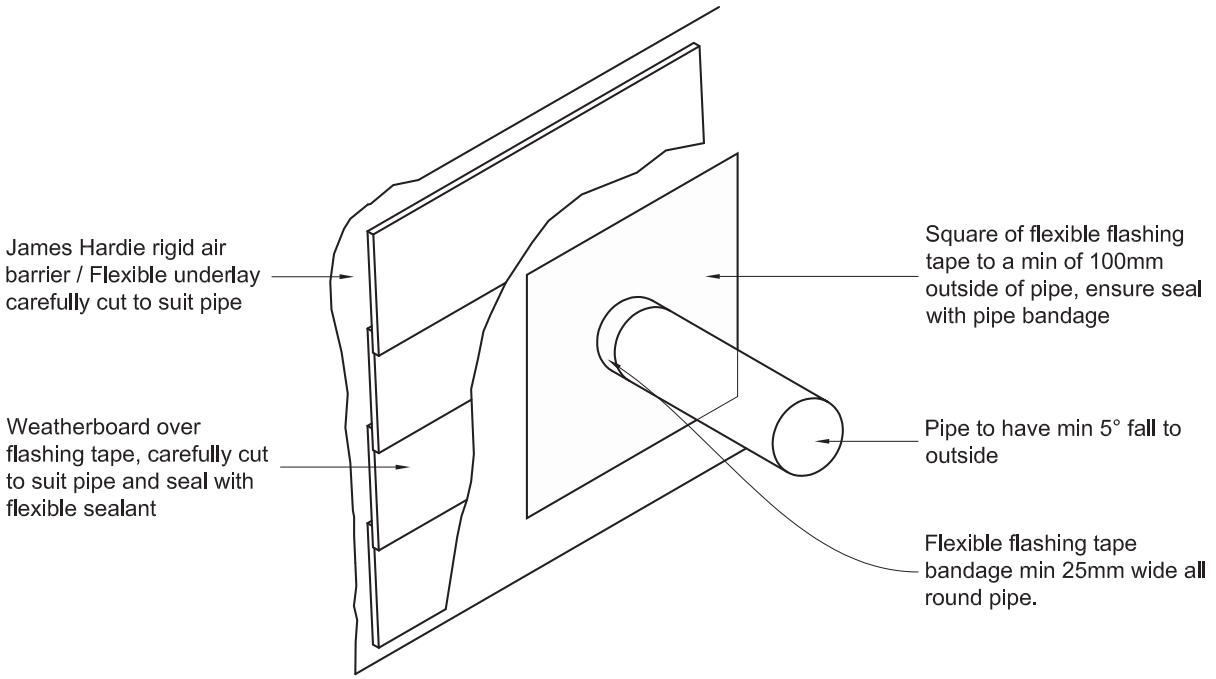
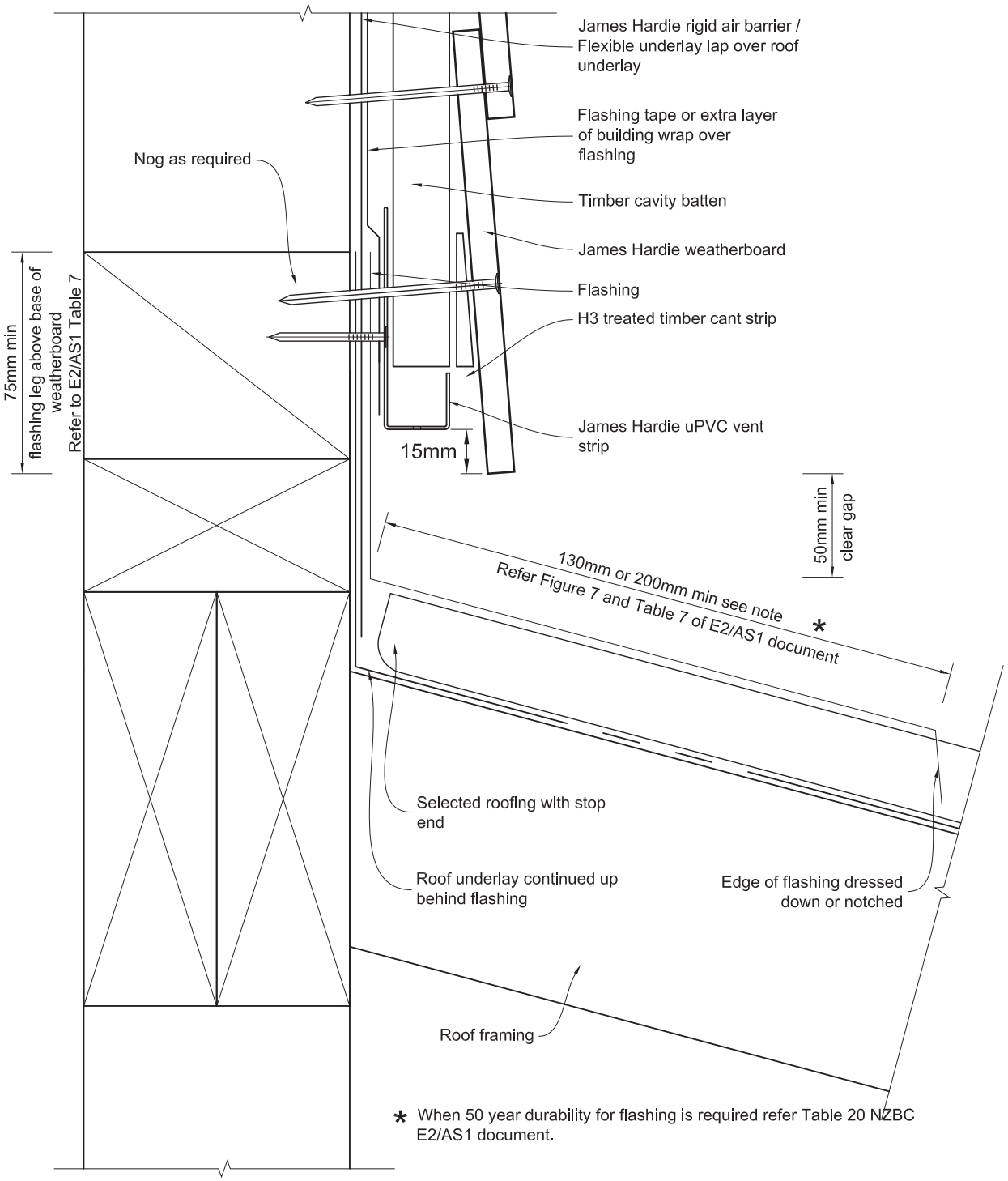


Figure 37: Cavity one piece apron flashing joint



Notes

Notes

Product Warranty

James Hardie®
WEATHERBOARD

November 2015

James Hardie New Zealand ("James Hardie") warrants for a period of 15 years from the date of purchase that the James Hardie Weatherboards (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. 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 Weatherboards are classified as acceptable solution as per E2/AS1 and conforms to the requirements of NZBC when installed in accordance with the James Hardie Weatherboards Technical Specifications.

Ask James Hardie™
Call 0800 808 868
www.jameshardie.co.nz

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