

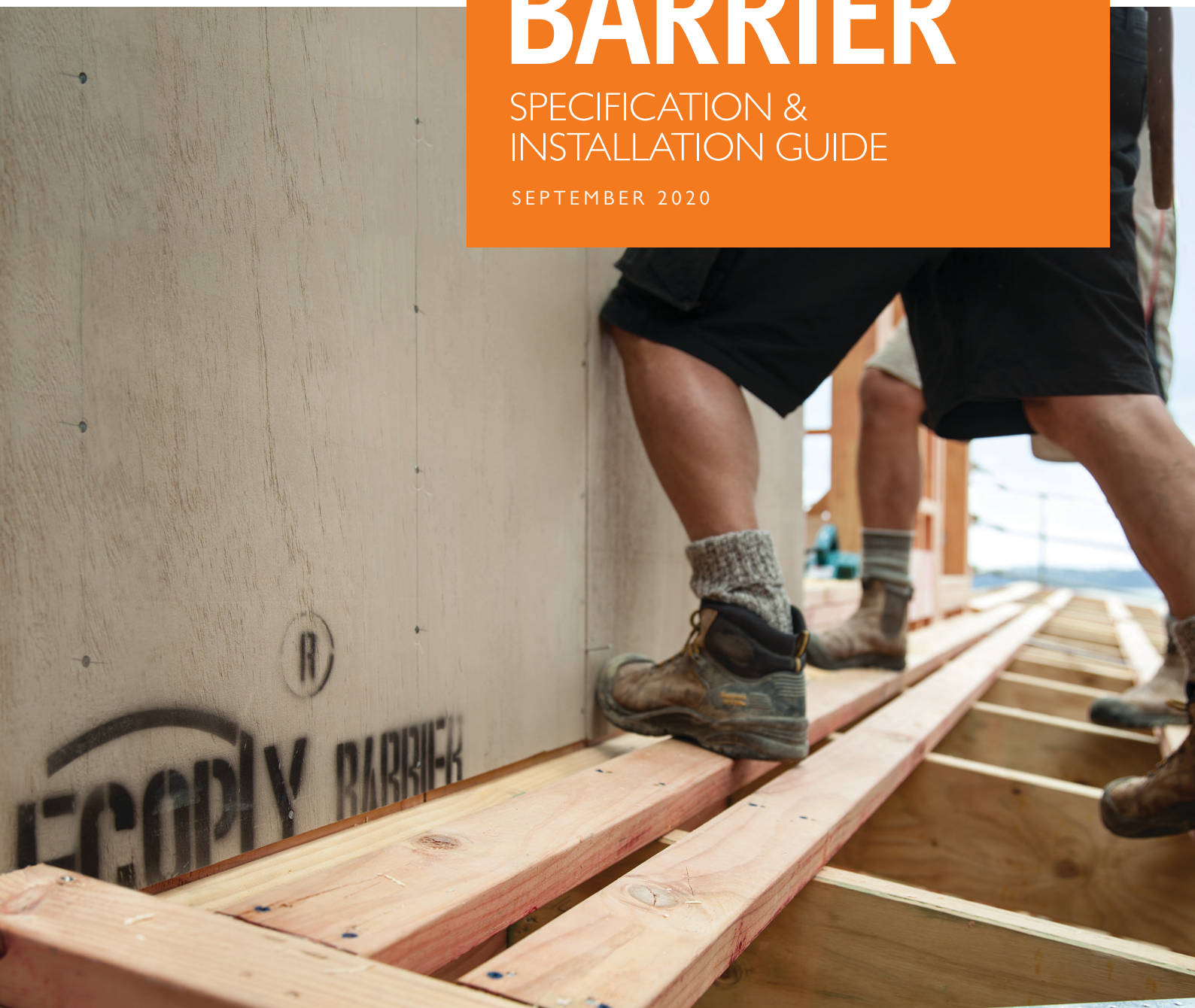


ECOPLY® STRUCTURAL  
RIGID AIR BARRIER

# BARRIER

SPECIFICATION &  
INSTALLATION GUIDE

SEPTEMBER 2020



CHH PLY

Information contained within is specific to Ecoply® Barrier structural plywood products and must not be used with any other plywood products, no matter how similar they may appear.



# BARRIER

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## 1.0 ECOPLY® BARRIER

Ecoply® Barrier provides a weathertight rigid air barrier system for drained and vented cavity systems outside the building frame, effectively replacing traditional building wrap in the cavity while providing structural bracing, and forming a strong secondary line of defence against moisture penetration into the building envelope.

Ecoply Barrier is suitable for use in both residential and commercial buildings and consists of a 7mm thick H3.2 CCA (Copper Chrome Arsenate) water borne treated structural plywood panel which is coated on the face and edges using a polyester powder coating process for increased sheet durability and protection from moisture penetration.

Ecoply Barrier meets the New Zealand Building Code (NZBC) requirements for rigid underlays as outlined in section 9.1.4, the performance requirements of Table 23 of NZBC Clause E2 External Moisture, Acceptable Solution (E2/AS1), and has been tested for wind speeds exceeding Extra High wind zone as defined in Standards New Zealand 3604 Timber Framed Buildings (NZS 3604). Testing has been completed to provide solutions for buildings outside the scope of NZS 3604. For details on this, please contact CHH Woodproducts for further information.

Ecoply Barrier is BRANZ appraised for use as a rigid sheathing and temporary weather-protecting sheathing on timber framed buildings.

Ecoply Barrier must be competently installed in accordance with good building practices and sound design principles to satisfy the requirements of the Building Act 2004, the New Zealand Building Code (NZBC), and applicable New Zealand Standards. This is the responsibility of building owners and the design professionals and builders that they engage.

This document contains information, limitations, and cautions regarding the properties, handling, installation, usage, and the maintenance of Ecoply Barrier. However, to the maximum extent permitted by law, Carter Holt Harvey Plywood New Zealand Limited (CHH Ply) assumes no legal liability to you in relation to such information.

Ecoply Barrier panels are engineered to allow the wall system to breathe and dry out, while also preventing the intrusion of exterior moisture. Once the full system has been installed, the system provides a lasting protective barrier.

### What is a Rigid Air Barrier?

A rigid air barrier is a barrier against air pressure and water infiltration from the outside to the interior of the building. A rigid air barrier acts as a secondary line of defence against water penetrating into the wall system – the primary defence being the exterior wall cladding.

### Definition of an Air Barrier:

- Impermeable to airflow — the system must be continuous (no holes, openings or penetrations) and resistant to air pressure differentials.
- Continuous over the entire building enclosure.
- Able to withstand the forces that may act on them during and after construction.

Ecoply Barrier is a full sheathing system developed to prevent unwanted air movement and replace traditional building wrap.



**BRANZ Appraised**  
Appraisal No.827 [2019]

*The information contained in this document is current as at September 2020. It is your responsibility to ensure you have the most up to date information available. The information contained in this publication relates specifically to Ecoply® Barrier manufactured by CHH Ply and must not be used with any other plywood manufacturer's products no matter how similar they may appear. Alternative plywood products can differ in a number of ways which may not be immediately obvious and substituting them for Ecoply Barrier structural plywood products or Ecoply Barrier Tapes is not appropriate, and could in extreme cases lead to premature failure and/or buildings which do not meet the requirements of the New Zealand Building Code (NZBC).*



## 2.0 ECOPLY® BRAND

Ecopy® Barrier panels are manufactured in New Zealand by CHH Ply under a third party audited quality control programme to monitor compliance with AS/NZS 2269 – Plywood Structural.



## 3.0 TECHNICAL INFORMATION & CAD DETAILS

Technical data sheets and CAD drawings referenced in this guide are available for download from [www.ecoplybarrier.co.nz](http://www.ecoplybarrier.co.nz).

Ecopy Barrier (Rigid Air Barrier) is compliant with NZBC Clause B2.3.1 (a), for not less than 50 years, when used where the cladding durability requirement or serviceable life is not less than 50 years, e.g. structural bracing, and compliant with NZBC Clause B2.3.1 (b), for 15 years where the cladding durability requirement is 15 years when used as a temporary sheathing.

When specifying or installing Ecopy Barrier visit [www.ecoplybarrier.co.nz](http://www.ecoplybarrier.co.nz) or call 0800 326 759 to ensure you have current specification material and any relevant technical notes.

For information on Ecopy Barrier for Steel, please refer to the current Ecopy Barrier for Steel Specification & Installation Guide which can be downloaded from [www.ecoplybarrier.co.nz/ecoply-barrier-for-steel](http://www.ecoplybarrier.co.nz/ecoply-barrier-for-steel).

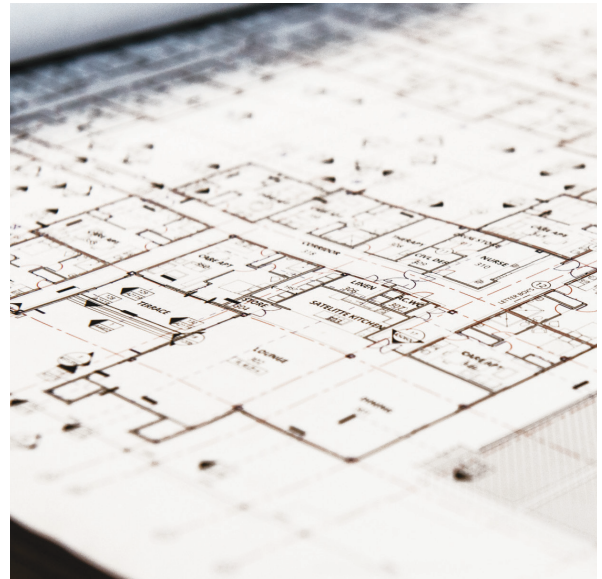
## 4.0 ECOPLY® BARRIER ADVANTAGES

### 4.1 ARCHITECTS / DESIGNERS

Modern construction practices are moving toward providing greater energy efficiency and an airtight building envelope. These principles of high performance building are common in nearly all current green building standards and construction codes. Proper sealing between wall assembly components prevents unwanted air movement in and out of conditioned air spaces.

#### Advantages:

- Ecopy Barrier can form an integral part of a weathertight system including two of the four 'Ds' of weathertightness; drying and drainage.
- A rigid air barrier provides a more robust cavity and prevents the insulation bulging, which would increase the chance of moisture bridging from the cladding to the framing line.
- Provides both structural support and protection from moisture. Structural bracing is achieved when installed in accordance with the Ecopy Barrier bracing specifications. Bracing benefits may result in cost savings by reducing internal lining bracing elements (Refer to section 7.6 on bracing).
- BRANZ appraised system, fully tested and code compliant rigid air barrier system.
- Manufactured from sustainably-grown NZ plantation pine and available FSC certified (FSC-C012019) upon request.
- Low formaldehyde emission (E0).



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## 4.2 BUILDERS

Ecoply® Barrier lets you say goodbye to flexible wall underlays forever. Builders no longer need to worry about installing traditional house wrap or building paper on a windy day or having to return for re-work due to rips, tears or wrap that has blown off the home. Builders building with Ecoply Barrier may reduce the build time of a house by allowing for early close in (which enables the potential for internal linings to be installed at the same time as claddings).

Ecoply Barrier installs quickly with two easy steps – fasten the panels and tape the seams. Once completed, the system provides moisture protection both during and after construction



### Advantages:

- Immediate close-in of structure, allowing interior and exterior work to be completed in parallel.
- Reduced builder liability; strong secondary line of defence and solid material for sealing penetrations.
- Schedule your subcontractors sooner.
- No call backs for rips, tears or wrap that has blown off.
- Easy to work light material, simple and easy to install.
- Up to 180 day exposure during construction cycle. No hold-ups while the cladding has to be installed i.e. brick layers etc.

## 4.3 HOMEOWNERS

An airtight building envelope means less airflow into and out of the home. Since conditioned air is expensive air, homeowners can take comfort in knowing that Ecoply Barrier will provide a strong secondary line of defence against the elements.

### Advantages:

- Builders Building with Ecoply Barrier may reduce the build time of a house by allowing for early close in (which enables the potential for internal linings to be installed at the same time as claddings)
- Structurally rigid home.



## 5.0 ECOPLY® BARRIER COMPONENTS

**Table 1: Product Range**

Description	Weight (kg/m <sup>2</sup> )	Thickness	Width	Length
<b>Ecoply® Barrier</b> – structural plywood with factory applied proprietary coating to sheet surface and edges	Approx 4.0	7mm	1197mm	2440mm 2745mm
<b>Sill Tape</b> – one piece stretchable sill tape for window and door sills	-	2 Rolls per Box	150mm, 200mm	20m per roll
<b>Frame Sealing Tape</b> – for a permanent seal of all Ecoply® Barrier openings (Use in conjunction with Sill Tape)	-	2 Rolls per Box	150mm	30m per roll
		1 Roll per Box	200mm	
<b>Sealing Tape</b> – for a permanent seal of all Ecoply Barrier vertical joints	-	10 Rolls per Box	60mm	30m per roll

### COMPONENTS NOT SUPPLIED BY CHH PLY:

- PVC Horizontal Flashing: use Ecoply® Horizontal Jointer (Product Code RDZF7) supplied by E2 Flashing Solutions.
- Bracing Hold-Down Connectors: GIB HandiBrac® hold-down brackets manufactured by MiTek® complete with mechanical fastener with a minimum 15kN uplift capacity for concrete floors and 150mm x 12mm galvanised coach screw for timber floors.
- Fasteners.

### 5.1 TAPES

The Ecoply Barrier – Sill Tape, Frame Sealing Tape and Sealing Tape transform our sheathing plywood panels into a seamless protective barrier for your construction project. All tapes are proven to deliver an airtight and watertight seal. The Ecoply Barrier 'rigid air barrier system' tapes save you time and money on the job; and you can leave the site with confidence it will perform.



**Table 2: Tapes**

Technical Data	Sealing Tape	Sill Tape	Frame Sealing Tape
Description	For a permanent seal of Ecoply Barrier vertical joints	One piece stretchable sill tape, for use on all window / door frame sills	For a permanent seal of all Ecoply Barrier openings (Except window / door frame sill)
Carrier Paper	Special fleece made from PP	Butyl rubber with PE film	Special fleece made from PP
Width / Length	60mm x 30m	150mm x 20m 200mm x 20m	150mm x 30m (box of 2) 200mm x 30m (box of 1)
Release Paper	Siliconized Paper	Siliconized Foil (Split 90mm / 60mm) (Split 140mm / 60mm)	Siliconized Paper (Split 90mm / 60mm) (Split 140mm / 60mm)
Temperature Resistance	Long Term -40°C to +90°C	Long Term -40°C to +90°C	Long Term -40°C to +90°C
Processing Temperature	From -10°C	From -10°C	From -10°C
Colour	Grey	Black	Grey

Storage: All sealing tapes must be stored in clean dry conditions and not in an area with direct sunlight.

### 5.2 COATING - PANELS

The film formulation provides resistance to the effects of exposure to weathering including sun and moisture, typically experienced during the construction and normal service life of cavity substrate systems. The factory applied powder coat film is specifically formulated for use on Ecoply Barrier plywood panels.

- The film, formed by the powder coating process, helps resist moisture penetration.
- The edges of Ecoply Barrier sheets are coated and sealed.

- High film build (60–80 microns), delivers a smoother and more durable sheet surface allowing easier moisture drainage in cavity construction applications.
- Sealer coating contains low Volatile Organic Compounds (VOC).
- The beige coloured sealer coating can be exposed to the external environment for up to 180 days prior to cladding installation.



## 6.0 DESIGN CONSIDERATIONS

### Responsibility

Design responsibility lies with the building owner and the professionals that they engage. The Specifier for the project must ensure that the products and details in the specification are appropriate for the intended application and that additional detailing is provided for specific design or any areas that fall outside the scope and specifications of this literature.

### Preservative Treatment

Ecoply® Barrier is treated in accordance with AS/NZS 1604.3 with H3.2 CCA (Copper Chrome Arsenate) water borne treatment. H3.2 CCA treated plywood in accordance with AS/NZS 1604.3 is described as suitable for: "outside above ground applications" and periodic moderate wetting.

### Cut Sheets

Ecoply Barrier is envelope preservative treated. If a sheet end is cut, place the cut end to the top. Always have a sealed sheet end at the bottom to minimise potential moisture ingress into the panel. All other cuts and penetrations must be covered by Ecoply Barrier Sealing Tape and installed in accordance with the Ecoply Barrier literature. When installed as per the above requirements, cut edges and penetrations are not required to be retreated with a brush on preservative treatment however, if desired, CHH Ply recommends the use of Soudal® Metalex® Concentrated Timber Preservative Green (Soudal® Metalex® Green).

### Dimensional Sheet Change

Detailing and construction using Ecoply Barrier must allow for natural movement in line with normal cycles of moisture change occurring in the environment. The total expansion both along and across a 2440 x 1197mm panel can be in the order of 1.5mm to 3mm depending on the environment. Detailing and construction practice should take the potential for natural movement into consideration. Ecoply Barrier sheets may exhibit slight sheet bowing across the sheet resulting from the preservative treatment and surface coating processes. This is to be expected and will not affect the product's structural performance or weathertightness when installed as per the specifications.

### Formaldehyde

Formaldehyde occurs naturally in the environment and is emitted by processes such as combustion, decay and naturally by all timber species. Ecoply Barrier meets the lowest formaldehyde emission classification (E0 – less than 0.5mg/ litre).

### Wind Loadings

Ecoply Barrier meets the NZBC requirements for rigid underlays as outlined in section 9.1.4, the performance requirements of Table 23 of E2/ AS1, and has been tested for wind speed exceeding Extra High wind zone as defined in NZS 3604. Testing has been completed to assist in providing solutions for buildings outside the scope of NZS 3604. Contact CHH Ply for further information.

### Sustainability

Ecoply Barrier is manufactured from radiata pine, a plantation

grown medium density softwood. It is grown on tree farms which are tended and harvested to provide wood for plywood manufacture. The crop is managed on a sustainable basis to yield millable trees. Ecoply Barrier is available Forestry Stewardship Council (FSC-C012019) certified upon request.

### Health & Safety

Ecoply Barrier should be handled in accordance with the Safety Data Sheet (SDS) for H3.2 CCA treated Ecoply Barrier. Always wear safety glasses or non-fogging goggles when working with Ecoply Barrier. If wood dust exposure is not controlled when machining (sawing, drilling etc.) a P1 or P2 replaceable filter or disposable face piece respirator should be worn. Wear comfortable work gloves to avoid skin irritation and the risk of splinters. Wash hands with mild soap and water after handling panels.

### Storage & Handling

Ecoply Barrier panels and tapes must be stored and handled with care to maintain good condition prior to installation:

- The storage area must be protected from sun, rain and wind that would otherwise bring about rapid changes in temperature and humidity.
- Support for the sheets must be provided at both ends and middle to avoid distortion. Ensure bearers in packs above are aligned over bearers below to avoid inducing curves in sheets.
- The stack must be kept dry and clear of ground contact, and placed so that it will not be exposed to mechanical damage.
- The sheets must be stacked flat, NOT on edge.

### Maintenance

Ecoply Barrier will not normally require maintenance. However, if damage occurs to the cladding or lining protecting the Ecoply Barrier or to the Ecoply Barrier itself, repairs or replacement should be carried out to ensure the integrity of the rigid air barrier. Small perforations in the panels can be covered by the Frame Sealing Tape or Sealing Tape (200mm, 150mm or 60mm Width, Grey Colour).

### Nogging/Dwangs

Ecoply Barrier can be installed to frames without nogs installed to the studs where nogs are **not** required by the cladding system. This practice allows for the installation of insulation without the need to terminate insulation at nog lines, creating a more efficient insulation path.

NZS 3604:2011 Section 8.5.4 notes that lateral support to the timber framing can be completed in several ways by either nogs or interior and exterior lining that comply with NZS 3604 Section 12 or E2/AS1.

Ecoply Barrier, as part of the external cladding system, will comply with the requirements of E2/AS1 Rigid Air Barrier and NZS 3604:2011 Section 8.5.4. because it does not require the nogs for fixing or support of the sheet and is fixed at 150 mm centres minimum around the sheet.

**Where cladding systems require nogs for support, nogs should be installed as required.**

## 7.0 INSTALLATION

### 7.1 INSTALLATION

#### Step 1 Framing:

Install the Ecoply® Barrier sheathing panels positioned with the water resistant powder coat film facing outwards. The panels must be installed with the long side of each panel orientated vertically to the framing members.

All Ecoply Barrier sheet edges must be fully supported by being fastened to framing:

- Studs must not exceed 600mm centres.
- The minimum framing width for fixing Ecoply Barrier is 45mm at sheet joints.
- Framing must be kept as dry as possible at all times.
- Do NOT glue to frame.
- Nogging/Dwangs - see design considerations. **Where cladding systems require nogs for support, nogs should be installed as required.**

All timber framing sizes and set outs must comply with NZS 3604 (or be specifically designed to NZS 3603:1993 – Timber Structures Standard), with stud and nog centres and timber widths required by this specification. Use kiln dried framing such as Laserframe® in accordance with timber framing manufacturers specification and treated in accordance with NZBC Clause B2 Durability, Acceptable Solution (E2/AS1) or Standards New Zealand 3602:2003 Timber and Wood based products for use in building (NZS 3602).

#### Step 2 Fastener Durability:

Fasten the panels to the framing members. It is of particular importance in coastal areas, areas subject to salt spray and other corrosive environments that the correct fastener is verified prior to installation.

Fasteners shall be a minimum of hot dip galvanised for all B and C zones excluding sea spray zone D where stainless steel fasteners are required. Where stainless steel is required, annular grooved nails must be used.

#### Step 3 Fasteners:

Fastener heads should be flush with the panel surface. It is not required to tape over over-driven fasteners unless the fastener head completely penetrates the thickness of the face veneer.

Cladding fasteners must be increased in length by a minimum of 7mm to achieve the required fastener pull out loadings. (Ecoply Barrier is 7mm thicker than building wrap).

**Table 3: Fastener Type**

Fixing Type	Minimum Nail Length
<b>Hand Driven</b>	50 x 2.8mm nails (flat head or round head), hot dipped galvanised or better
<b>Power Driven</b> – Paslode Pneumatic Cladding Coil Nailer	Paslode Impulse 50 x 2.8mm hot dipped galvanised or better, ring round head drive B20557

NOTE: Please refer to Step 2 Fastener Durability.

#### Step 4 Sheet Layout:

When using Ecoply Barrier, flexible wall underlay is not required. Ecoply Barrier has been BRANZ appraised and tested to demonstrate product performance against the requirements of Table 23 of Clause E2 / AS1 of NZBC. The sheets are jointed keeping an expansion gap of 2-3mm maximum between the plywood panels. Each plywood panel is 1197mm in width to allow for standard 400mm or 600mm stud spacing.

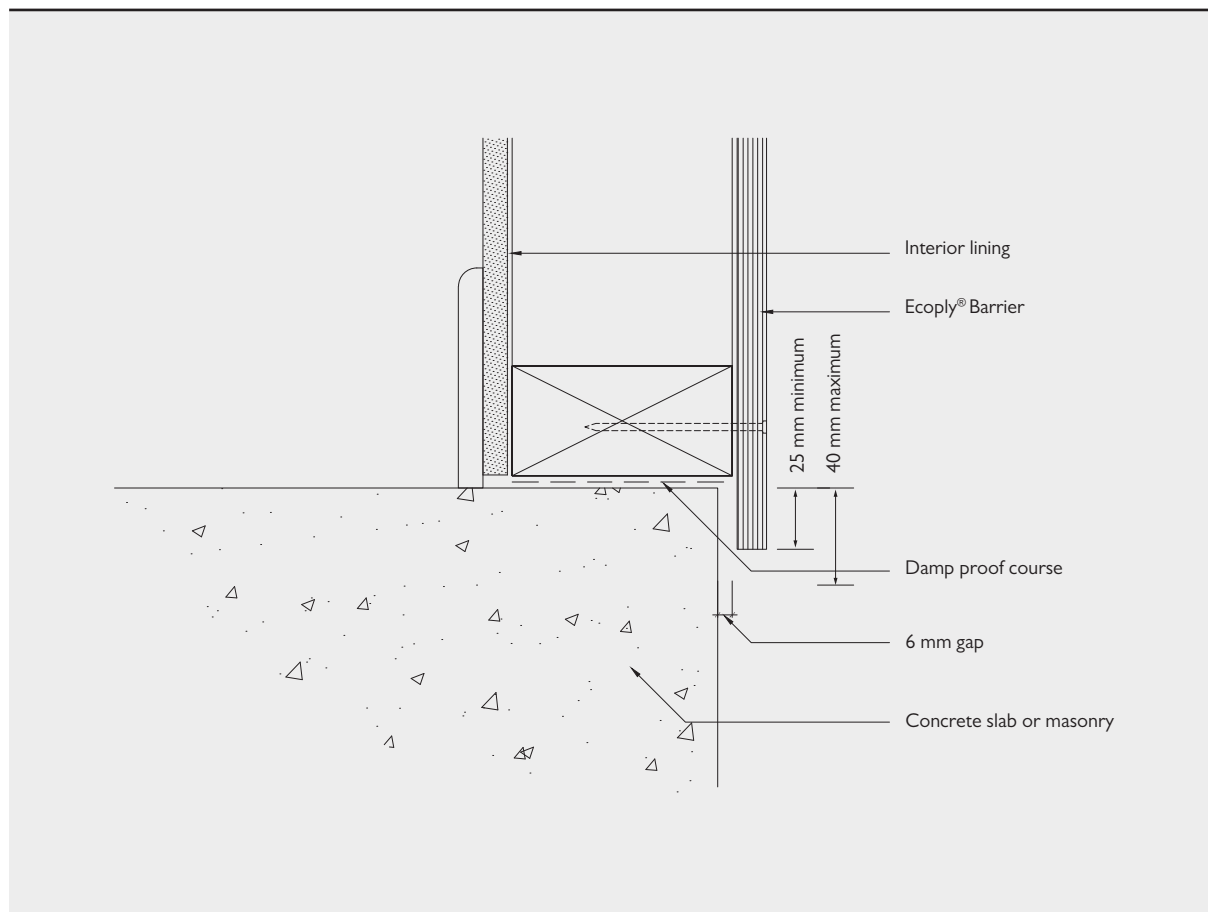
- All sheet edges must be supported by the framing.
- Use fastener pattern unless otherwise specified (refer to the bracing specifications in the Ecoply Specification and Installation Guide).
- 150mm centres at sheet edges
- 300mm centres within sheet body up to and including 'Very High' wind zone or;
- 150mm centres within sheet body in 'Extra High' wind zone
- Sheets must overhang the bottom plate by a minimum of 25mm over timber and concrete foundations (Refer to BAR005: Overhang Clearances For Concrete Slab or Masonry) with a maximum overhang of 40mm.
- For brick cladding rebates, in addition to the 25 – 40mm sheet overhang, 40mm clearance must exist between the face of the Ecoply Barrier sheet and the brick cladding in accordance with E2/AS1 Section 9.2.6 Cavities (Refer to BAR005A: Brick Rebate Overhang Clearance).
- For cantilevered floor joists, sheets must overhang a minimum of 25mm, with claddings to extend a minimum of 50mm below the lowest part of the timber framing in accordance with E2/AS1 Table 18 (Refer BAR005B: Timber Floor Overhang Clearance For Cantilevered Joists).
- For timber sub-floor systems, sheets must overhang the bearer a minimum of 25mm, with claddings to extend a minimum of 50mm below the lowest part of the timber framing in accordance with E2/AS1 Table 18 (Refer BAR005C: Overhang Clearance for Timber Sub-Floors).

#### Ground Clearances:

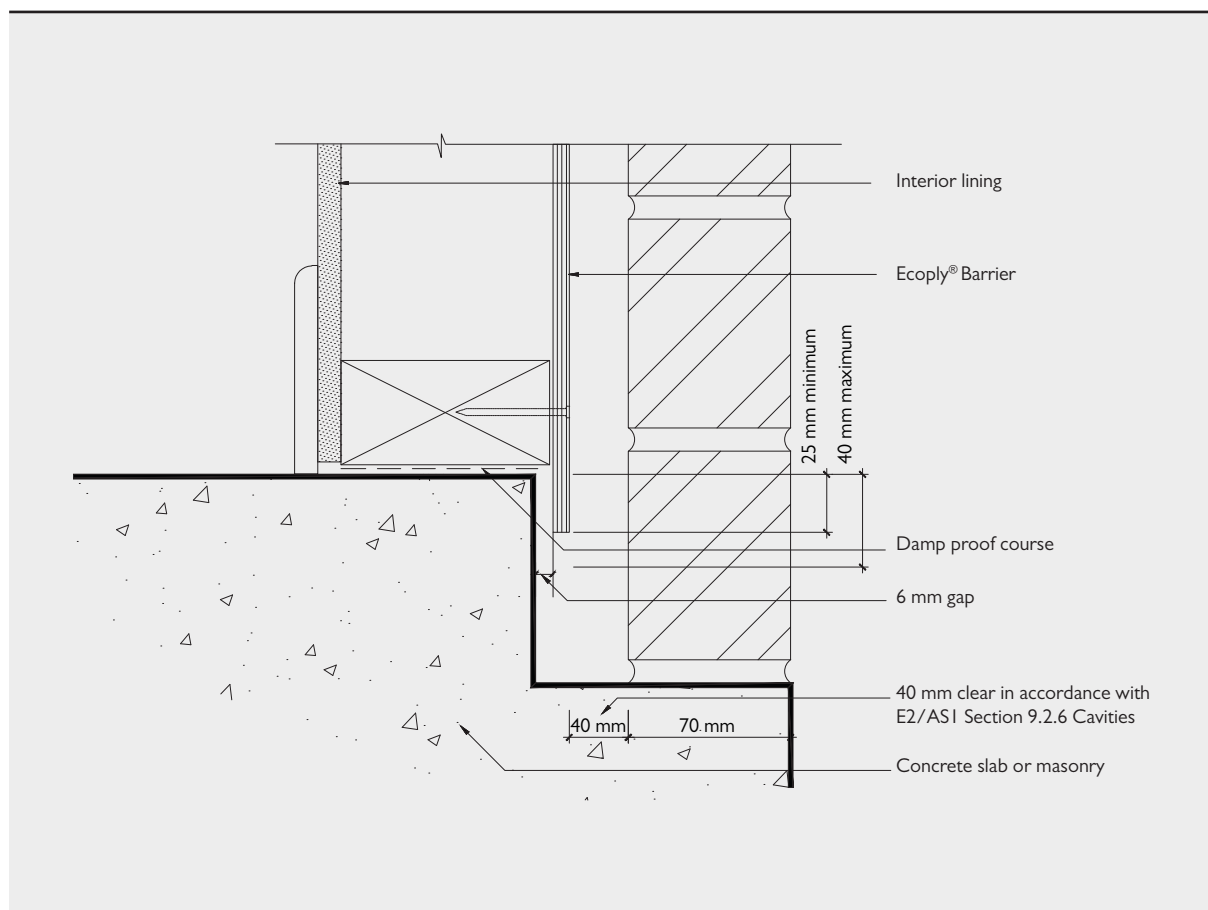
Minimum ground clearances must be maintained for the cladding being installed in accordance with Clause E2/AS1 – Figure 65 and Table 18, and with NZS 3604 for timber floors. The adjacent ground must slope away from the building in accordance with NZBC requirements. Ecoply Barrier must not be installed where product will remain in contact with non-draining water, damp, or soil.



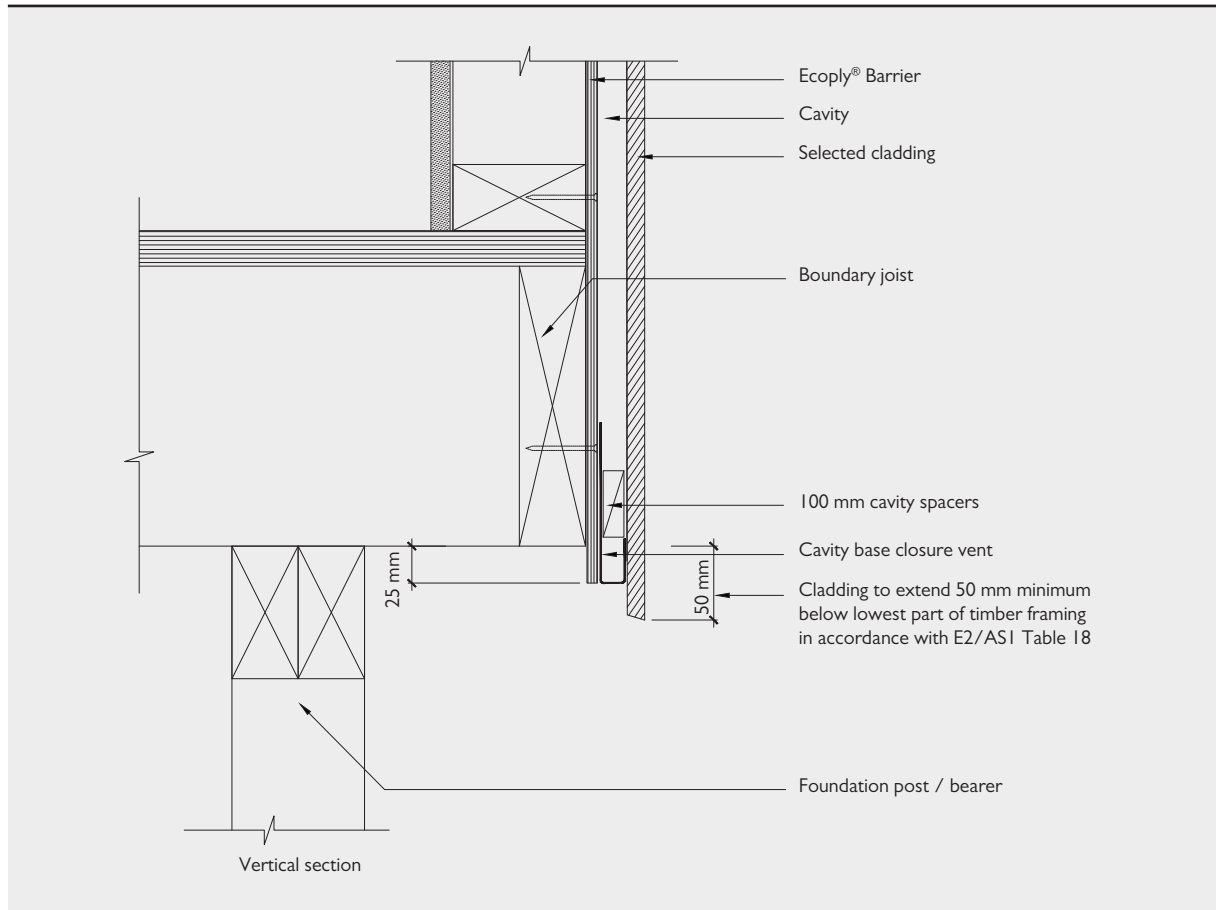
## BAR005: Overhang Clearances For Concrete Slab or Masonry



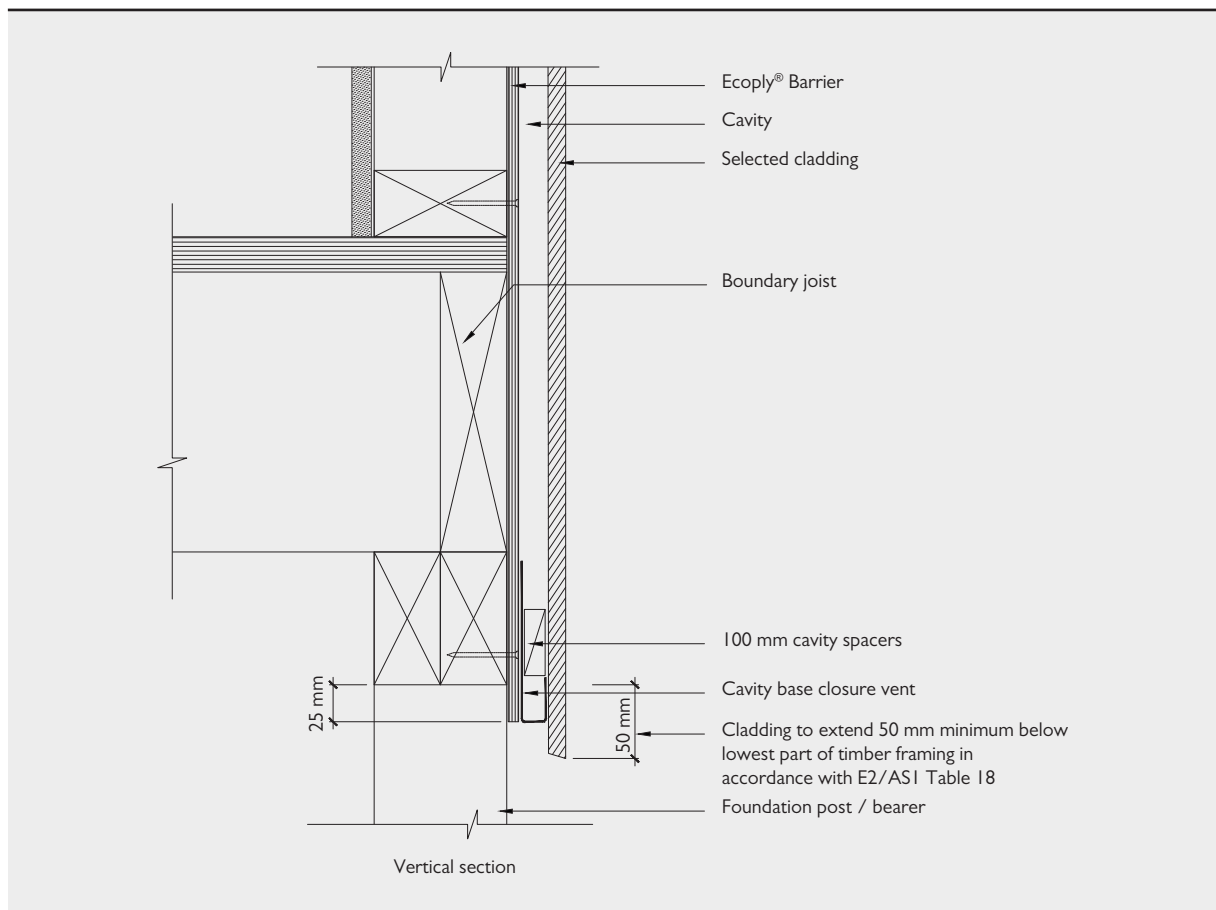
## BAR005A: Brick Rebate Overhang Clearance



### BAR005B: Timber Floor Overhang Clearance for Cantilevered Joists



### BAR005C: Timber Floor Overhang Clearance for Sub Floors





## 7.2 INSTALLATION – SHEET JOINS

Apply Ecoply® Barrier Sealing Tape after all sheathing panels are fully fastened to wall framing members. Only designated Ecoply Barrier Sealing Tape should be used. Ensure that each panel is free of sawdust and dirt prior to taping. Ecoply Barrier Sealing Tape requires pressure for a secure seal. Make sure the tape is centred over the seam within +/- 20mm to provide adequate coverage and that wrinkles in tape are minimal.

### Vertical Sheet Joints:

- Seal vertical joints by running Ecoply Barrier Sealing Tape over the joints (60mm x 30m).
- Ecoply Barrier Sealing Tape must not be exposed to weathering for more than 180 days prior to installation of the exterior cladding system.

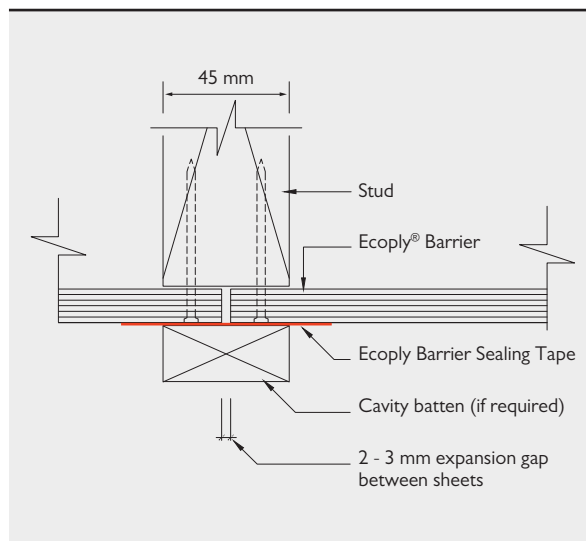
### Horizontal Sheet Joints (Three Options):

- Ecoply Barrier PVC horizontal 'Z' Flashing (Product Code RDZF7) for horizontal sheet joints. Refer BAR007: Horizontal Sheet Joints (PVC Z Flashing).
- 'Z' taped joint using Ecoply Barrier 150mm OR 200mm Frame Sealing Tape. Refer BAR007A: Horizontal Sheet Joints (Tape Z Flashing).
- 'Face' seal joint using Ecoply Barrier 150mm OR 200mm Frame Sealing Tape. Refer to BAR007B: Face Sealed Horizontal Sheets Joints at Mid-floor or BAR007C: Face Sealed Horizontal Sheet Joints at Nog.

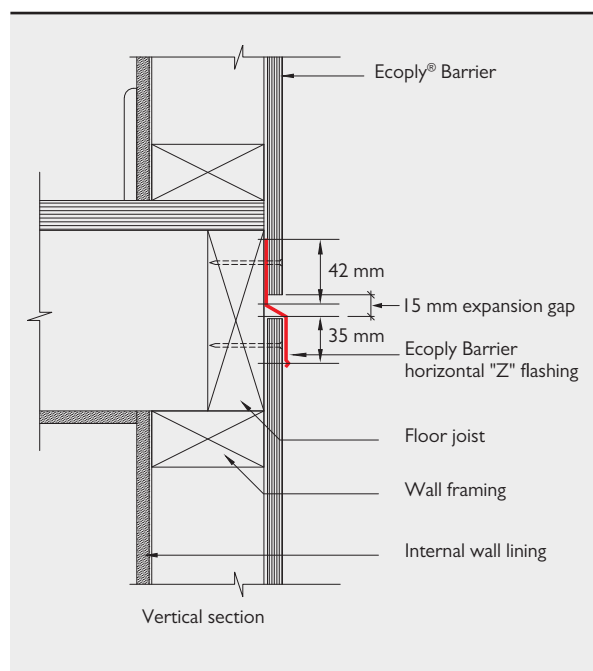
### Tape Splices and Joints:

- Whenever tape splices occur at a junction, create an overlapping splice of at least 50mm.
- Make sure to apply adequate pressure for a secure bond between the plywood panel and the tape.
- Take special care to remove any wrinkles or voids at splice areas.

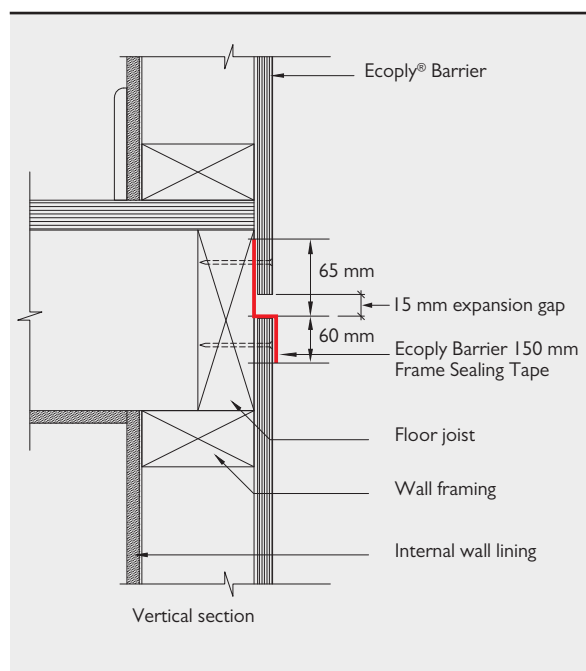
### BAR006: Vertical Sheet Joints



### BAR007: Horizontal Sheet Joints (PVC Z Flashing)

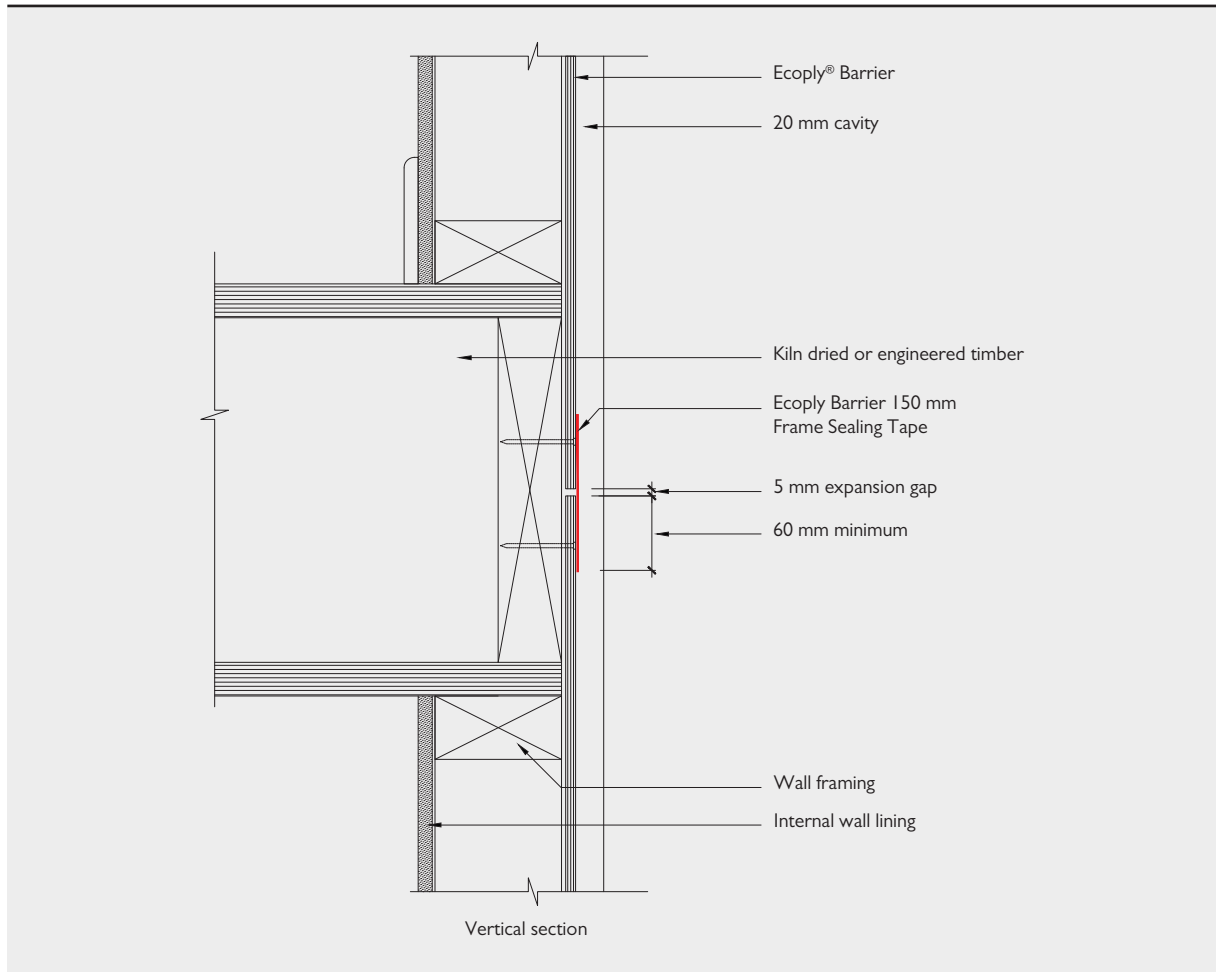


### BAR007A: Horizontal Sheet Joints (Tape Z Flashing)

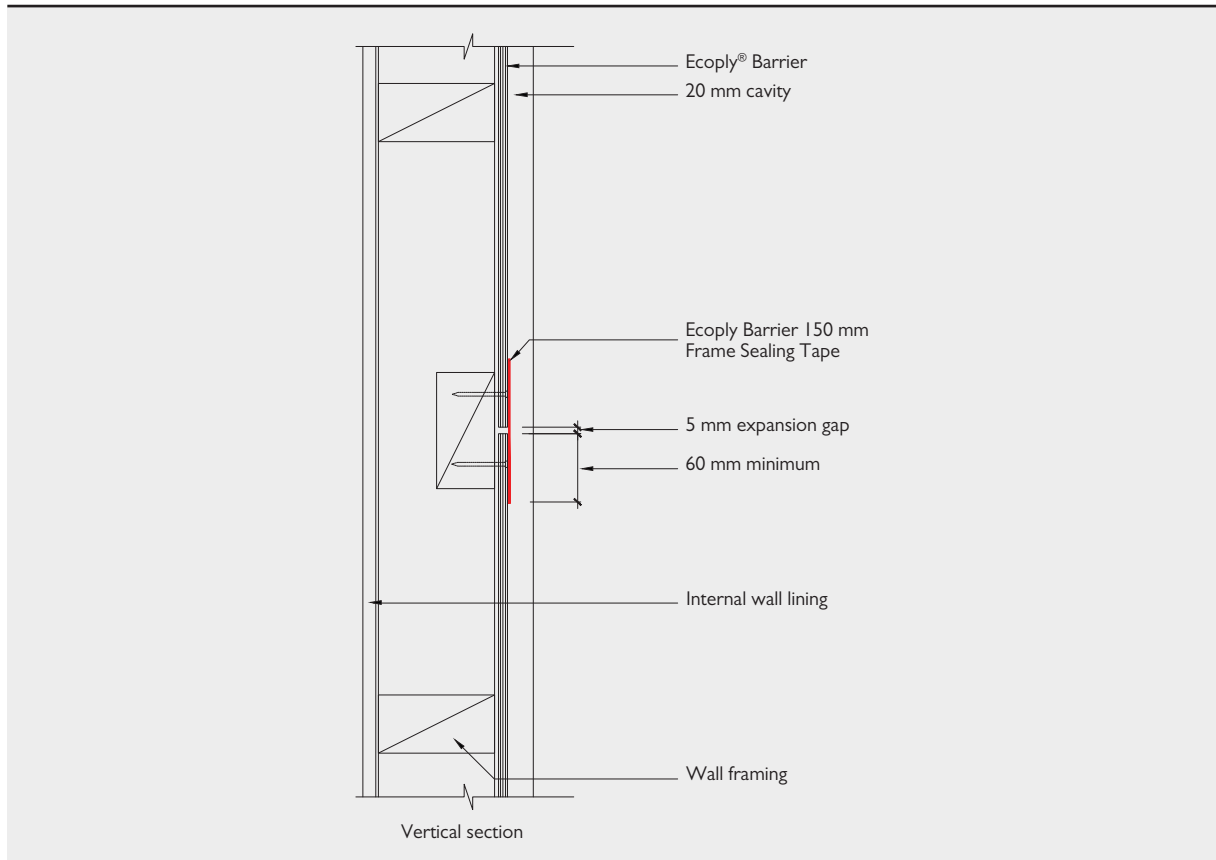


The Ecoply® Barrier PVC Horizontal 'Z' Flashing is manufactured by E2 Flashing Solutions. Contact E2 Flashing Solutions on (03) 358 5775 or visit [www.e2flashingolutions.co.nz](http://www.e2flashingolutions.co.nz) for further information.

### BAR007B: Face Sealed Horizontal Sheet Joints at Mid-Floor



### BAR007C: Face Sealed Horizontal Sheet Joints at Nog

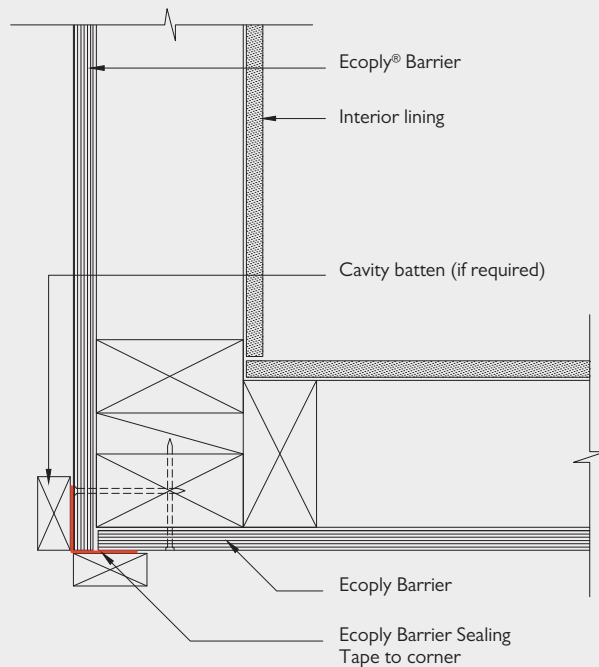




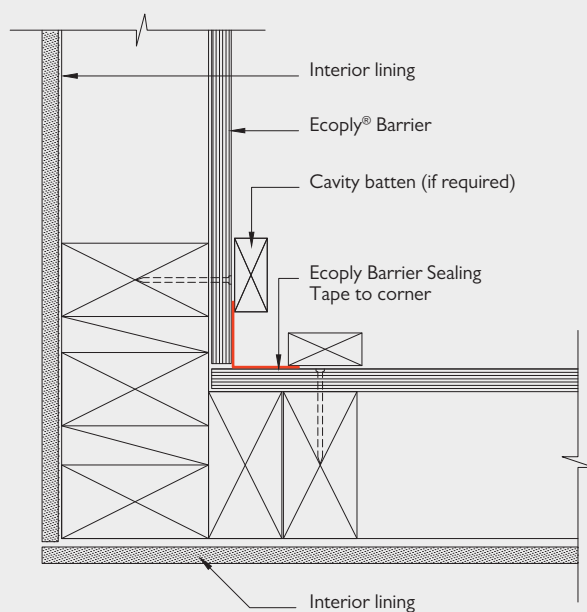
## Internal and External Corners:

- Corners must be sealed with Ecoply® Barrier Sealing Tape (60mm Grey Colour). (Refer to BAR008 and BAR009: External and Internal Corner).

### BAR008: External Corner



### BAR009: Internal Corner

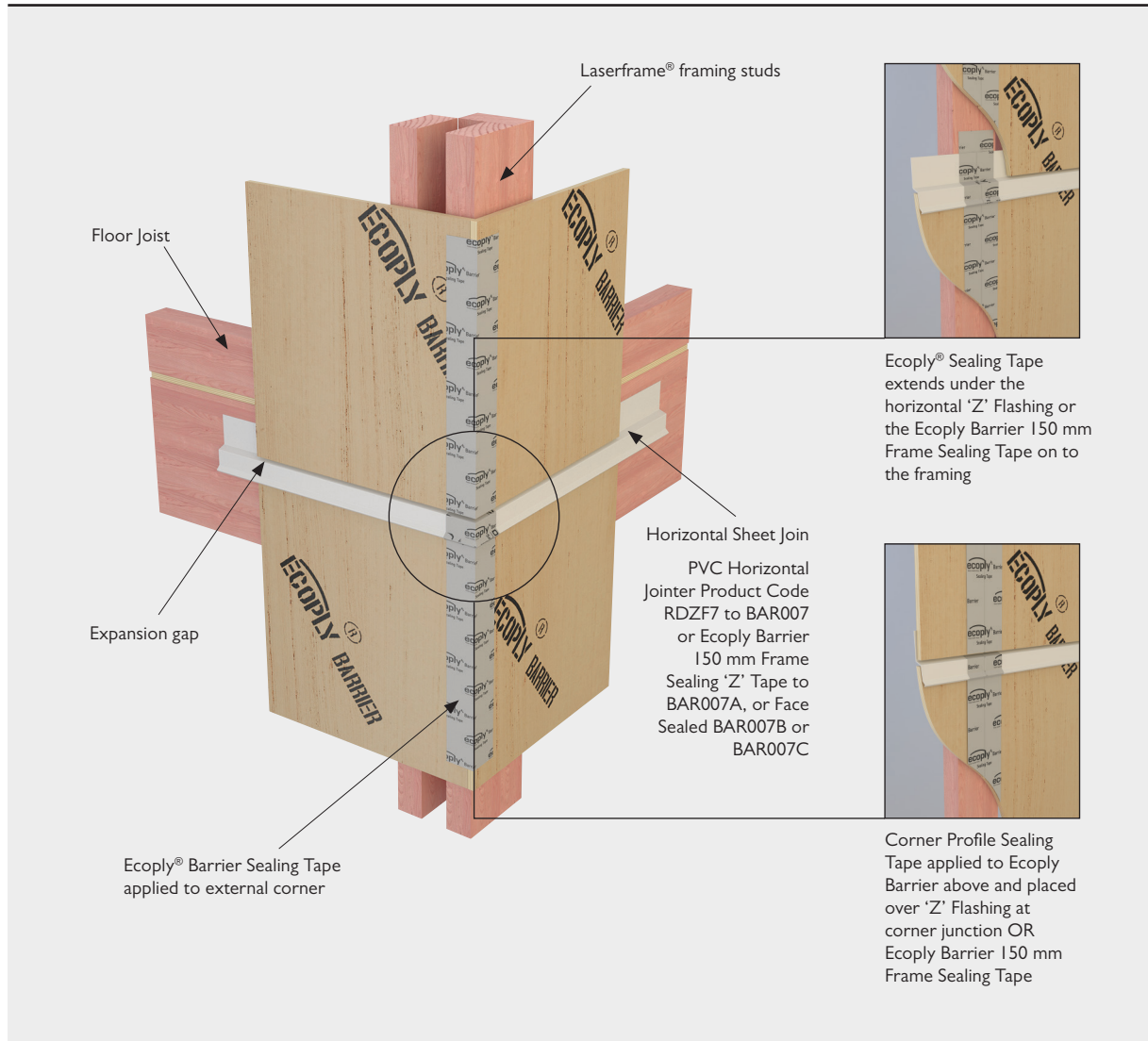


### Corner Junctions to Horizontal Joints

- Corners must be sealed with Ecoply® Barrier Sealing Tape (60mm Grey Colour).

- PVC Horizontal Z Flashings must be butted together, 60mm Ecoply Barrier Sealing Tape must overlap the PVC butt joint entirely over the face and up stand of the PVC Flashing to form a weathertight joint where horizontal Flashings meet.
- Horizontal joints may also be completed using Ecoply Barrier Frame Sealing Tapes.

### BAR010: External Corner to Horizontal Joint



## 7.3 INSTALLATION - SILL TAPE

Apply Ecoply® Barrier Sill Tape to the horizontal trimmer section of the window or door opening. The exposed timber framing on the sill of the window opening must be totally covered with the Ecoply Barrier Sill Tape (150mm or 200mm Black Colour) – one continuous piece. The tape must be sealed over the face of the Ecoply Barrier.

Take special care to avoid any wrinkles or voids at corner junctions, Ecoply Barrier Sill Tape requires pressure for a secure seal.

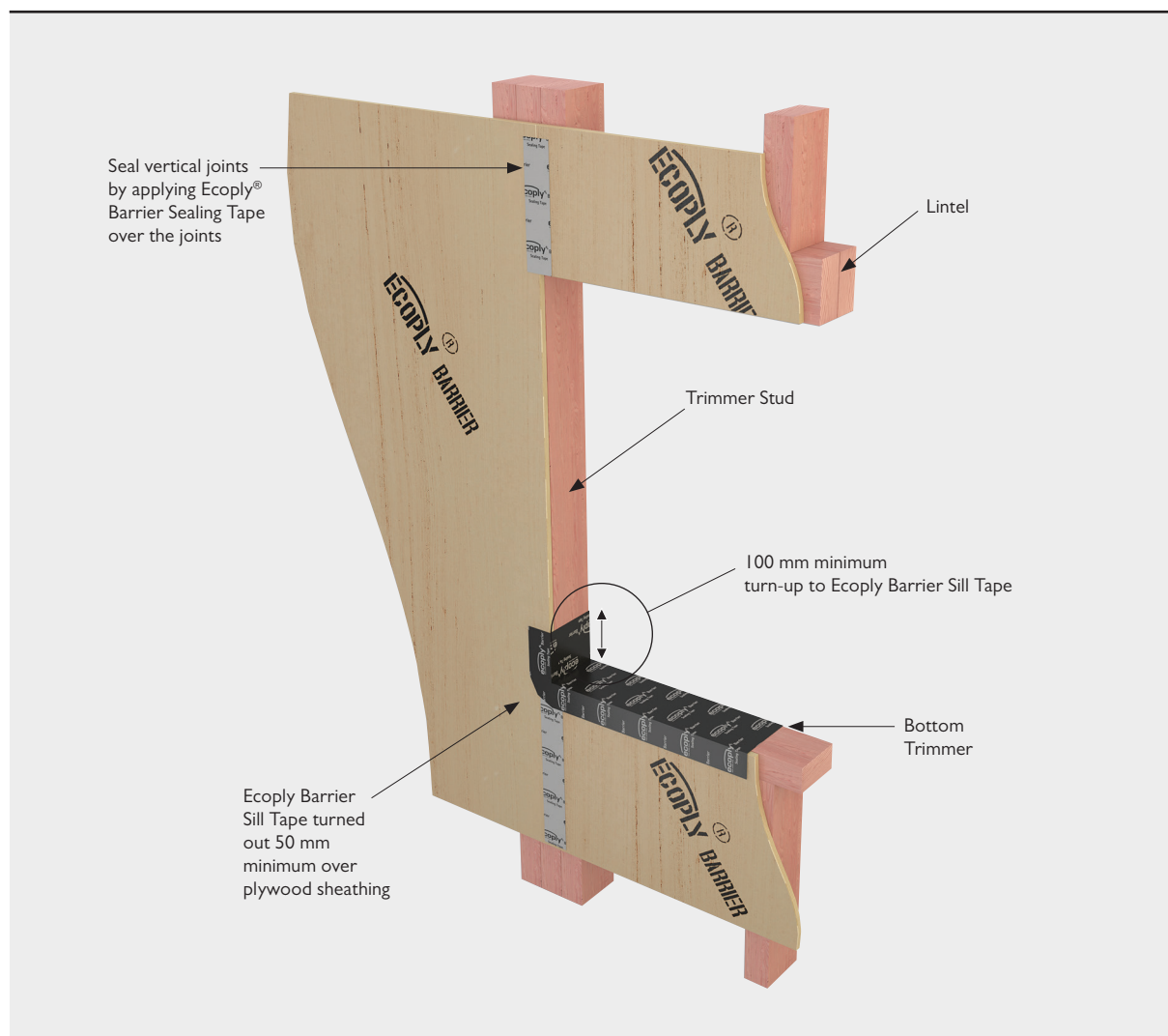
### Horizontal Sill Flashing Detail:

- Cut the Ecoply Barrier Sill Tape 200mm longer than the horizontal window/door bottom trimmer.
- Ensure that the framing is free of sawdust and dirt prior to taping.
- Apply the Ecoply Barrier Sill Tape to cover the bottom of the opening, overhanging onto the Ecoply Barrier by at least 50mm and extending 100mm up trimmer stud.
- Carefully bend the Ecoply Barrier Sill Tape to mould into the corners providing a tight seal.



NOTE: Door openings are to be treated similarly to window openings. The bottom trimmer may be either a timber or concrete floor.

### BAR012: Window Penetration Sill Tape Installation





## 7.4 INSTALLATION - FRAME SEALING TAPE

Apply Ecoply® Barrier Frame Sealing Tape to the vertical trimmer stud and lintel of the window or door opening. The exposed timber framing must be covered with the Ecoply Barrier Frame Sealing Tape (150mm / 200mm Grey Colour). The tape is sealed over the face of the Ecoply Barrier panel.

Take special care to remove any wrinkles or voids at corner junctions, Ecoply Barrier Frame Sealing Tape requires pressure for a secure seal.



### Vertical Jamb Detail:

- Cut the Ecoply Barrier Frame Sealing Tape 100mm longer than the vertical opening size.
- Ensure that the trimmer stud is free of sawdust and dirt prior to taping.
- Apply the Frame Sealing Tape to cover the entire trimmers' opening. The tape should extend a minimum of 100mm around the corner at the head of the window framing, and over-lap the Sill Tape on the trimmer stud by a minimum of 50mm.
- Carefully slit the tape from the corner to get a smooth adhesion to the plywood sheathing panel. Bend the Ecoply Barrier Frame Sealing Tape to mould into the corners providing a tight seal.
- Cut and apply a small 100mm strip to reinforce the corner using Ecoply Barrier 150mm Frame Sealing Tape.

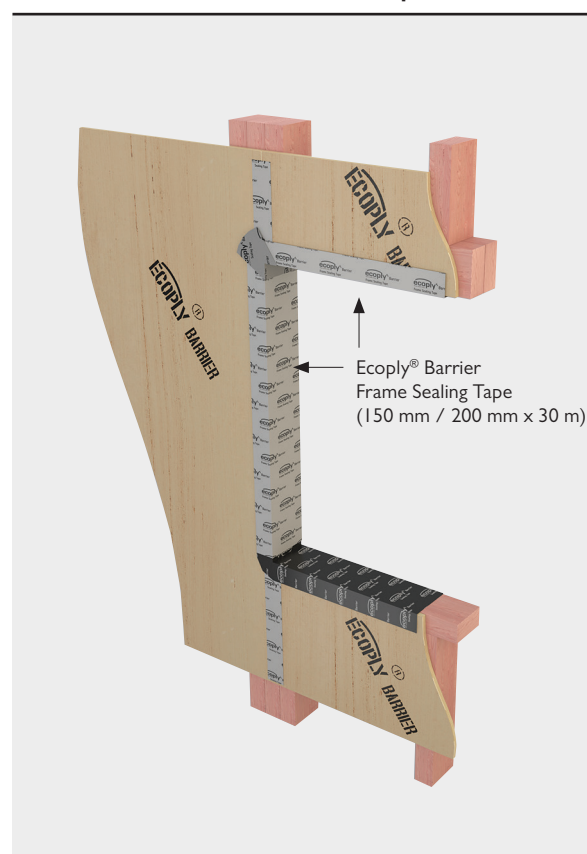
### Horizontal Head Detail:

- Once both trimmer studs are installed, cut the Frame Sealing Tape for the horizontal head trimmer and Flashing to suit. Make sure to over-lap the existing tape from the trimmer by at least 50mm (Do not extend tape past the corner).
- Specific installation requirements pertaining to window and door systems should be sought from the joinery manufacturer.

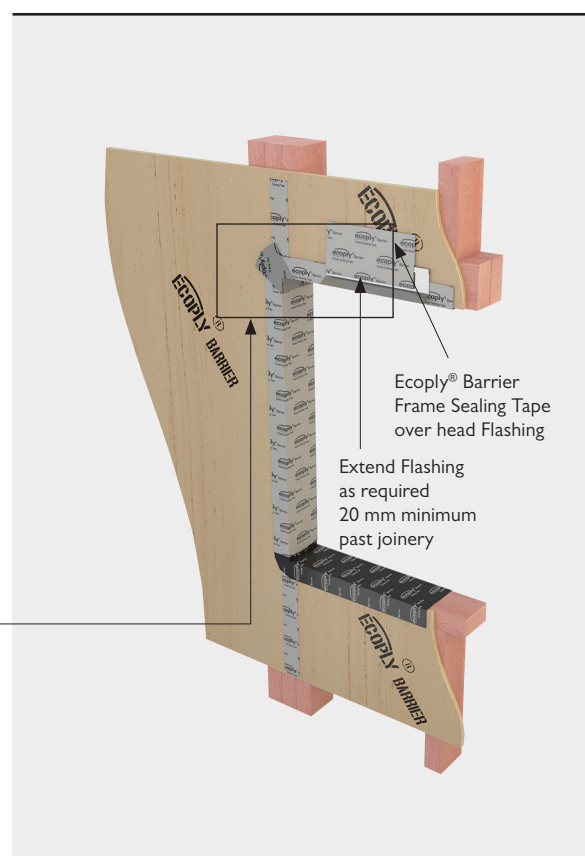
NOTE: Door frames are to be treated similarly to window openings.



### BAR013: Window Penetration Sill Tape Installation



### BAR014: Window Penetration Frame Sealing Tape Installation with Head Flashing



## 7.5 SERVICE PENETRATIONS

- Service penetrations must be sealed using a flexible Flashing tape. Ecoply® Barrier Sill Tape (150mm or 200mm Black Colour) is recommended for this purpose. (Refer to BAR011: Penetration and Services).
- A minimum cover of 100mm over the sheet surrounding the penetration is required.
- Use Ecoply Barrier Frame Sealing Tape to bandage around the pipe (25mm minimum width).

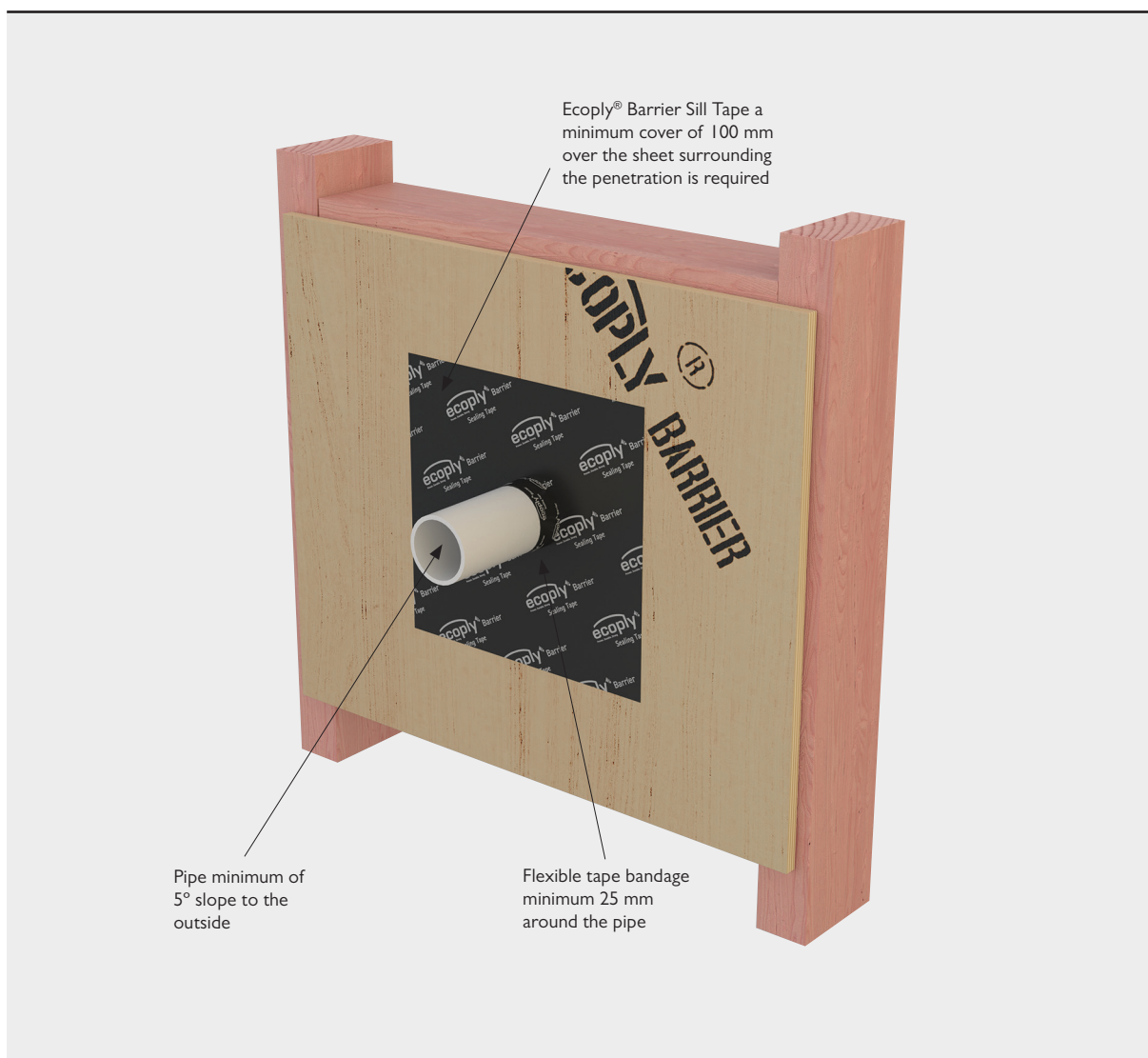


### Service Penetrations in Bracing Elements

Small openings (e.g. power outlets) of 90 x 90mm or less maybe placed no closer than 90mm to the edge of the braced element, or waste pipe outlets of maximum 150mm diameter placed at no closer than 150mm to the edge of the braced element.

Maximum one penetration per bracing panel.

### BAR011: Penetration & Services



**Penetration Seals range coming soon - visit [www.ecoplybarrier.co.nz](http://www.ecoplybarrier.co.nz) for more details.**

## 7.6 STRUCTURAL BRACING

Ecoply Barrier is designed to comply with the New Zealand Building Code (NZBC).

### Structure

NZS 3604 Timber Framed Buildings is listed as an Acceptable Solution under Clause 3.0 Timber in Acceptable Solution B1/AS1 Structure. CHH Woodproducts have developed a range of wall bracing elements tested using P2I testing methods referenced in NZS 3604.

Demand may be calculated by following section 5, Bracing Design of NZS 3604 or using the GIB EzyBrace® software, downloadable from [www.gib.co.nz](http://www.gib.co.nz).

EPB bracing systems properties can be easily loaded into the EzyBrace software by way of a software patch downloadable from [www.ecoply.co.nz](http://www.ecoply.co.nz) together with loading instructions.

### Specific Design

Ecoply® Barrier structural plywood panels are manufactured to AS/NZS 2269, and is suitable for design and use in earthquake and wind bracing systems constructed in accordance with NZS 3603 and AS/NZS 1170.

Structural plywood to AS/NZS 2269 is the only sheet brace material with properties defined in a published New Zealand timber design code, NZS 3603 Timber Structures, and so can be designed in compliance with Verification Method B1/VM1 under Clause 6.0 Timber for use in buildings over three storeys in height.

### Timber Floors

When carrying out a bracing design for buildings with timber floor structures, the maximum bracing rating that can be accounted for when summing up the bracing units is 120BUs/m. This does not exclude the installation of bracing elements that are rated higher than 120BUs/m, however the extra bracing capacity can not be accounted for in the bracing design.

Specific design of floor and sub-floor framing is required for elements rated higher than 120BUs/m.

### Durability

Ecoply Barrier plywood panels are manufactured to meet the requirements of NZS 3602 Timber and Wood based products for use in Buildings. If the product is used, handled and installed in accordance with CHH Woodproducts product literature it will meet the durability requirements of the NZBC.

### Adjustments for Wall Height

Adjustment of bracing capacity of walls of different heights and walls with sloping top plates shall be obtained by the following method:

(a) For wall bracing elements of heights other than 2.4m, the bracing rating determined by test or from table below should be multiplied by  $2.4 \div \text{element height in metres}$ , except that elements less than 2.4m high shall be rated as if they are 2.4m high.

(b) Walls of varying heights, should have their bracing capacity adjusted in accordance with section 5 of NZS 3604 using the average height.

(c) Wall heights < 1.5m are to be subject to Specific Engineer Design (SED).

### Joining Panels for Walls Higher than Maximum Sheet Length

Ecoply Barrier bracing panels must be fixed from top plate to bottom plate. For wall heights over 2.44m, Ecoply Barrier is available in 2.745m sheet lengths. Alternatively, a part sheet can be installed above a full sheet, in accordance with section 7.2 Installation - Sheet Joins (Three Options for Horizontal Sheet Joins) on a single row of common nogs with each sheet/part sheet independently nailed off as per the nail spacing in the Ecoply Barrier bracing specifications (e.g. 2.4m x 1.2m sheet with a 0.3 m x 1.2 m part sheet above it to give a 2.7m x 1.2m bracing element).

**Table 4: Summary P2I Ratings for 2.4m High Ecoply® Barrier Wall Elements**

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BUs/m Wind	BUs/m Earthquake
EPB1	0.4m	Ecoply® Barrier one side	Yes GIB HandiBrac®	80	95
	0.6m			95	105
	1.2m			120	135
EP2	0.6m	Ecoply Barrier or Ecoply each side	Yes GIB HandiBrac®	105	115
EPBS	0.4m	Ecoply Barrier one side	No additional fastening <sup>1</sup>	60	60
	0.6m			60	65
	1.2m			65	70
	2.4m			80	90
EPBG	0.4m	Ecoply Barrier one side and 10mm GIB® Standard plasterboard other side	Yes GIB HandiBrac®	100	115
	1.2m			150	150

<sup>1</sup> As per NZS 3604: 2011. No specific additional fastening required.



## 7.7 ECOPLY® BARRIER BRACING SPECIFICATION – EPBI

**Table 5: Sided Structural Plywood Brace**

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BU's/m Wind	BU's/m Earthquake
EPBI	0.4m	Ecoply® Barrier one side	Yes GIB HandiBrac®	80	95
	0.6m			95	105
	1.2m			120	135

### Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber of minimum SG8, such as Laserframe®, is recommended.

### Bottom Plate Fixing

Use GIB HandiBrac® hold-down connections at each end of the bracing element. Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.

### Lining

One layer of 7mm Ecoply® Barrier vertically fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

### Fastening Ecoply® Barrier Panels

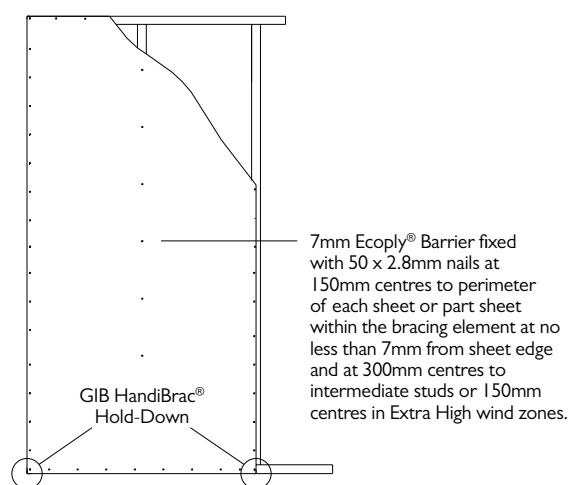
#### Fasteners

Fasten with 50 x 2.8mm galvanised or stainless steel flat head nails direct fix. Place fasteners no less than 7mm from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

In certain circumstances stainless steel fasteners may be required. Refer to section 7.1 in the Ecoply Barrier Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

### Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate studs or 150mm centres in Extra High wind zones. Where more than one sheet forms the brace element each sheet must be nailed off independently.



Ecoply® Bracing Systems are designed to meet the requirements of the New Zealand Building Code and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply Barrier manufactured by CHH Ply and SG8 timber framing and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

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## 7.8 ECOPLY® BARRIER BRACING SPECIFICATION – EP2

**Table 6: Sided Structural Plywood Brace**

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BU/s/m Wind	BU/s/m Earthquake
EP2_0.6	0.6m	Ecoply® Barrier or Ecoply each side	Yes GIB HandiBrac®	105	115

### Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber, such as Laserframe® or SG8 stress grade minimum, is recommended.

### Bottom Plate Fixing

Use GIB HandiBrac® hold-down connections at each end of the bracing element. Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.

### Lining Each Side

One layer of 7mm, 9mm or 12mm Ecoply® plywood or Ecoply Barrier vertically fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

### Fastening the Ecoply® Barrier

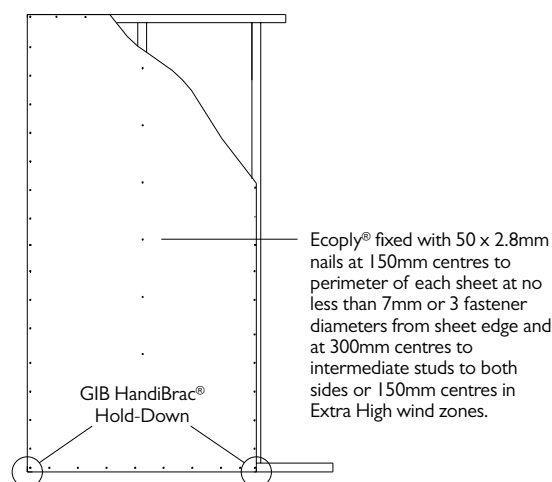
#### Fasteners

Fasten with 50 x 2.8mm galvanised or stainless steel flat head nails direct fix. Place fasteners no less than 7mm from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

In certain circumstances stainless steel fasteners may be required. Refer to section 7.1 of the Ecoply Barrier Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

### Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate studs or 150mm centres in Extra High wind zones. Where more than one sheet forms the brace element each sheet must be nailed off independently.



Ecoply® Bracing Systems are designed to meet the requirements of the New Zealand Building Code and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply manufactured by CHH Ply and SG8 timber framing, and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

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## 7.9 ECOPLY® BARRIER BRACING SPECIFICATION – EPBS

**Table 7: Single Sided Structural Plywood Brace No Additional Hold-Down**

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BU's/m Wind	BU's/m Earthquake
EPBS	0.4m	Ecoply® Barrier one side	No additional fastening <sup>1</sup>	60	60
	0.6m			60	65
	1.2m			65	70
	2.4m			80	90

<sup>1</sup> As per NZS 3604: 2011. No specific additional fastening required.

### Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber of minimum SG8, such as Laserframe®, is recommended.

### Bottom Plate Fixing

Bottom plates are fixed in accordance with the requirements of NZS 3604. No specific additional fastening required.

### Lining

One layer of 7mm Ecoply® Barrier vertically fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

### Fastening the Ecoply® Barrier

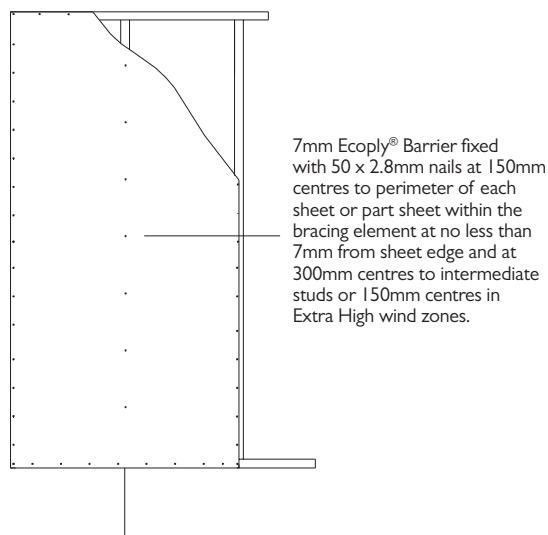
#### Fasteners

Fasten with 50 x 2.8mm galvanised or stainless steel flat head nails direct fix. Place fasteners no less than 7mm from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

In certain circumstances stainless steel fasteners may be required. Refer to section 7.1 in the Ecoply Barrier Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

### Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate studs or 150mm centres in Extra High wind zones. Where more than one sheet forms the brace element each sheet must be nailed off independently.



Ecoply® Bracing Systems are designed to meet the requirements of the New Zealand Building Code and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply Barrier manufactured by CHH Ply and SG8 timber framing and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

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## 7.10 ECOPLY® BARRIER BRACING SPECIFICATION – EPBG

**Table 8: Ecoply® Barrier Structural Brace To One Side with 10mm GIB® To The Other**

Specification No.	Minimum Wall Length	Lining Requirements	Hold-Down	BU's/m Wind	BU's/m Earthquake
EPBG	0.4m	Ecoply® Barrier one side and 10mm GIB® Standard plasterboard other side	Yes	100	115
	1.2m		GIB HandiBrac®	150	150

### Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber, such as Laserframe®, is recommended.

### Bottom Plate Fixing

Use GIB HandiBrac® hold-down connections at each end of the bracing element. Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.

### Lining

Side 1: One layer of 7mm Ecoply® Barrier vertically fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

Side 2: One layer of 10 or 13mm GIB® Standard plasterboard vertically or horizontally fixed. Sheet joints are touch fitted and fastener heads and joints stopped in accordance with the GIB® Site Guide.

### Fastening the Ecoply® Barrier

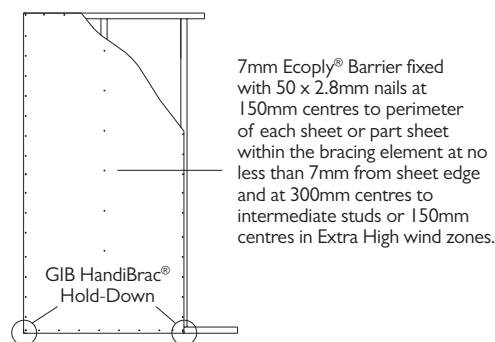
#### Fasteners

Fasten with 50 x 2.8mm galvanised or stainless steel flat head nails direct fix. Place fasteners no less than 7mm from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

In certain circumstances stainless steel fasteners may be required. Refer to section 7.1 of the Ecoply Barrier Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

### Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate or 150mm centres in Extra High wind zones. Where more than one sheet forms the brace element each sheet must be nailed off independently.



### Fastening the GIB® Plasterboard

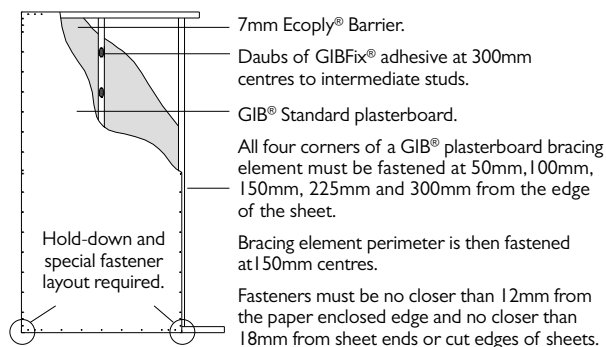
#### Fasteners

32mm x 6g GIB Grabber® Screws or 35mm GIB® Nails

#### Fastening centres

Fasten 50, 100, 150, 225 and 300mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at intermediate sheet joints. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs.

Place fasteners 12mm from paper bound edges and 18mm from cut sheet edges. GIB® plasterboard must be treated in every respect in accordance with relevant GIB® literature.



Ecoply® Bracing Systems are designed to meet the requirements of the New Zealand Building Code and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply Barrier manufactured by CHH Ply and SG8 timber framing and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

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## 7.11 GIB HANDIBRAC® - RECOMMENDED INSTALLATION METHOD

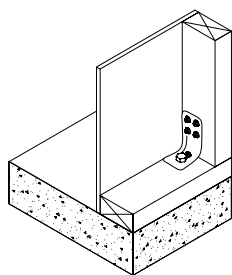
Developed in conjunction with MiTek®, the GIB HandiBrac® has been tested for use as a hold-down in all EPB bracing elements.

- The GIB HandiBrac® registered design provides for quick and easy installation.
- The GIB HandiBrac® provides a flush surface for the wall linings because it is fitted inside the framing. There is no need to check in the framing as recommended with conventional straps.

- The GIB HandiBrac® is suitable for both new and retrofit construction.
- The design also allows for installation and inspection at any stage prior to fitting internal linings.

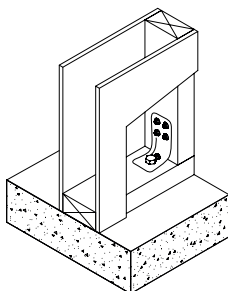
### Concrete Floor

#### External Walls



Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate.

#### Internal Walls



Position GIB HandiBrac® at the stud/ plate junction.

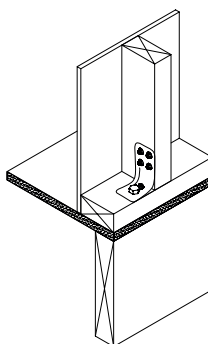
#### Hold-down Fastener Requirements

A mechanical fastening with a minimum characteristic uplift capacity of 15kN or screw bolt supplied with the bracket.

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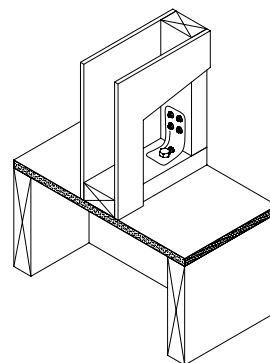
### Timber Floor

#### External Walls



Position GIB HandiBrac® in the centre of the perimeter joist or bearer.

#### Internal Walls



Position GIB HandiBrac® in the centre of the floor joist or full depth solid block.

#### Hold-down Fastener Requirements

M12 x 150mm galvanised coach screw or screw bolt supplied with the bracket.

## 7.12 TOP PLATE HOLD-DOWN CONNECTIONS

Additional nailing of the Ecoply® Barrier to the top and bottom plates in accordance with the details shown in Figure 1 and described below will provide sufficient top plate hold-down capacity to comply with a Type B fixing or 4.7kN uplift capacity as listed in Table 8.18, NZS 3604.

### Fastening

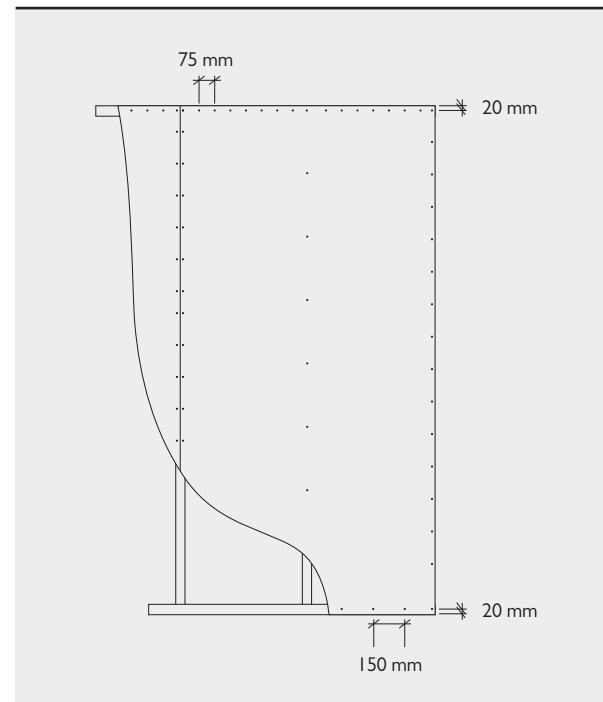
Nails must be 50mm x 2.8mm flat head hot dip galvanised or stainless steel as described in the Ecoply Barrier Specification and Installation Guide for Fastener Durability (Section 7.1).

Nailing to the top plate is at 75mm centres and 20mm from the sheet edge.

The remainder of the sheet perimeter is fastened at 150mm centres no less than 7mm from the sheet edge and 300mm at intermediate studs (or 150mm centres for Extra High wind zones) as with standard nailing for Ecoply Barrier.

Standard nailing of the Ecoply Barrier to the top plate in accordance with the Ecoply Barrier literature will provide a top plate hold-down capacity that exceeds a Type A fixing or 0.7kN uplift capacity as listed in Table 8.18, NZS 3604.

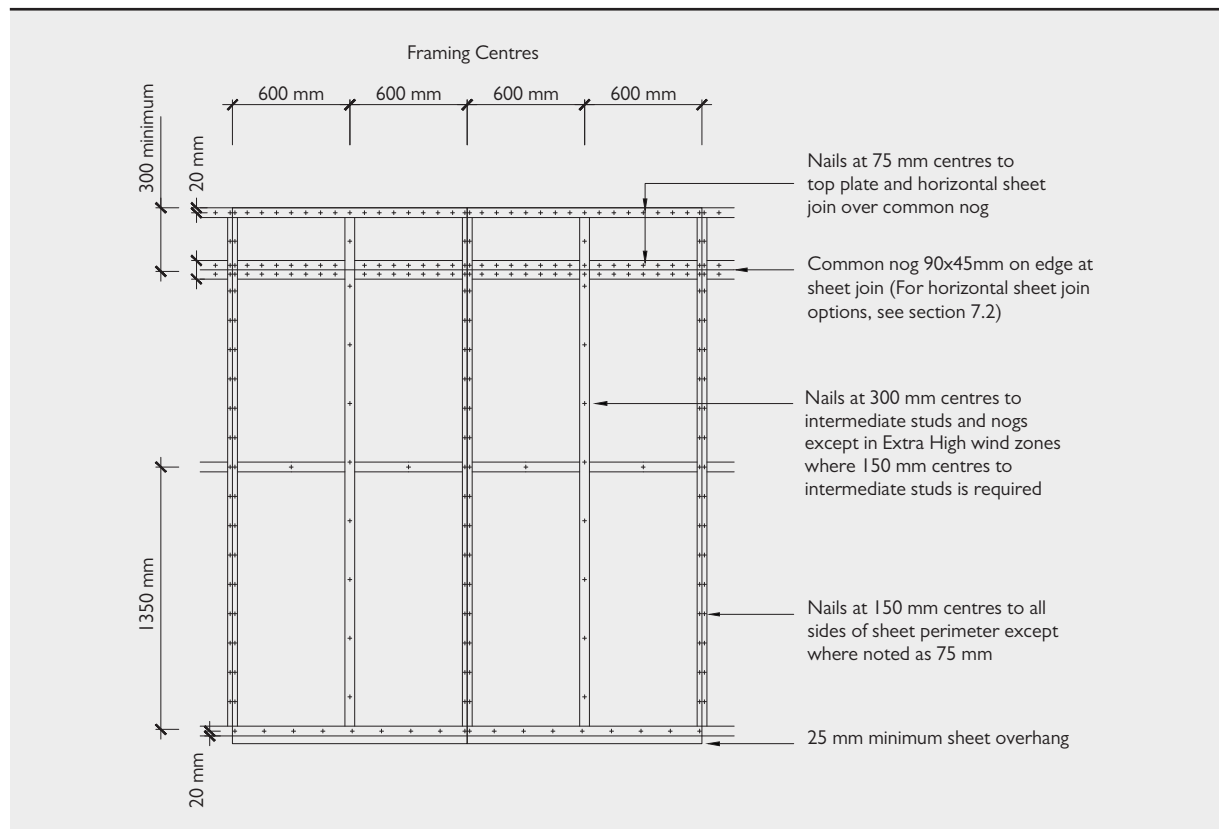
**Figure 1: Top Plate Hold-Downs Connections using Ecoply® Barrier**



### Horizontal Sheet Joints and Top Plate Hold-Down

Where horizontal sheet jointing is required and top plate hold-down connections are completed using Ecoply Barrier, nailing to the noggin at 75mm centres and 20mm from the sheet edge is also required at the sheet joints. Refer Figure 1B Top Plate Hold-Downs and Horizontal Sheet Joints.

**Figure 1B: Top Plate Hold-Downs and Horizontal Sheet Joints**



## 7.13 BRACING LENGTHS

### Length of Ecoply® Barrier Bracing Elements (EPB1, EPBG and EP2).

Ecoply® Barrier bracing elements can be used when the overall bracing element length is >400mm.

The length and capacity of an EPB1, EPBG or an EP2 type element is not only determined by the plywood, but also the placement of the GIB HandiBrac® hold-down fixing. The GIB HandiBrac® must be installed to a continuous stud at the perimeter of the bracing element, refer to Figure 1C: Framing/Handibrac installation, 1D: Bracing Panel Installation, 1E: Bracing Panel Installation – long and 1F: Bracing Panel Installation at Lintel.

Note: If used for Bracing purposes GIB HandiBrac® should not form part of lintel tie down solution.

### Bracing Panel and Hold-down Location at Lintels and 90° Wall Junctions such as Garage Door Openings.

Ecoply Barrier bracing panels can be installed up to lintels and 90° wall junctions such as garage door openings where

the element length is > 400mm. See Figure 1E: Bracing Panel Installation at Lintel for bracing element length, and correct GIB Handibrac® location.

Note: Designers need to be aware of the framing requirements and not try to specify bracing elements based on length only. Framing requirements may mean bracing lengths are not practically achievable as designed and tested and developed due to framing layout.

When lintels share jamb studs with bracing elements, alternate hold-down will be required (the GIB HandiBrac® forming part of the bracing solution must not form part of the lintel hold-down).

### Length of EPBS Elements

The length of the EPBS element (requiring standard NZS 3604:2011 bottom plate connections) can be taken as full frame length measure from the outside of the end stud to the opening face as illustrated in Figure 1G: EPBS Bracing panel Installation – Long. The length of the bracing element shall be >400mm.

Figure 1C: Framing/HandiBrac Installation

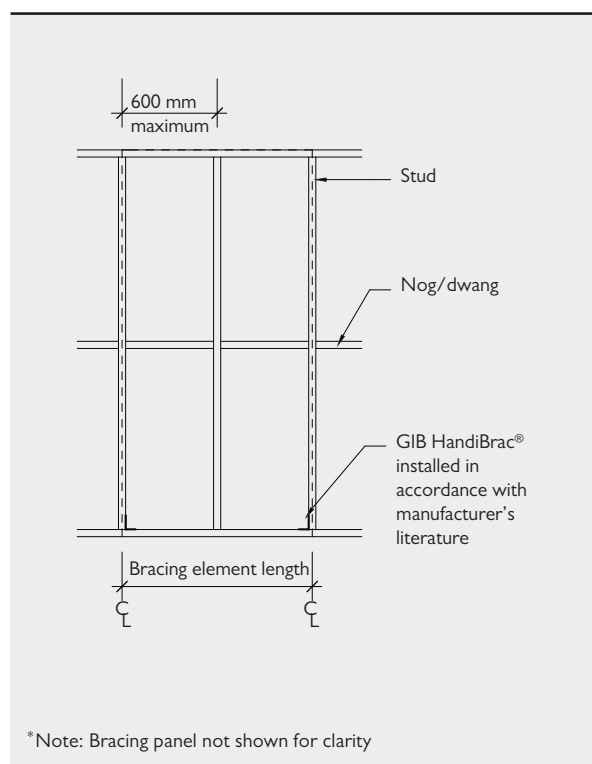


Figure 1D: Bracing Panel Installation

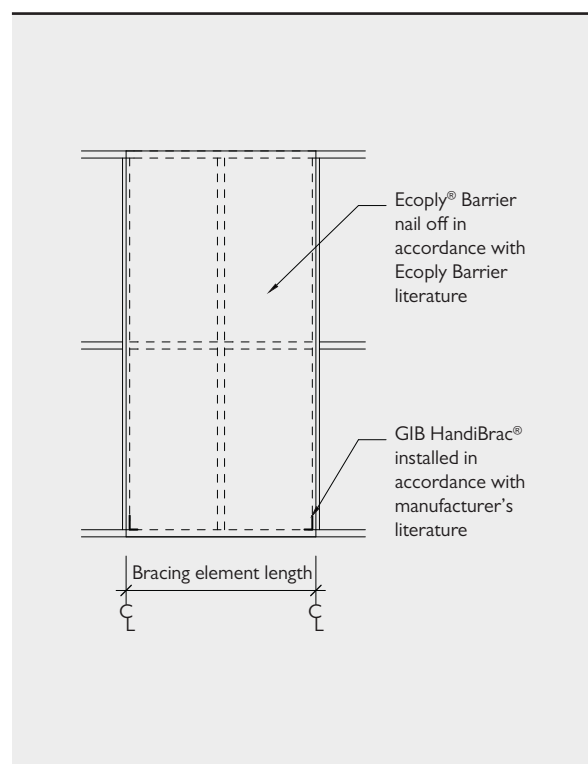


Figure IE: Bracing Panel Installation - Long

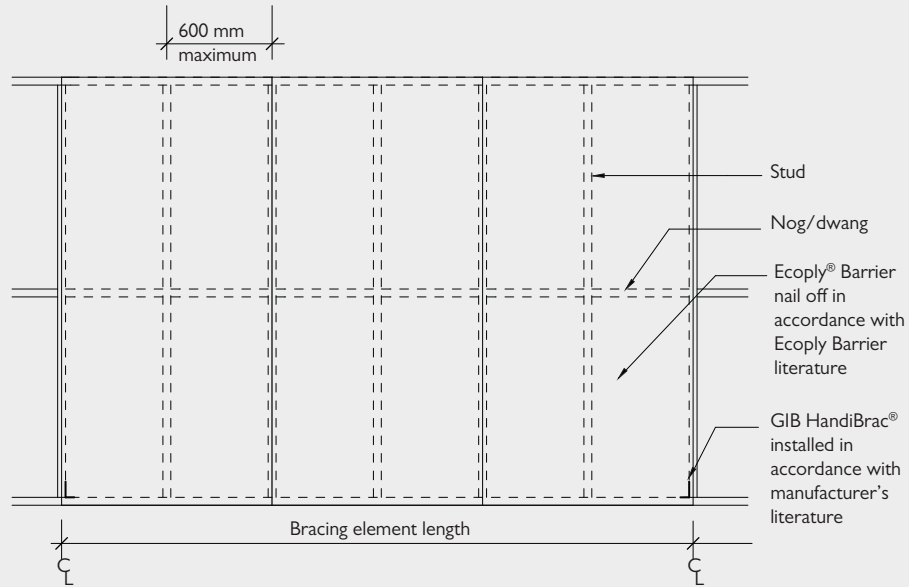


Figure IF: Bracing Panel Installation at Lintel

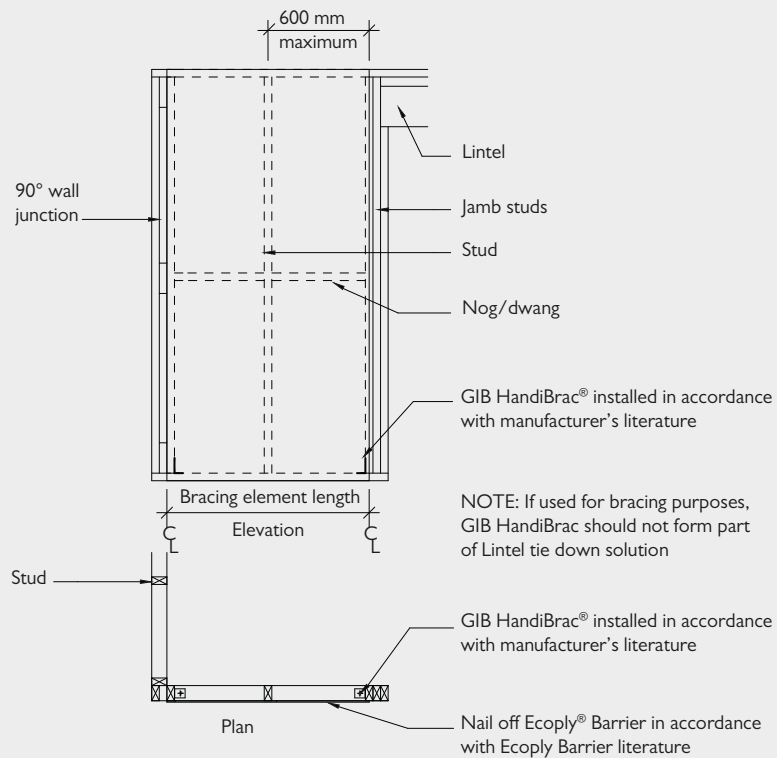
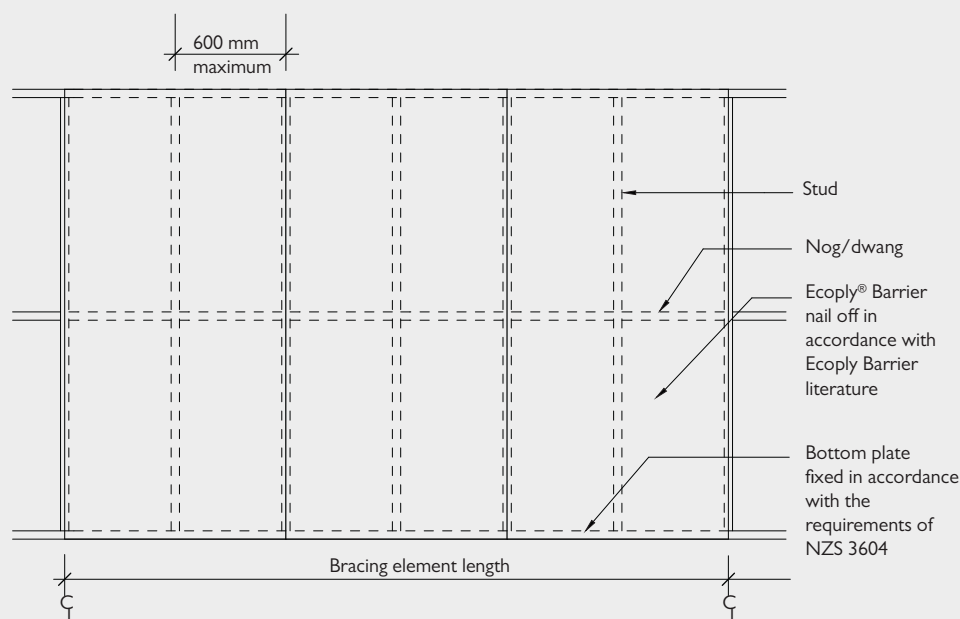


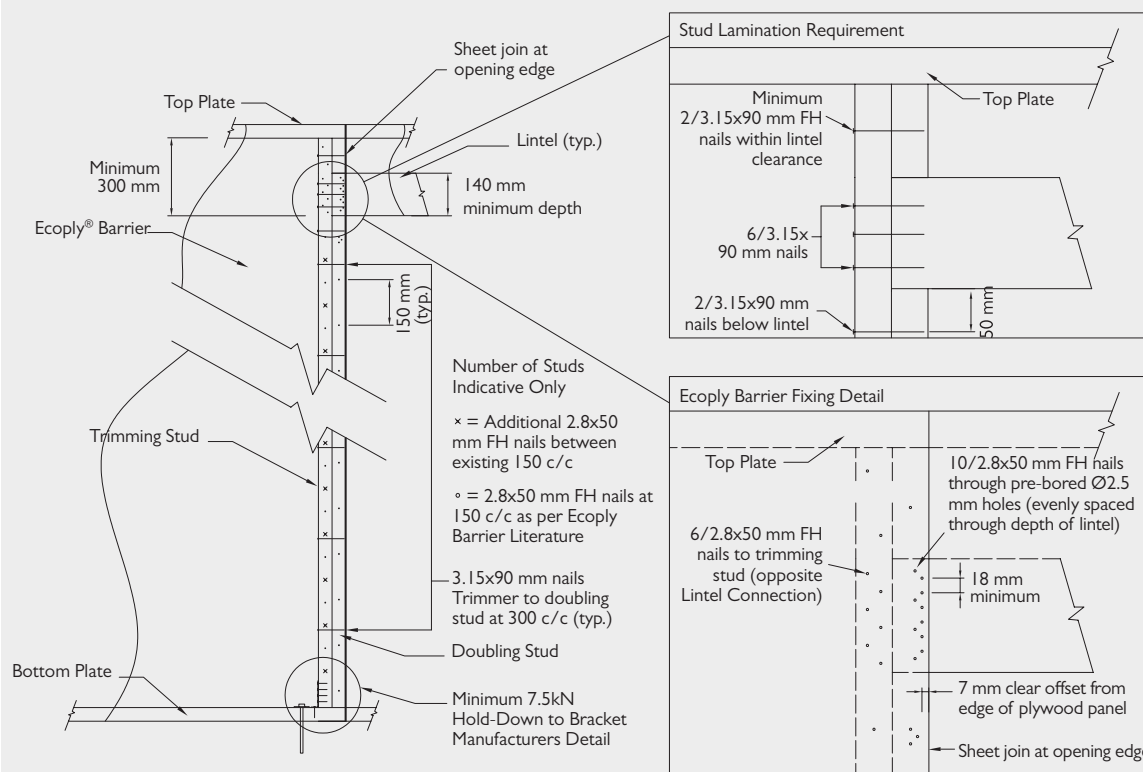


Figure 1G: EPBS Bracing Panel Installation



## 7.14 LINTEL TIE DOWN CONNECTION

Figure 2: Lintel Connection Detail (For Uplifts Not Exceeding 7.5kN) as Detailed in Clause 8.6.1.8 of NZS 3604



Notes:

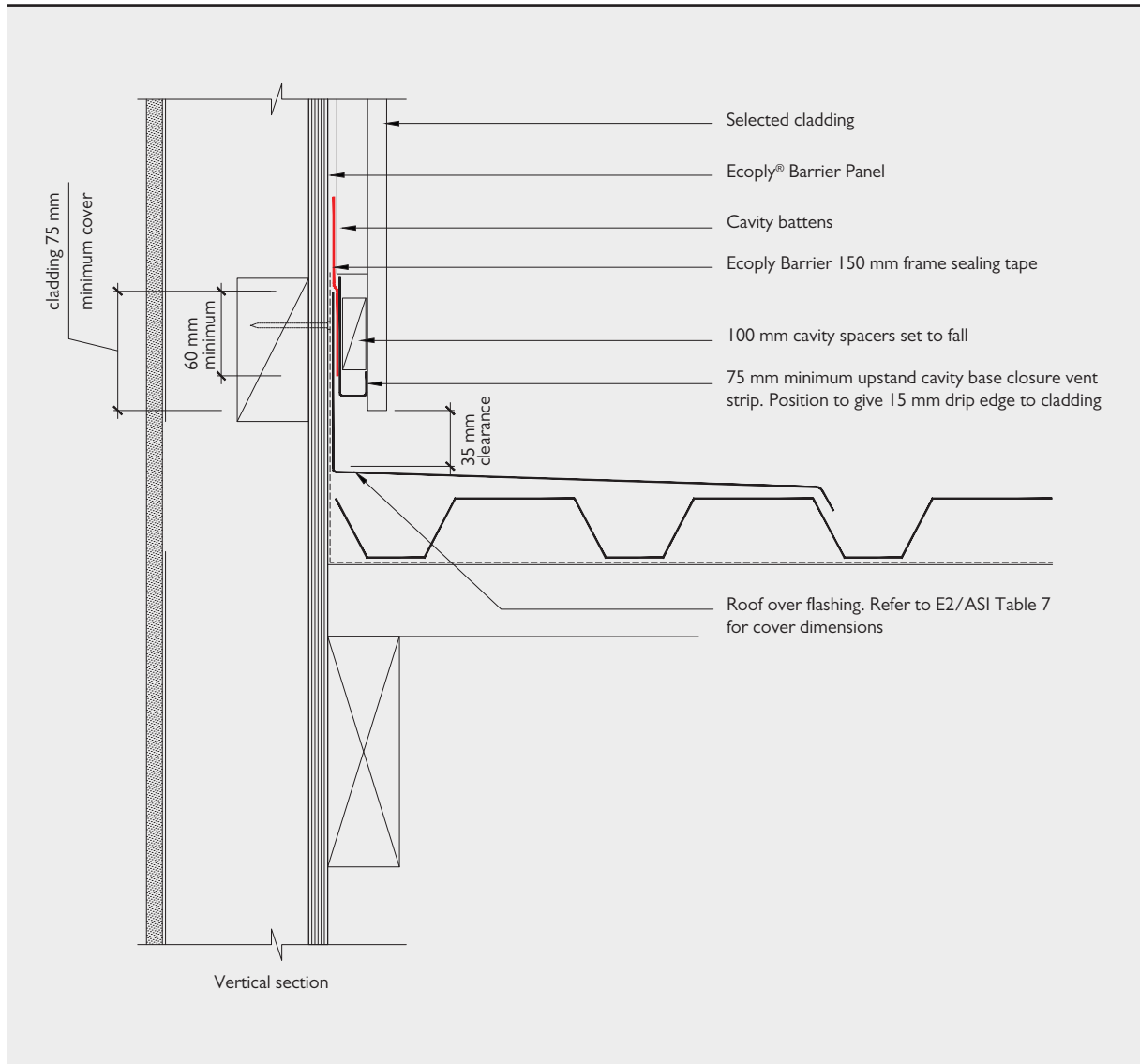
1. Observe minimum end and edge distances for fasteners to NZS3603.
2. Fastener Durability as per the Ecoply Barrier Specification and Installation Guide (Section 7.1).
3. Not suitable for use with trimming studs checked out for lintels.

## 7.15 INSTALLATION – APRON & SADDLE FLASHINGS

### Apron Flashings

Ecoply® Barrier panels must extend past apron Flashing and roofing and have Ecoply Barrier Frame Sealing Tape over an E2/AS1 compliant apron Flashing with minimum 60mm cover as detailed. Refer BAR015 Apron Flashing Junction.

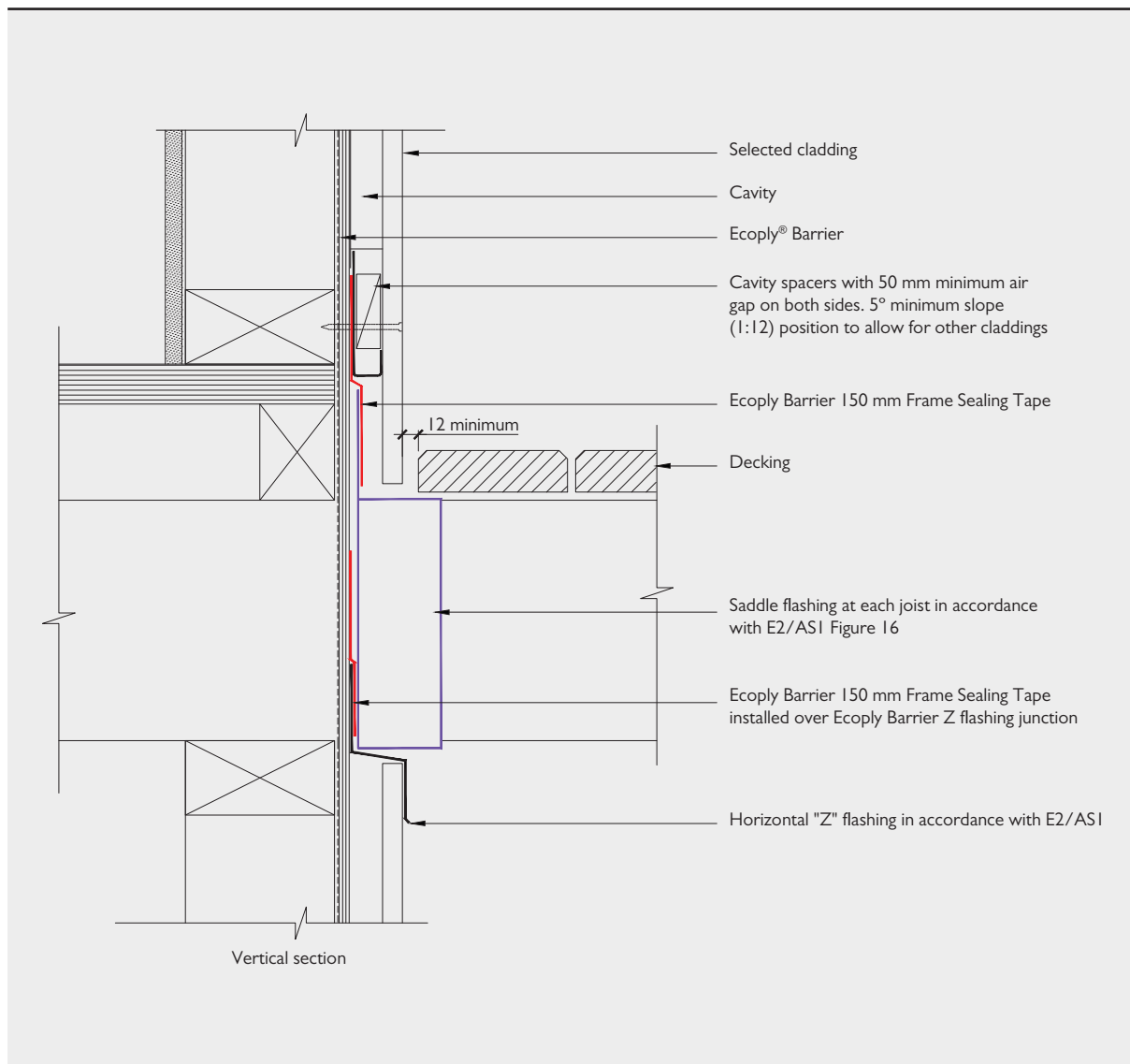
#### BAR015: Apron Flashing Junction



## Saddle Flashings

Apply Ecoply® Barrier Frame Sealing Tape over an E2/AS1 compliant saddle Flashing with minimum 60mm cover as detailed. Where required, Ecoply Barrier Frame Sealing Tape should be applied over the top of horizontal Flashings. Refer BAR016 Ecoply Barrier Saddle Flashing.

### BAR016: Ecoply® Barrier Saddle Flashing



## 8.0 FIRE RATED SYSTEMS

Clause C, Fire, of the NZBC has specific requirements about the use of combustible materials in cladding systems and in relation to the location of wall framing to the boundary and for buildings over the height of 10 m for single occupancy dwellings (or 7m for commercial buildings and apartments). As a wood veneer-based product, Plywood is considered a combustible material. A 'cladding system' includes both the external cladding/ rain screen and the associated building wrap/rigid air barrier (i.e Ecoply Barrier). As such, in accordance with Clause C of the NZBC:

- Combustible cladding components cannot be used as an external cladding or part of an external cladding system where it is within 1m of the boundary (including a unit title boundary)
- Combustible cladding components are not permitted to be used as part of an external wall cladding system where the building height is greater than 10m for houses (or 7m for commercial buildings and apartments).

Note: For specific information about the use of non-combustible material in cladding solutions and fire please refer to the NZBC Clauses C1 - C6 – Protection from Fire

## 9.0 CLADDING SYSTEM INSTALLATION

- Cladding must be installed as soon as possible.
- Claddings must comply and be installed in line with NZBC and cladding supplier specifications.
- Cladding maintenance advice should be sought from the cladding manufacturer.
- Cladding fastener lengths must be increased by a minimum of 7mm to ensure the required fastener pull out loadings are achieved.

## 10.0 WORKING INSTRUCTIONS

Always use safe working practices when handling and installing Ecoply® Barrier plywood Sheathing. For further information refer to Safety Data Sheets available online from [www.ecoplybarrier.co.nz](http://www.ecoplybarrier.co.nz).

### Hole Forming - Making Penetrations in Ecoply® Barrier Sheets.

- 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 electric drill.
- For irregular rectangle or circular holes a perforation in the sheet can be made by drilling a series of smaller holes around the perimeter of the hole, then tapping out the waste piece from the plywood sheathing or cut using a jig-saw.

### Cutting Sheets - Making Cuts to Ecoply Barrier Sheets.

- Ecoply Barrier can be cut using any circular-saw or hand-saw tool.
- When sawing, clamp a straight edge to the sheet as a guide. Run the saw base along the straight edge to make a precise cut.

## 11.0 REFERENCED DOCUMENTS

NZBC B1/AS1 Structure

NZBC B2/AS1 Durability

NZBC E2/AS1 External Moisture

AS/NZS 1170.2: 2011 Structural design actions – Wind Actions

NZS 1170.5: 2004 Structural design actions – Earthquake actions – New Zealand

AS/NZS 1604.3: 2012 Specification for preservative treatment – Plywood

AS/NZS 2269: 2012 Plywood Structural Specifications

NZS 3602: 2003 Timber and Wood based products for use in Building

NZS 3603: 1993 Timber Structures Standard

NZS 3604: 2011 Timber Framed Buildings

IBC AC148 Acceptance Criteria for Flexible Flashing Materials

Product Technical Statement – Ecoply Barrier: Rigid Air Barrier, July 2015

Ecoply Barrier - Safety Data Sheet, May 2015



## 12.0 FREQUENTLY ASKED QUESTIONS

**Q: Do fastener heads need to be taped over?**

**A:** Fastener heads are not required to be taped over, unless the fastener head completely penetrates the thickness of the face veneer.

**Q: Do I need to tape all of the seams between the Ecoply® Barrier plywood panels?**

**A:** Yes. All seams between the panels must be taped with Ecoply® Barrier Sealing Tape (60mm width Grey Colour) to ensure that it functions as a structural rigid air barrier system.

**Q: Can Ecoply Barrier Sealing Tape, Sill Tape and Frame Sealing Tape be installed in the rain?**

**A:** Yes. The tapes require pressure for a secure seal, and will require an extra period of time to fully adhere to the surface.

**Q: What is permeance, and why is it important?**

**A:** Permeance is a property that defines the ease at which water molecules diffuse through a material, typically measured in "perms." While water resistant barriers are designed to keep liquid water out of the wall system, they are also generally designed to allow moisture vapour to pass through so that the wall system can "breathe" meaning moisture vapour will not accumulate and condense in the wall system.

**Q: How long can I leave Ecoply Barrier panels exposed before I install roof and wall coverings?**

**A:** Ecoply Barrier panels can be left exposed for up to 180 days, however it is recommended to install roof and wall coverings as soon as possible.

**Q: What is the weight of an Ecoply Barrier panel?**

**A:** 2440mm panel = 11.7kg, 2745mm panel = 13.2kg (guidelines only).

**Q: What is the R-value of Ecoply Barrier?**

**A:** The thermal resistance or insulating effectiveness of plywood

panels can be calculated using NZS 4214. Plywood has a conductivity (K) of 0.13W/mC so a 7mm panel has a thermal resistance  $R = 0.007/0.13 = 0.05$ .

**Q: How much space should be left for expansion?**

**A:** Allow 2-3mm expansion gap between square edges of Ecoply Barrier Panels. Ecoply Barrier is provided in 1197mm widths to account for this.

**Q: Where can I purchase Ecoply Barrier panels and tapes from?**

**A:** Ecoply Barrier is available from all leading building merchants in New Zealand.

**Q: Can I use Ecoply Barrier on steel frame?**

**A:** For use on steel framing please use Ecoply Barrier for Steel and the use the Ecoply Barrier for Steel Specification and Installation Guide.

**Q: Do I need to Install Nogs/Dwangs?**

**A:** Ecoply Barrier can be installed to frames without nogs installed to the studs where nogs are **not** required by the cladding system. This practice allows for the installation of insulation without the need to terminate insulation at nog lines, creating a more efficient insulation path.

NZS 3604:2011 Section 8.5.4 notes that lateral support to the timber framing can be completed in several ways by either nogs or interior and exterior lining that comply with NZS 3604 Section 12 or E2/AS1.

Ecoply Barrier, as part of the external cladding system, will comply with the requirements of E2/AS1 Rigid Air Barrier and NZS 3604:2011 Section 8.5.4. because it does not require the nogs for fixing or support of the sheet and is fixed at 150 mm centres minimum around the sheet.

**Where cladding systems require nogs for support, nogs should be installed as required.**

## 13.0 LIMITATIONS

The information contained in this document is current as at September 2020 and is based on data available to CHH Ply at the time of going to print.

All photographic images are intended to provide a general impression only and should not be relied upon as an accurate example of Ecoply Barrier products installed in accordance with this document or the NZBC compliance documents.

This publication replaces all previous CHH Ply's design information and literature relating to Ecoply Barrier structural plywood products and tapes. CHH Ply reserves the right to change the information contained in this document without prior notice. It is

your responsibility to ensure that you have the most up to date information available, including at the time of applying for a building consent. You can call toll free on 0800 326 759 or visit [www.ecoplybarrier.co.nz](http://www.ecoplybarrier.co.nz) to obtain current information.

**CHH Ply has used all reasonable endeavours to ensure the accuracy and reliability of the information contained in this document. However, to the maximum extent permitted by law, CHH Ply assumes no responsibility or liability for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information.**

## 14.0 ECOPLY® BARRIER INSTALLATION CHECKLIST

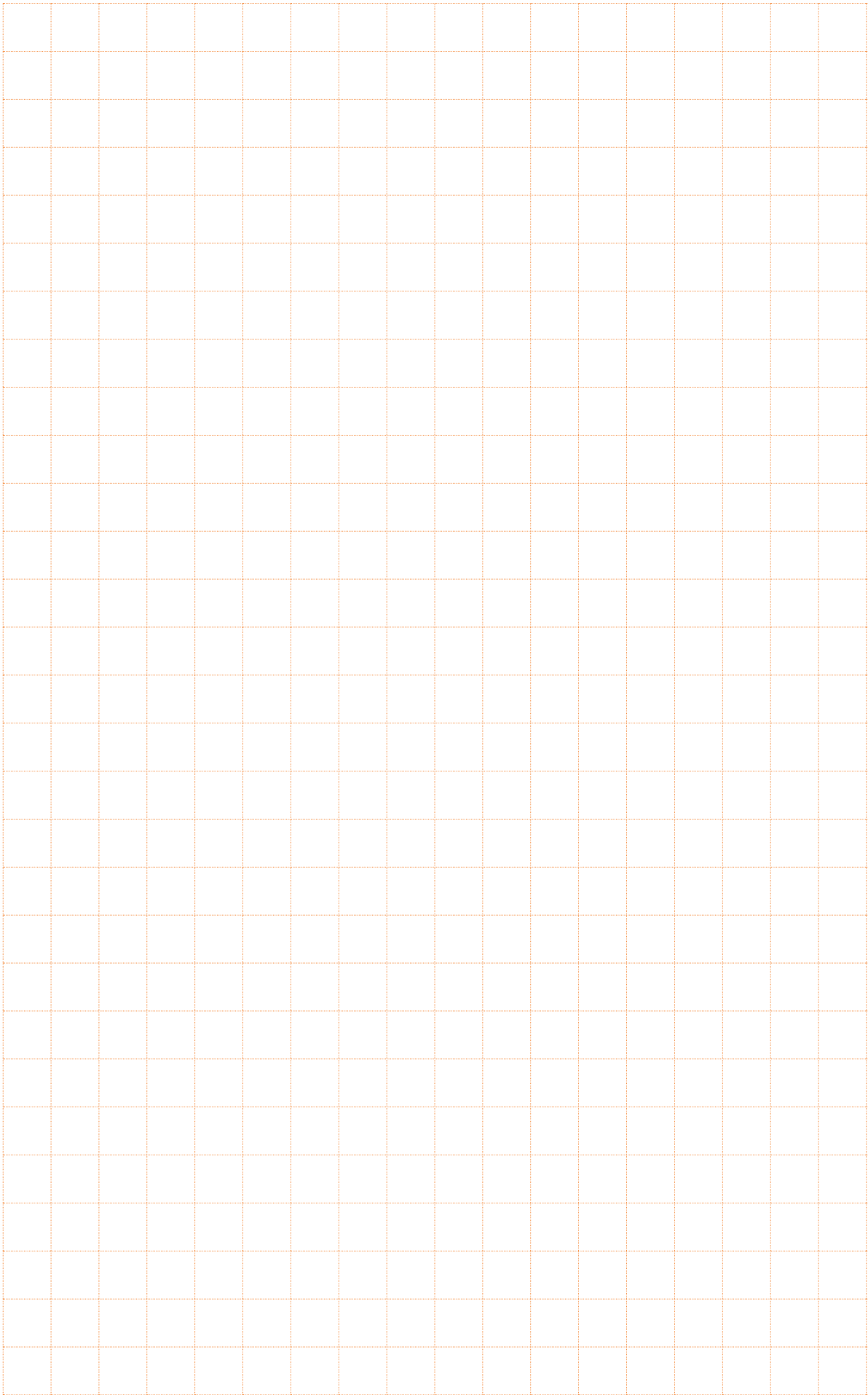
### 14.1 RIGID AIR BARRIER CHECKLIST

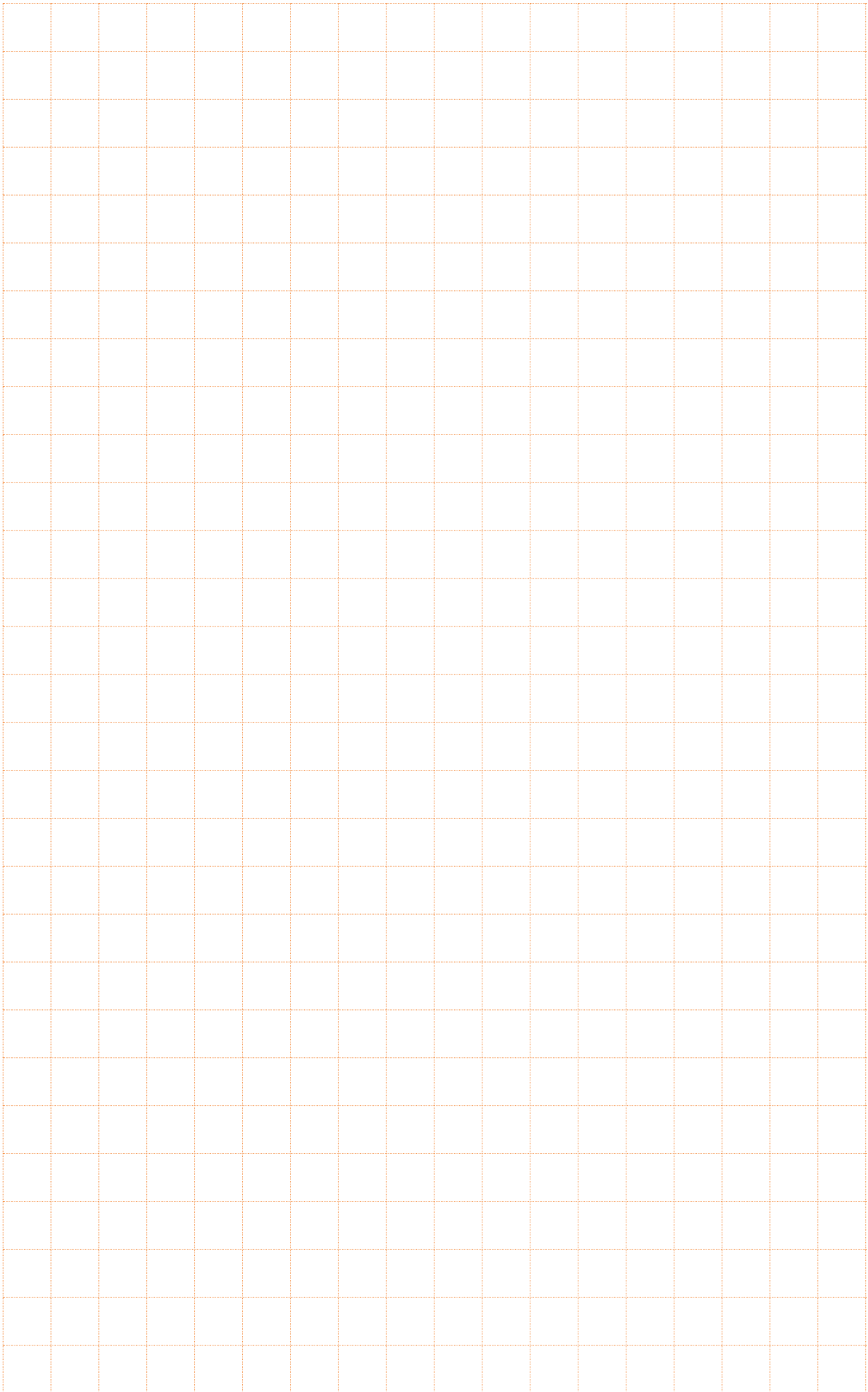
The below installation areas are considered critical to the successful installation of Ecoply® Barrier when used as a rigid air barrier.

Using this sheet as a checklist during installation will aid in problem free product installation and long term product durability post construction.

Task	Tick when checked
<b>Prior to Specification and Installation</b>	
Read the Ecoply® Barrier Specification and Installation Guide in its entirety	<input type="checkbox"/>
<b>Install</b>	
Position Ecoply Barrier panels with the water resistant powder coat film facing outwards	<input type="checkbox"/>
Sheet edges fully supported by framing	<input type="checkbox"/>
<b>Sheet Cuts</b>	
Cut sheet ends are placed to the top	<input type="checkbox"/>
<b>Fastener Material Type</b>	
Galvanised fasteners or better used (Stainless steel annular groove nails required in sea spray zones or other corrosive environments – Zone D)	<input type="checkbox"/>
<b>Sheet Fastener Pattern</b>	
Around sheet edge – maximum 150mm centre spacing	<input type="checkbox"/>
At intermediate framing – maximum 300mm centre spacing or 150mm in Extra High wind zone	<input type="checkbox"/>
<b>Expansion Gap Between Sheets (Vertical sheet joints)</b>	
2-3mm gap between vertical edges of sheets	<input type="checkbox"/>
NOTE: Expansion gaps are required between vertical edges of sheets to accommodate natural expansion and contraction of sheets	
<b>Ground Clearances</b>	
Ground clearances maintained for claddings in accordance with E2/AS1 and NZS 3604	<input type="checkbox"/>
Sheets overhang the bottom plate by a minimum of 25mm & maximum 40mm over timber and concrete foundations	<input type="checkbox"/>
<b>Vertical Sheet Joints</b>	
Seal all vertical joints including corners with Ecoply Barrier Sealing Tape (60mm x 30m) or Frame Sealing Tape (150mm / 200mm x 30m)	<input type="checkbox"/>
All vertical window and door frames sealed with Ecoply Barrier Frame Sealing Tape	<input type="checkbox"/>
<b>Horizontal Sill Flashing Detail</b>	
Apply Ecoply Barrier Sill Tape to the horizontal sill section of a window or door opening	<input type="checkbox"/>
Make sure the tape extends 100mm up both window / door studs	<input type="checkbox"/>
<b>Horizontal Sheet Joints</b>	
Use Ecoply Barrier PVC horizontal Z Flashing (Product code RDZF7) OR Ecoply Barrier 150mm OR 200mm Frame Sealing Tape.	<input type="checkbox"/>
<b>Service Penetrations</b>	
Waste pipe outlets of maximum 150mm diameter placed at no closer than 150mm to the edge of braced element	<input type="checkbox"/>
Use a flexible sealing tape to seal the service penetration: minimum cover 100mm, 25mm minimum width around the pipe penetration	<input type="checkbox"/>

Refer to the current Ecoply® Barrier Specification and Installation Guide for full installation specifications and suggested details.





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