



Installation Guide

Versilux™ Lining

INTERIORS

Australia February 2019

Make sure your information is up to date.

When specifying or installing James Hardie™ products, ensure that you have the current technical information and guides. If in doubt, or you need more information, visit www.jameshardie.com.au or Ask James Hardie™ on 13 11 03.

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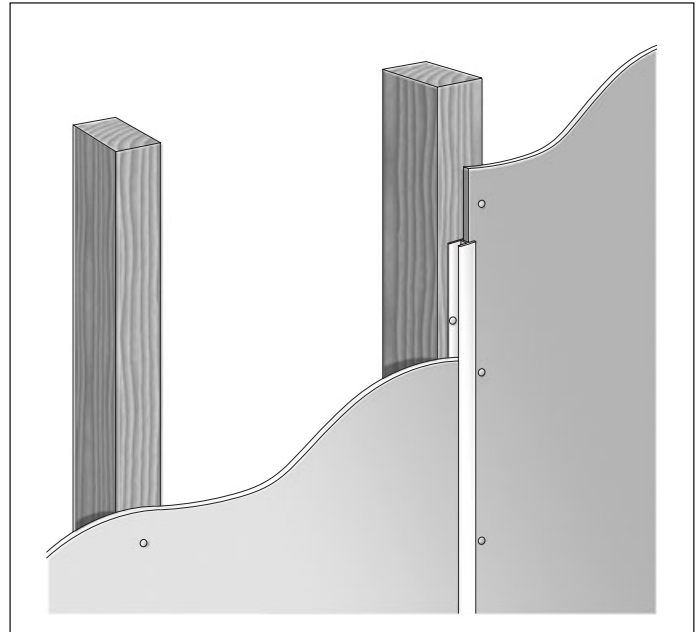
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1 INTRODUCTION

Versilux™ lining is a premium sanded sheet which is an ideal lining for internal high traffic areas, fire and/or acoustic wall systems. Versilux™ lining is also used for ceilings and eaves/soffit applications.

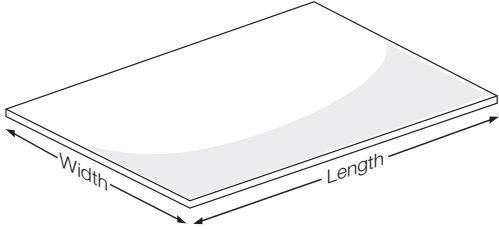
Main features:

- Durable internal lining sheet.
- Suitable surface for paint finishes.
- Square edges for easy joining.
- Reliable impact resistant lining.
- Suitable for use in fire and acoustically rated systems.
- Pink sheet to identify quality James Hardie™ fibre cement.




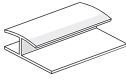
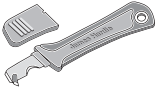
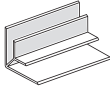
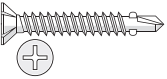
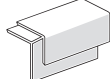
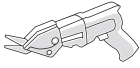
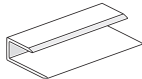
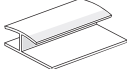

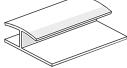
The specifier or other responsible party for the project must ensure the information and details in this guide are appropriate for the intended application and specific design and detailing is undertaken for areas which fall outside the scope of this documentation.

TABLE 1 VERSILUX™ LINING SHEET SIZES

PRODUCTS	LENGTH	WIDTH	
		900	1200
 <p>Approx. mass: 4.5, 6 and 9mm Versilux™ is 6.2, 8.3 and 12.4 kg/m² respectively.</p>	4.5 mm thickness (only available in QLD and NT)		
	2400	✓	✓
	3000		✓
	3600		✓
	6mm thickness		
	2400		✓
	2700		✓
	3000	✓	✓
	3600		✓
	9mm thickness		
	2400		✓
	2700		✓
	3000		✓


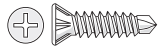
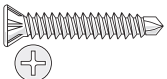
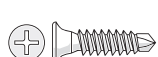
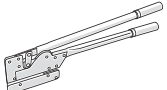
*All dimensions and masses are approximate and subject to manufacture tolerances.

TABLE 2 PRODUCT / ACCESSORIES / TOOLS

COMPONENTS SUPPLIED BY JAMES HARDIE™			
PRODUCT	DESCRIPTION	PRODUCT	DESCRIPTION
	HardieBlade™ Saw Blade. 185mm diameter A poly-diamond blade for fast and clean cutting of James Hardie fibre cement. Bore diameter is 20mm. 1 each. Part No. 300660		James Hardie™ PVC Straight Jointer for 6mm thick sheets. 3,000mm long A 3,000mm long PVC extrusion used to join 6mm thick sheets. 25 per pack. Part No. 305546
	Villaboard™ Knife A score and snap knife designed to efficiently cut through fibre cement sheets ≤9mm thick. 12 per box. Part No. 305915.		James Hardie™ PVC Internal Corner Angle for 6mm thick sheets. 3,000mm long A PVC extrusion, to be used with 6mm thick sheets at internal corner junctions to conceal the sheet edge. 25 per pack. Part No. 305545
	HardieDrive™ Screw 32mm long A class 3 finish self-tapping wing-tipped screw for fastening 6mm and 9mm Versilux™ sheets to 0.8mm to 1.6mm BMT steel frames. 500 per box. Part No. 305532		James Hardie™ PVC External Corner Angle for 6mm thick sheets. 3,000mm long A PVC extrusion, to be used with 6mm thick sheets at external corner junctions to conceal the sheet edge. 25 per pack. Part No. 305544
	James Hardie™ Fibreshear Electric tool for cutting fibre cement sheets. 1 each. Part No.300653		James Hardie™ PVC Cap Mould for 4.5mm thick sheets. 3,000mm long A PVC extrusion used to finish 4.5mm thick sheet edges. 25 per pack. Part No. 305542
	James Hardie™ PVC Straight Jointer for 4.5mm thick sheets. 2,400mm long A 2,400mm long PVC extrusion used to join 4.5mm thick sheets. 25 per pack. Part No. 305538		James Hardie™ PVC Cap Mould for 6mm thick sheets. 3,000mm long A PVC extrusion used to finish 6mm thick sheet edges. 25 per pack. Part No. 305543
	James Hardie™ PVC Straight Jointer for 4.5mm thick sheets. 3,000mm long A 3,000mm long PVC extrusion used to join 4.5mm thick sheets. 25 per pack. Part No. 305541		

COMPONENTS SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with its Versilux™ lining. James Hardie does not supply these products and does not provide a warranty for their use. Please contact the component manufacturer for information on their warranties and further information on their products.

ACCESSORIES	DESCRIPTION	ACCESSORIES	DESCRIPTION
	Galvanised fibre cement nails 30mm x 2.8 galvanised fibre cement nails.		Buildex® FibreTEKS® For fastening 6mm and 9mm Versilux™ lining to 0.55mm to 0.75mm BMT steel frames. Length: 25mm
	Buildex® FibreTEKS® For fastening 9mm Versilux™ lining to 0.55mm to 0.75mm BMT steel frames. Length: 30mm		Buildex® FibreTEKS® bugle head For fastening 4.5mm Versilux™ lining to 0.55mm to 0.75mm BMT steel frames. Length: 20mm
	Hand guillotine Guillotine for cutting fibre cement.		

2 SAFE WORKING PRACTICES

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

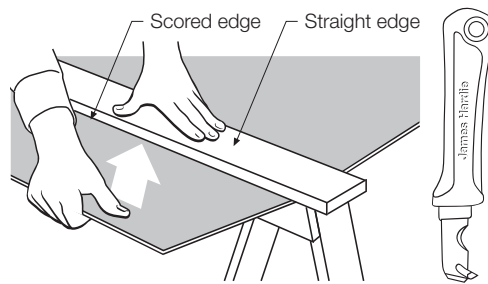
James Hardie™ products contain sand, a source of respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'score and snap' knife, fibre cement shears or, where not feasible, use a HardieBlade™ saw blade (or equivalent) and dust-reducing circular saw attached to an appropriate, well maintained, filtered 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 a vacuum and filter, both of which are well maintained and appropriate for capturing fine (respirable) dust. Alternatively, use wet clean-up methods - never dry sweep. For further information, refer to our installation instructions and Safety Data Sheets available at www.jameshardie.com.au. FAILURE TO ADHERE TO OUR WARNINGS, SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

WORKING INSTRUCTIONS

Refer to recommended safe working practices before starting any cutting or machining of product.

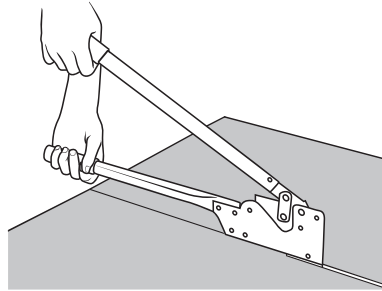
Score and snap

Score and snap is a fast and efficient method of cutting James Hardie™ building products using James Hardie's Villaboard™ 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 one third of sheet thickness. Snap upwards to achieve break. Smooth any rough edges with a rasp.



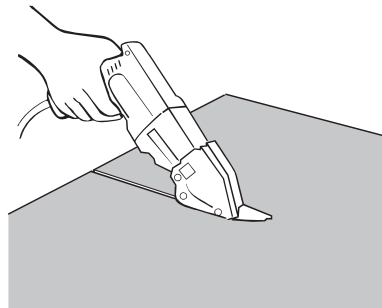
Hand guillotine

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



Fibreshear

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.



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** ▪ Position the cutting station in a well-ventilated area. Use a dust reducing circular saw equipped with HardieBlade™ Saw Blade or comparable fibre cement blade and well maintained vacuum and filter appropriate for capturing fine (respirable) dust.

CUTTING INDOORS

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

REBATING/SANDING/DRILLING/OTHER MACHINING

When rebating, sanding, 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 practice cutting methods where feasible.
2. NEVER use a power saw indoors.
3. ALWAYS use a circular saw blade that carries the HardieBlade™ logo or is of at least comparable performance.
4. NEVER dry sweep - use wet suppression or appropriate vacuum and filter.
5. NEVER use grinders.
6. ALWAYS follow tool manufacturer's safety recommendations.

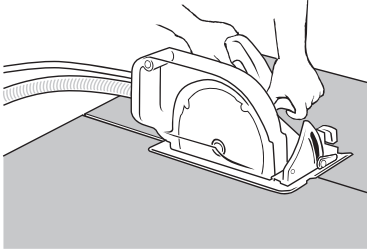
DUST MASKS AND RESPIRATORS

James Hardie recommends the use of P2 respirators as best practice. As a minimum, an AS/NZS1716 P1 respirator must be used when doing any activity that may create dust. For more extensive guidance and options for selecting respirators for workplaces please refer to Australian/New Zealand Standard 1715:2009 "Selection, Use and Maintenance of Respiratory Protective Equipment".

P1 or P2 respirators should be used in conjunction with the above cutting practices to minimise dust exposure. For further information, refer to Safety Data Sheet (SDS) available at www.jameshardie.com.au. 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.

HardieBlade™ Saw Blade

The HardieBlade™ Saw Blade used with a dust-reducing saw and HEPA vacuum extraction allows for fast, clean cutting of James Hardie™ fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector which can be 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.



STORAGE AND HANDLING

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

James Hardie™ building products must be installed in a dry state and protected from 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, moisture, etc.

QUALITY

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

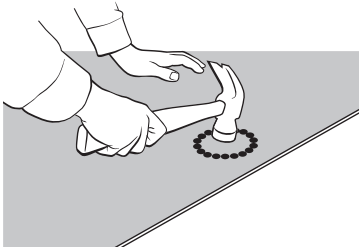
HOLE-FORMING

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 the sheet edges are properly supported.



3 FRAMING

GENERAL

Versilux™ lining can be fixed to either timber or light gauge domestic type steel framing. The framing used must comply with the relevant building regulations and standards and the requirements of this guide.

TIMBER

Use only seasoned timber. Unseasoned timber must not be used as it is prone to shrinkage and can cause Versilux™ lining and frames to move.

The minimum stud width is typically 35mm. However, where butt jointing is used the minimum stud width is 38mm at the joint.

See Figure 13 and 14.

‘Timber used for house construction must have the level of durability appropriate for the relevant climate, expected service life and conditions including exposure to insect attacks or to moisture, which could cause decay.’

Reference AS1684.2 - 2010 ‘Residential Timber Framed Construction’.

STEEL

The minimum size for steel stud framing should be 64mm deep x 0.55mm base metal thickness (BMT).

Steel framing must be designed in accordance with AS/NZS 4600 - 1996 Cold Formed Steel Structures.

Steel sections shall be galvanised or zinc coated with a minimum BMT of 0.55mm and a maximum BMT of 1.60mm. Studs must not be less than 32mm wide.

PREPARATION

Ensure frame is square and work from a central datum line. Frames must be straight and true to provide a flush face to receive the sheathing.



FIGURE 1 FRAME STRAIGHTNESS

NOTE

Trim sheets to suit frame if frame is not square.

A suggested maximum tolerance of between 3mm and 4mm in any 3000mm length of frame will give best results. Versilux™ lining will not straighten excessively warped or distorted frames and any warping may still be visible after the internal lining is applied.

CURVED WALLS

Versilux™ lining may be bent to accommodate curved walls. The minimum bending radii are shown, see Table 4.

TABLE 4 CURVED WALL MINIMUM BENDING RADII

	Along length (mm)	Across width (mm)
4.5mm Versilux™ lining	1200	1800
6mm Versilux™ lining	1800	2400
9mm Versilux™ lining	3000	4000

NOTE

The bending radii given above require no special pre-wetting of the sheet.

To maintain the smoothness of the curve, studs are required at the spacings shown in Table 5.

TABLE 5 CURVED LINING – STUD SPACING

RANGE OF RADII (mm)	STUD SPACING
1200	150
Above 1200 to 1800	200
Above 1800 to 3000	300
Above 3000 to 20000	450
Above 20000	600

4 INSTALLATION

SHEET LAYOUT

Versilux™ lining is usually fixed vertically. Sheet joints must coincide with the centre line of the framing member.

NOTE

1. Where horizontal layout is required provide an in-line row of noggings to allow for fastening of the sheet edge.
2. All construction must be carried out in accordance with the relevant building regulations and standards.

FASTENERS

TIMBER FRAME FASTENER SELECTION

4.5mm, 6mm & 9mm Versilux™ lining	30mm x 2.8mm Galvanised FC Nail*
-----------------------------------	----------------------------------

*If a smaller head size is desired for aesthetic reasons use 25mm x 2.5mm ring shank underlay nails.

STEEL FRAME FASTENER SELECTION

	0.55mm-0.75mm BMT	0.8mm-1.6mm BMT
4.5mm Versilux™ lining	Buildex® FibreTEKS® Bugle head 20mm	N/A
6mm Versilux™ lining	Buildex® FibreTEKS® 25mm	HardieDrive™ screw 32mm
9mm Versilux™ lining	Buildex® FibreTEKS® 30mm	HardieDrive™ screw 32mm

NOTES

Fasteners should be driven flush as shown in Figure 2.

Fasteners should be screwed as close as possible to the stud corners to avoid deflection of the stud flange. See Figure 3.

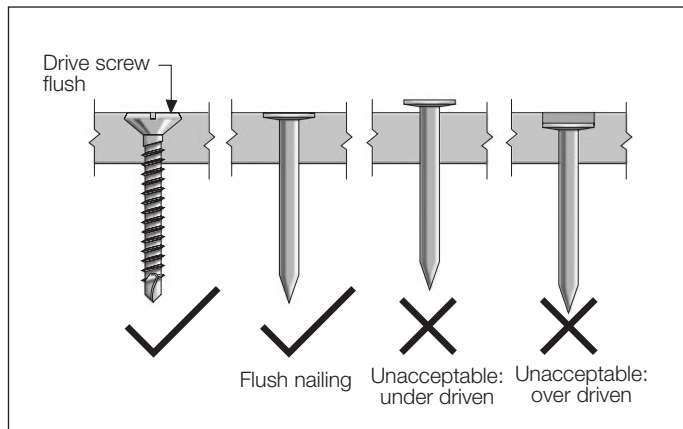


FIGURE 2 FASTENER DEPTH

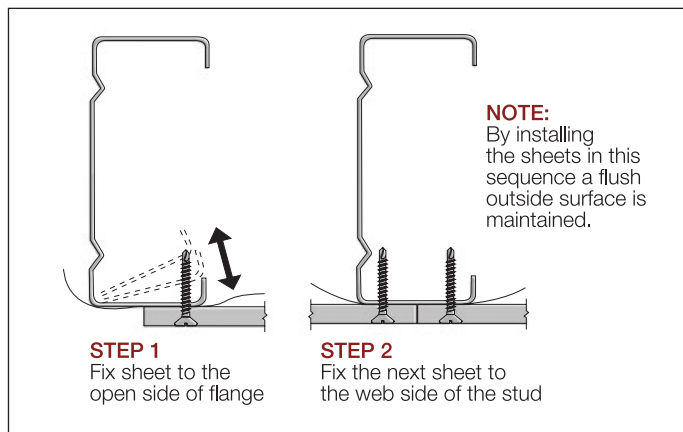


FIGURE 3 SCREW FASTENING

FIXING TO WALLS

Step 1

Place 6mm off-cut packers along floor as temporary support for sheets. This allows provision for frame movement. Put sheet in place as shown.



FIGURE 4 SHEET INSTALLATION

Step 2

Fix sheet starting from the centre of sheet and working outwards to avoid any drumminess. For fastener spacings refer to Figures 6.



FIGURE 5 SHEET INSTALLATION

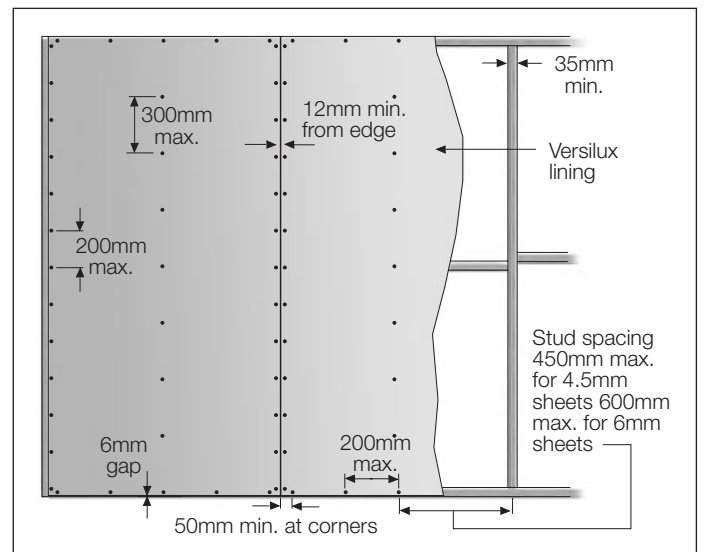


FIGURE 6 WALL FIXING

FIXING TO CEILINGS

In ceiling applications Versilux™ lining can be fixed either parallel or perpendicular to framing. See Figures 7 and 8 respectively.

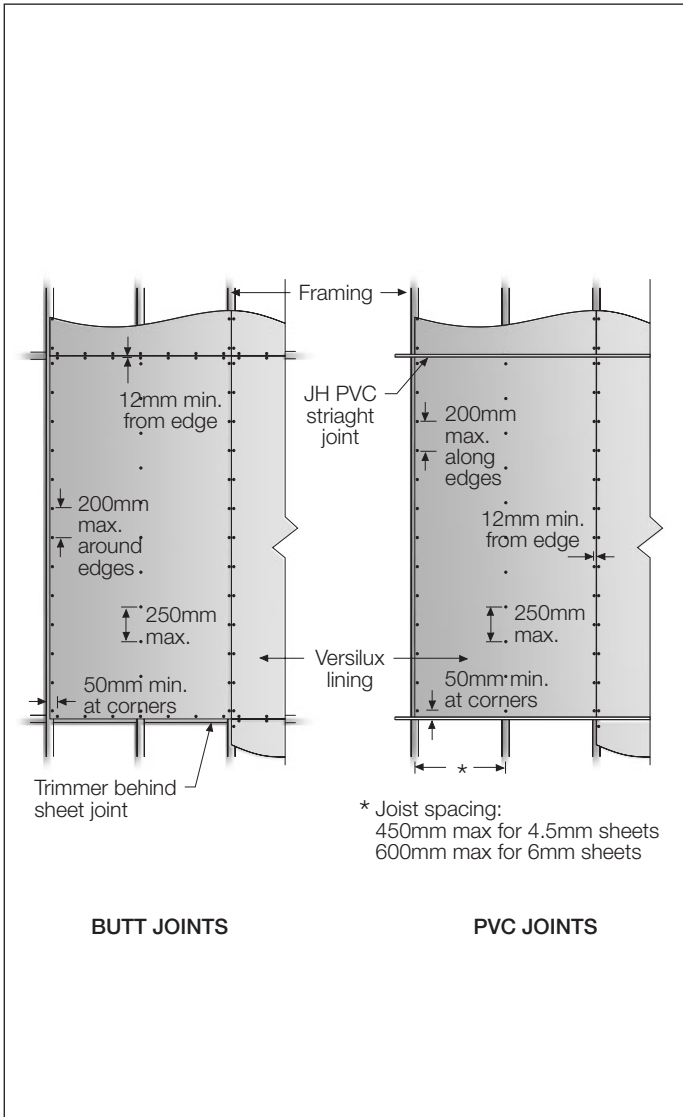


FIGURE 7 CEILING FIXING - PARALLEL TO FRAMING

NOTE

Do not fix sheets to the bottom chord of roof trusses. Batten these out first with timber battens or metal furring channels.

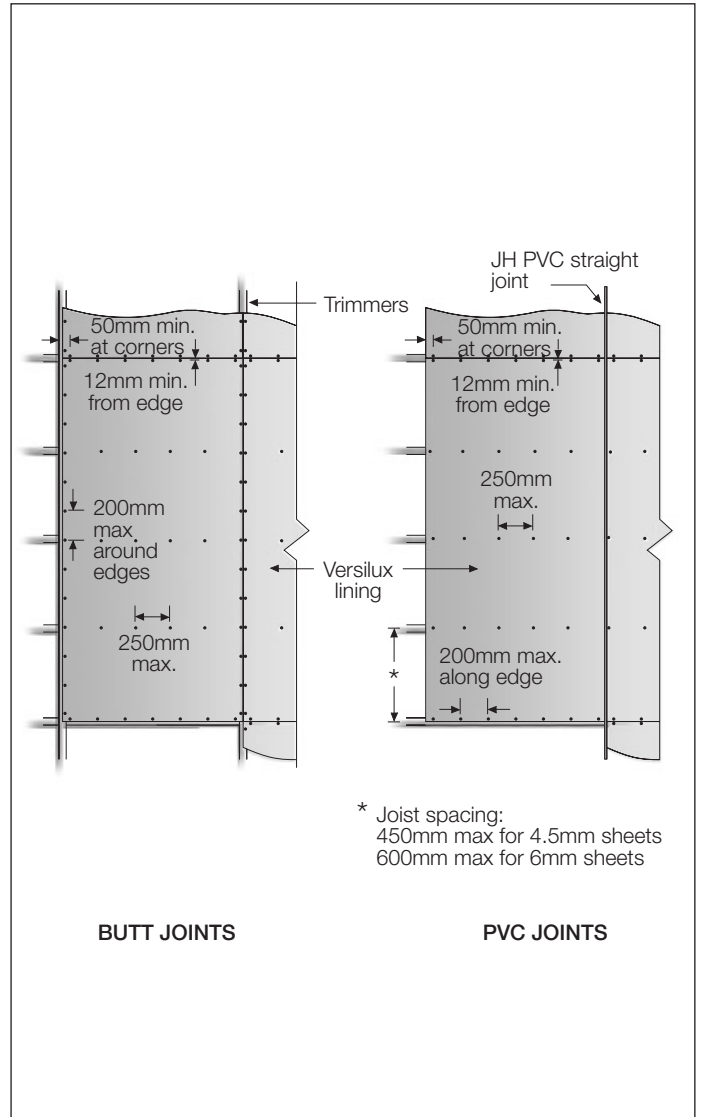


FIGURE 8 CEILING FIXING - PERPENDICULAR TO FRAME

5 JOINTING AND CORNERS

JOINTING

PVC jointing

Versilux™ lining may be jointed using PVC straight jointers as shown in Figures 9-12.

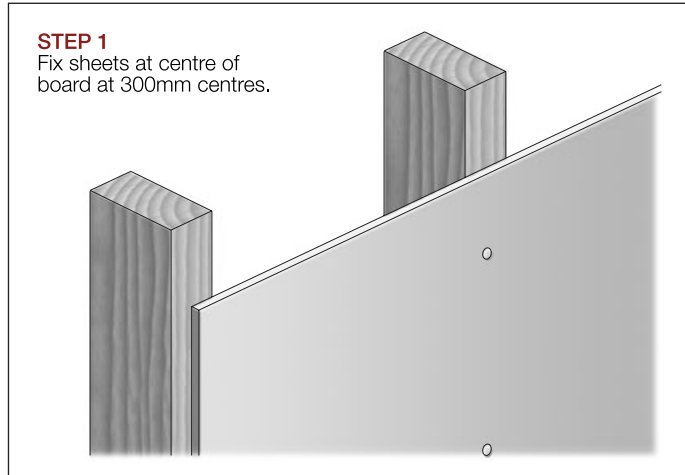


FIGURE 9 STEP 1 - FIX FIRST SHEET

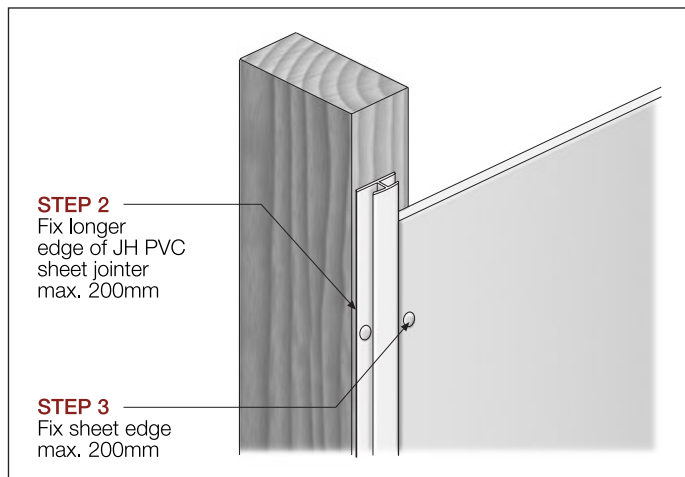


FIGURE 10 STEP 2 - FIX JOINTER

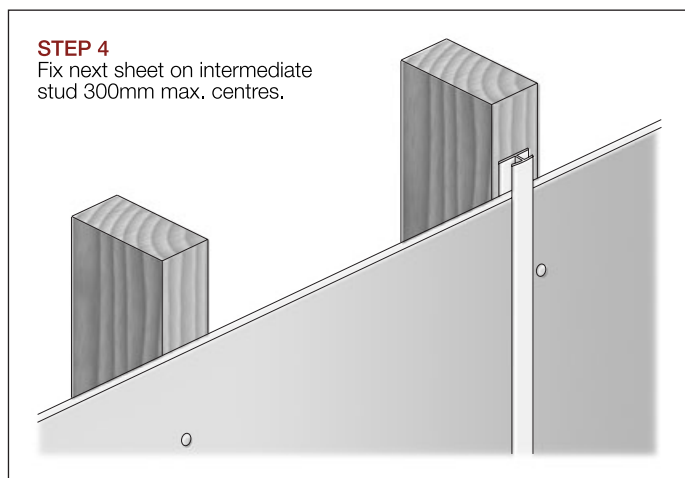


FIGURE 11 STEP 3 - FIX SECOND SHEET

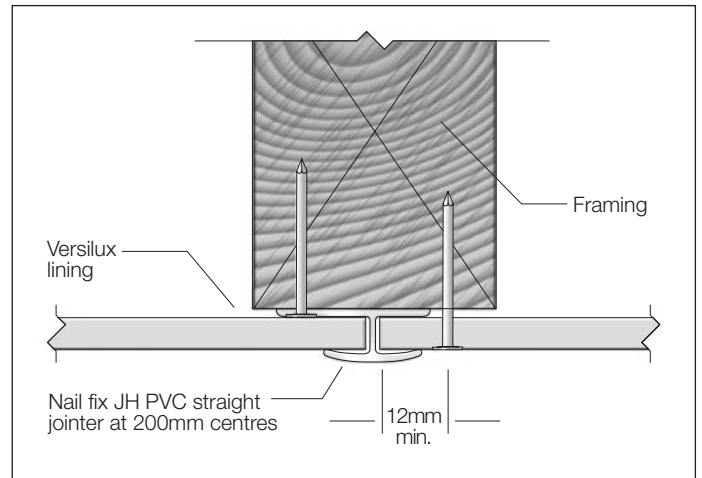


FIGURE 12 PVC STRAIGHT JOINT DETAIL

Butt jointing

Versilux™ lining may also be butt jointed by positioning sheet edges along centreline of framing, see Figures 13-14.

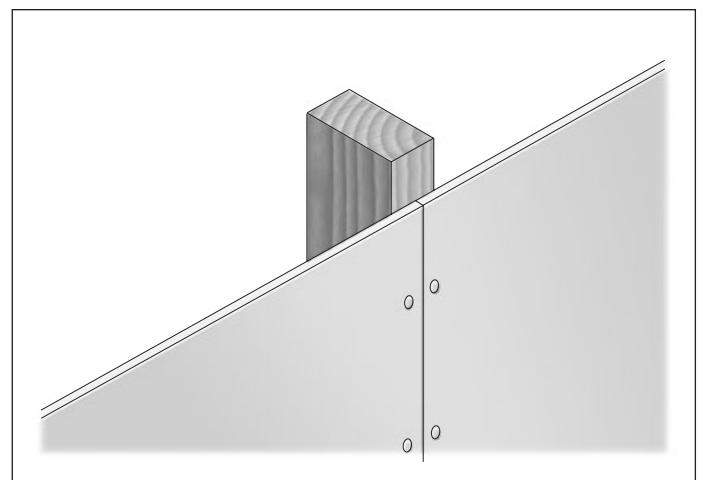


FIGURE 13 SHEET FIXING - BUTT JOINTING

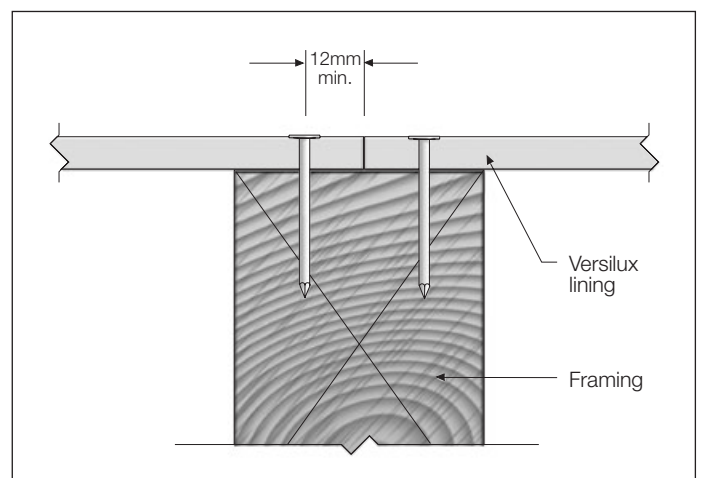


FIGURE 14 BUTT JOINTING DETAIL

CORNERS

External and internal corners can be finished using the appropriate PVC jointers as shown in Figures 15-17.

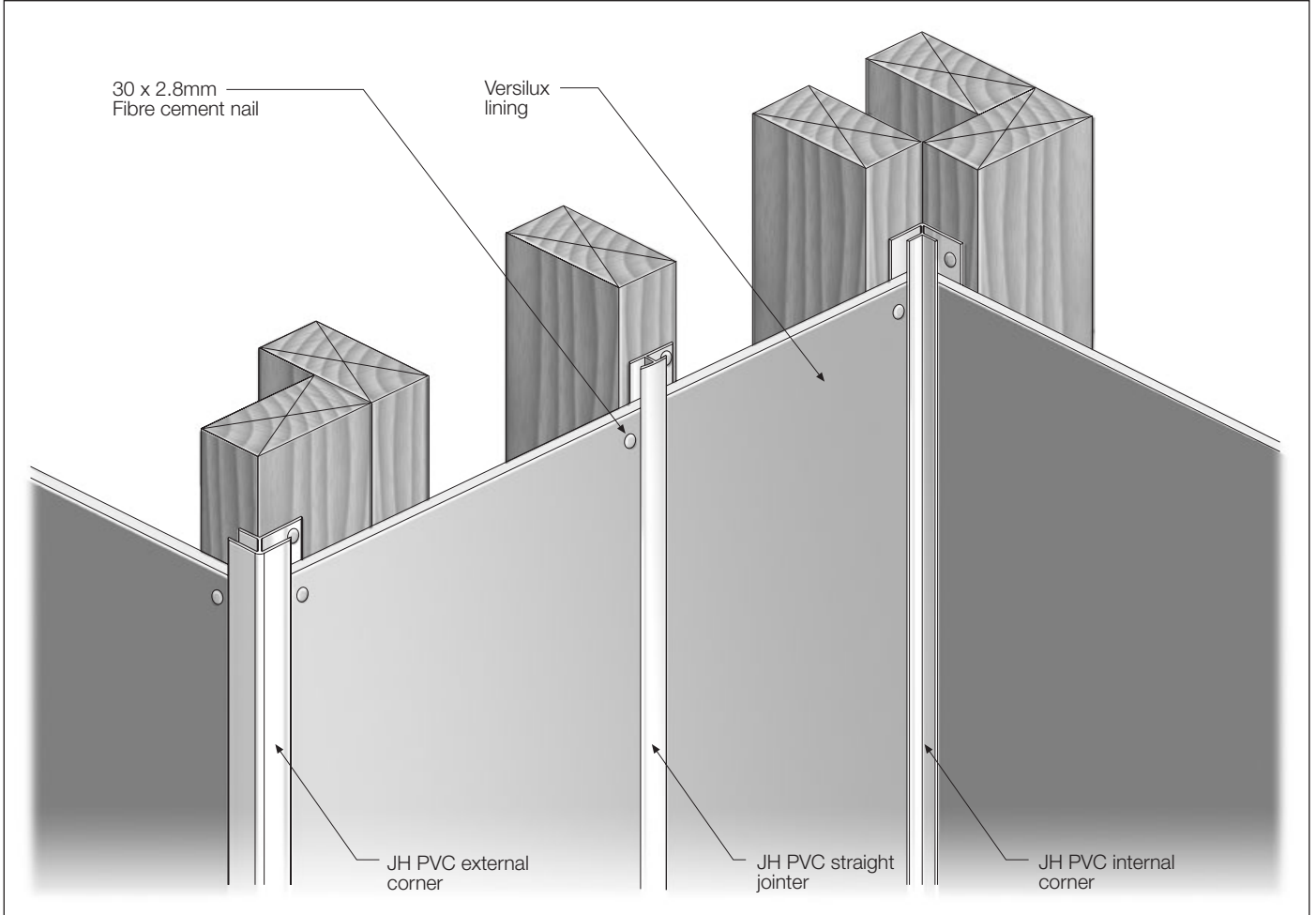


FIGURE 15 CORNER DETAILS

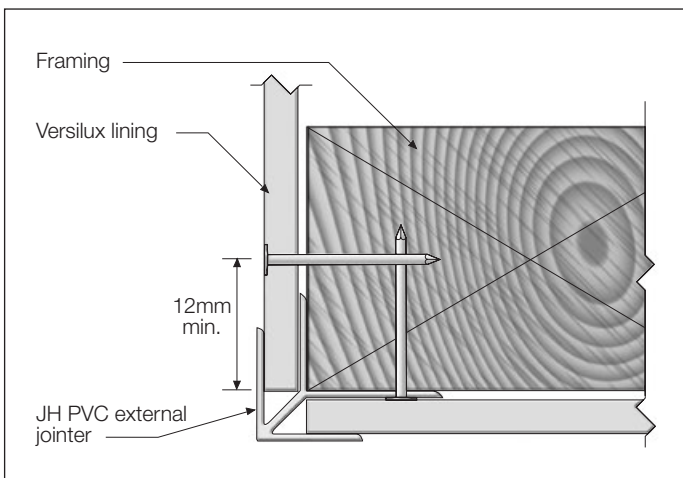


FIGURE 16 EXTERNAL CORNER

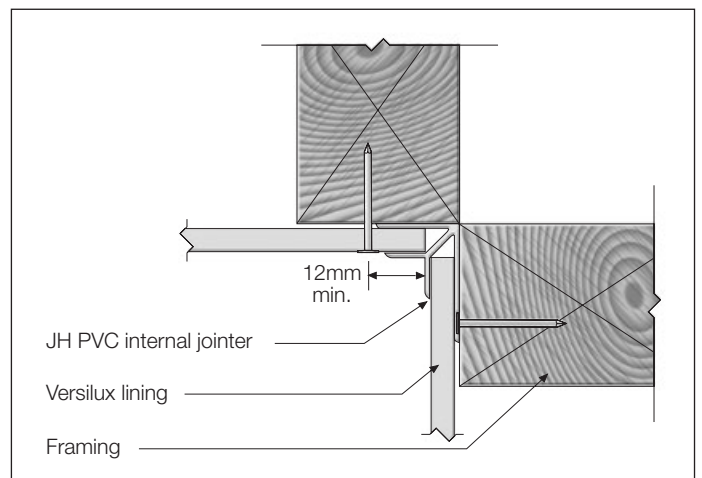


FIGURE 17 INTERNAL CORNER

6 PRODUCT INFORMATION

GENERAL

Versilux™ lining is a cellulose fibre reinforced cement building product.

The basic composition is Portland cement, ground sand, cellulose fibre and water.

Versilux™ lining is manufactured to AS/NZS 2908.2 'Cellulose-Cement Products Part 2: Flat Sheets' (ISO 8336 'Fibre Cement Flat Sheets'). Versilux™ lining is classified Type B, Category 3 in accordance with AS/NZS 2908.2 'Cellulose-Cement Products'.

For Safety Data Sheets (SDS) visit www.jameshardie.com.au or Ask James Hardie™ on 13 11 03.

PRODUCT MASS

The approximate product mass at equilibrium moisture content for 4.5mm, 6mm and 9mm Versilux™ lining is 6.2, 8.3 and 12.4 kg/m² respectively.

DURABILITY

Resistance to moisture/rotting

Versilux™ lining has demonstrated resistance to permanent moisture induced deterioration (rotting) by passing the following tests in accordance with AS/NZS2908.2:

- Water permeability (Clause 8.2.2)
- Warm water (Clause 8.2.4)
- Heat rain (Clause 6.5)
- Soak dry (Clause 8.2.5)

Resistance to termite attack

Based on testing completed by CSIRO Division of Forest Products and Ensis Australia James Hardie™ building products have demonstrated resistance to termite attack.

Resistance to fire

The Versilux™ lining is suitable where non-combustible materials are required in accordance with C1.9 of the Building Code of Australia (BCA).

James Hardie™ building products have been tested by CSIRO in accordance with AS/NZS 3837 and are classified as conforming to Group 1 material (highest and best result possible), with an average specific extinction area far lower than the permissible 250m²/kg, as referenced in Specification C1.10a of the Building Code of Australia (BCA).

FINISHES

James Hardie recommends Versilux™ lining be coated with a suitable paint finish. Refer to the paint manufacturer for paint suitability, mixing and application.

MAINTENANCE

James Hardie recommends the cleaning and maintenance of the Versilux™ lining be undertaken regularly as per the recommendations of the coating manufacturer. Joints must also be maintained and be free of dirt and grime.

WARRANTY

For Warranty information visit www.jameshardie.com.au or call James Hardie on 13 11 03.



**For information and advice
call 13 11 03 | jameshardie.com.au**

Australia February 2019

James Hardie 

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