



Installation Guide

Hardie™ Groove Lining

INTERIORS

Australia November 2024

Make sure your information is up to date.

When specifying or installing Hardie™ products, ensure you have the current installation guide. 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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1 Introduction

Hardie™ Groove Lining combines the appearance of traditional timber tongue and groove wall paneling with the benefits of modern fibre cement.

Because the baseboard is Hardie™ fibre cement, it's resistant to moisture, rotting, fire and termites when installed and maintained as directed.

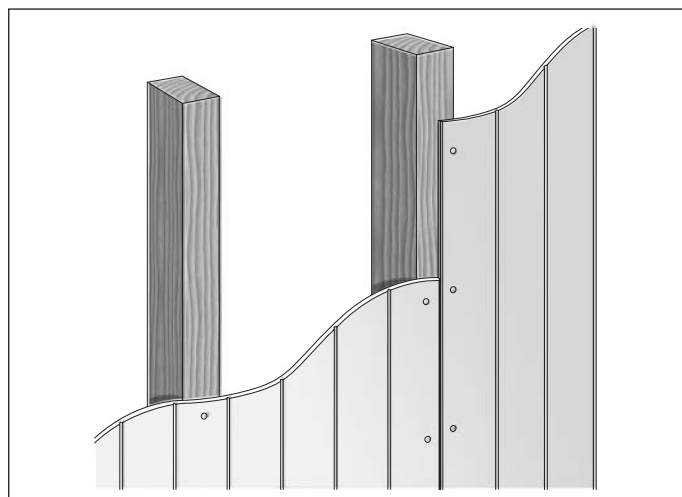
Hardie™ Groove Lining has decorative v-shaped grooves carved into the front face of the 7.5mm sheet, and is sanded, ready to be painted or stained in any colour.

Hardie™ Groove Lining can be fixed to the full height of the wall or at dado height to create a decorative, hard-wearing, impact resistant lining in hallways and to withstand the toughest treatment in family rooms, rumpus rooms, laundries and bathrooms.

Hardie™ Groove Lining is also ideal for use in ceilings, either to add interest to a modern design, or to create historical detail on a renovation project

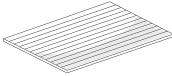
The main features of Hardie™ Groove Lining are:

- Durable internal lining sheet.
- Creates suitable surface for paint or stain finishes
- Sheet edges have a 'half groove' to conceal sheet joins.
- Reliable impact resistant decorative lining. Ideal for wall lining where walls are prone to damage.
- Joins won't pull or shift apart.
- Authentic v-shaped grooves replicate traditional look and style.

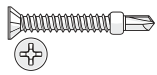
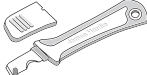
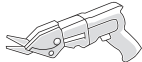
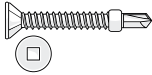
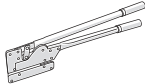
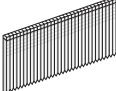


The specifier or other responsible party for the project must ensure the information and details in this guide are appropriate for the intended application and that specific design and detailing is undertaken for areas which fall outside the scope of this documentation.

COMPONENTS

Hardie™ Groove Cladding		Product Code	Length (mm)	Width (mm)	Pack Size
 HardieGroove™ lining is a 7.5mm thick v-grooved internal lining board with the look of timber and with the durability of fibre cement. Individual batten widths are 100mm.		400245	2700	1200	30
		404917	3000	1200	30

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

Product / Accessories / Tools			
COMPONENTS SUPPLIED BY JAMES HARDIE			
PRODUCT	DESCRIPTION	PRODUCT	DESCRIPTION
	Hardie™ Blade Saw Blade. 185mm diameter A poly-diamond blade for fast and clean cutting of Hardie™ fibre cement. 1 each. Part No. 300660		Hardie™ Drive Collated Screw 25mm long. A class 3 self-tapping wing-tipped screw for fastening to 0.5mm to 1.6mm BMT light gauge steel frames. Suitable for use in most auto feed screw guns. 1000 per box. Part No. 305980
	Villaboard™ Knife A score and snap knife designed to efficiently cut through fibre cement sheets ≤9mm thick. 12 per box. 305915.		Hardie™ Fibreshear Electric tool for cutting fibre cement sheets. 1 each. Part No. 300653
	Hardie™ Drive Screw 25mm long. A class 3 self-tapping wing-tipped screw for fastening to 0.5mm to 1.6mm BMT light gauge steel frames. 1000 per box. Part No. 305979		
COMPONENTS SUPPLIED BY JAMES HARDIE			
James Hardie recommends the following products for use in conjunction with its Hardie™ Groove 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 for fastening to timber.		Stud adhesive Use to fix Hardie™ Groove Lining to timber or metal framing (refer to figure 8).
	Underlay nails Use 25mm x 2.5mm ring shank underlay nails, for fastening to timber. Used where smaller head sized fasteners are desired.		Hand guillotine Guillotine for cutting fibre cement.
	ND 50mm Stainless Steel Brad Nail 14 gauge x 50mm ND 304 stainless steel nail for fixing panels to timber framing.		

2 Safe Working Practices

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

Hardie™ products contain sand, a source of respirable crystalline silica. **May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product.**

Intact fibre cement products are not expected to result in any adverse toxic effects. The hazard associated with fibre cement arises from the respirable crystalline silica present in dust generated by activities such as cutting, rebating, drilling, routing, sawing, crushing, or otherwise abrading fibre cement, and when cleaning up, disposing of or moving dust.

When doing any of these activities in a manner that generates dust, follow James Hardie instructions and best practices to reduce or limit the release of dust, warn others in the area and consider rotating personnel across the cutting task to further limit respirable silica exposure.

If using a dust mask or respirator, use an AS/NZS1716 P1 filter and refer to Australian/New Zealand Standard 1715:2009 Selection, Use and Maintenance of Respiratory Protective Equipment for more extensive guidance and more options for selecting respirators for workplaces. 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.**

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. Warn others in the area to avoid dust.
3. Consider rotating personnel across cutting tasks to further limit respirable silica exposures.
4. Use one of the following methods based on the required cutting rate:
 - Best** ▪ Villaboard™ Knife ▪ Hand guillotine ▪ Fibreshear
 - Better** ▪ Position the cutting station in a well-ventilated area. Use a dust reducing circular saw equipped with Hardie™ Blade Saw Blade or comparable fibre cement blade and well maintained M-class vacuum or higher with appropriate filter for capturing fine (respirable) dust. Wear a properly-fitted, approved dust mask or respirator (minimum P1).

CUTTING INDOORS

- Cut only using Villaboard™ Knife, hand guillotine or fibreshears (manual, electric or pneumatic).
- Position cutting station in a well-ventilated area.

DRILLING/OTHER MACHINING

When drilling or machining you should always wear a P1 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 or in a poorly ventilated area.
3. ALWAYS use a dust reducing circular saw equipped with a sawblade specifically designed to minimise dust creation when cutting fibre cement - preferably a sawblade that carries the Hardie™ Blade logo or one with at least equivalent performance - connected to a M class or higher vacuum.
4. NEVER dry sweep - Use wet suppression, or an M class vacuum or higher with appropriate filter.
5. NEVER use grinders.
6. ALWAYS follow tool manufacturers' safety recommendations.
7. ALWAYS wear a properly fitted, approved dust mask, P1 or higher

DUST MASKS AND RESPIRATORS

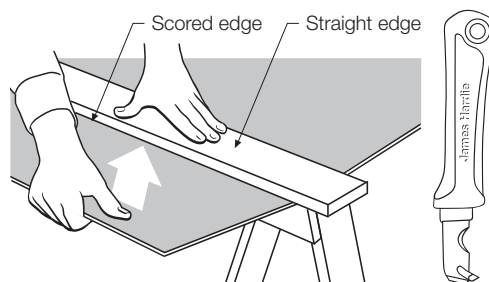
As a minimum, an AS/NZS1716 P1 respirator must be used when doing any activity that may create dust. For more extensive guidance and options for selecting respirators for workplaces please refer to Australian/New Zealand Standard 1715:2009 "Selection, Use and Maintenance of Respiratory Protective Equipment".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

WORKING INSTRUCTIONS

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

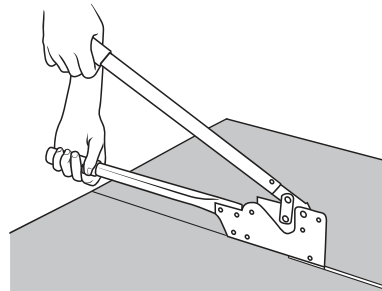
Score and snap

Score and snap is a fast and efficient method of cutting 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.



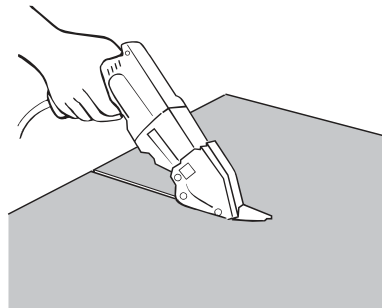
Hand guillotine

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



Fibreshear

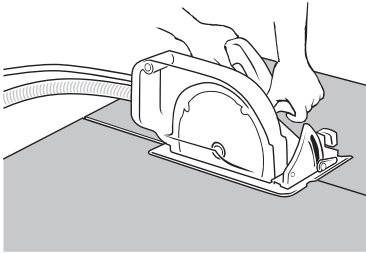
An electrically powered, fast, clean and effortless way of cutting Hardie™ building products, especially around curves such as archways. Make fibreshear cut on the 'off-cut' side of the line to allow for the thickness of the shear.



3 Framing

Hardie™ Blade Saw Blade

The Hardie™ Blade Saw Blade used with a dust-reducing saw connected to a M class or higher vacuum extraction allows for fast, clean cutting of 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.



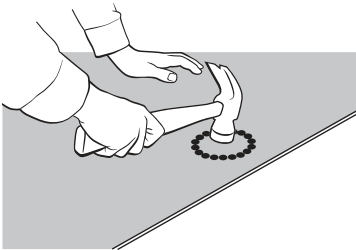
HOLE-FORMING

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.



STORAGE AND HANDLING

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

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.

3.1 GENERAL

Hardie™ Groove 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.

NOTE

Hardie™ Groove Lining must not be used in shower areas.

3.2 TIMBER

Use only seasoned timber. Unseasoned timber must not be used as it is prone to shrinkage and can cause Hardie™ Groove 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 12.

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

Reference AS1684.2 'Residential Timber Framed Construction'.

3.3 STEEL

Use of steel framing must be in accordance with NASH standard for Residential and Low-Rise Steel Framing Part 1: Design Criteria and the framing manufactures specifications. Framing members must have a base metal thickness (BMT) between 0.55 to 1.6mm. The steel framing must have the appropriate level of durability required to prevent corrosion. Studs must not be less than 38mm wide at butt joints, double studs may be used.

3.4 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 sheeting.



FIGURE 1 FRAME STRAIGHTNESS

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

4 Installation

4.1 SHEET LAYOUT

Hardie™ Groove Lining is usually fixed vertically. Sheet joints must coincide with the centre line of the framing member.

The long edges of the sheet have a unique half groove, which achieves a concealed joint.

NOTE

Where fixing half height sheets as a dado wall, provide a row of noggings to allow for fastening of the sheet edge.

4.2 FASTENERS

TIMBER FRAME FASTENER SELECTION

30mm x 2.8mm Galvanised FC

ND50 Brad Nails

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

STEEL FRAME FASTENER SELECTION

0.5mm – 1.6mm BMT

Hardie™ Drive screw 25mm

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.

NOTE

Do not place nails or screws within 100mm of the adhesive daubs.

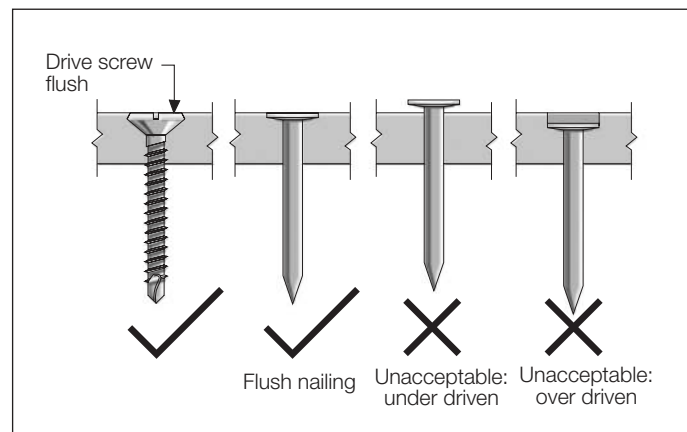


FIGURE 2 FASTENER DEPTH

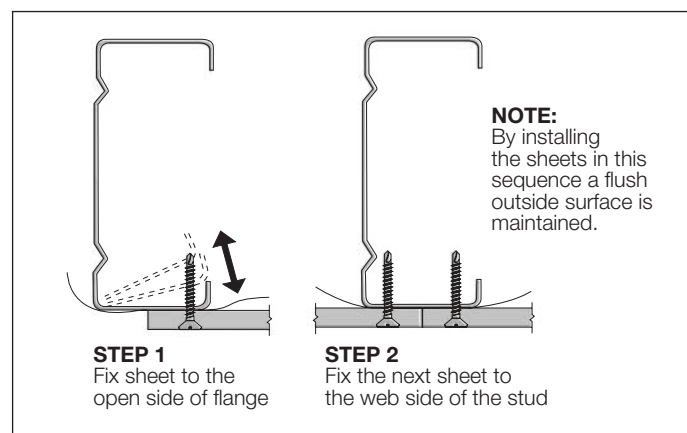


FIGURE 3 SCREW FASTENING

4.3 FIXING TO WALLS

Step 1

Place 7.5mm 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 druminess. For fastener spacings refer to Figures 6, 7 and 8 for full height and dado height walls respectively.



FIGURE 5 SHEET FIXING

Final step

Fix remaining sheets in similar sequence.

4.4 FULL SHEET FIXING

When fixing full sheets of Hardie™ Groove Lining to framed walls, fasten sheets as shown in Figure 6 and 7. Sheet butt joints must coincide with the centre line of framing members.

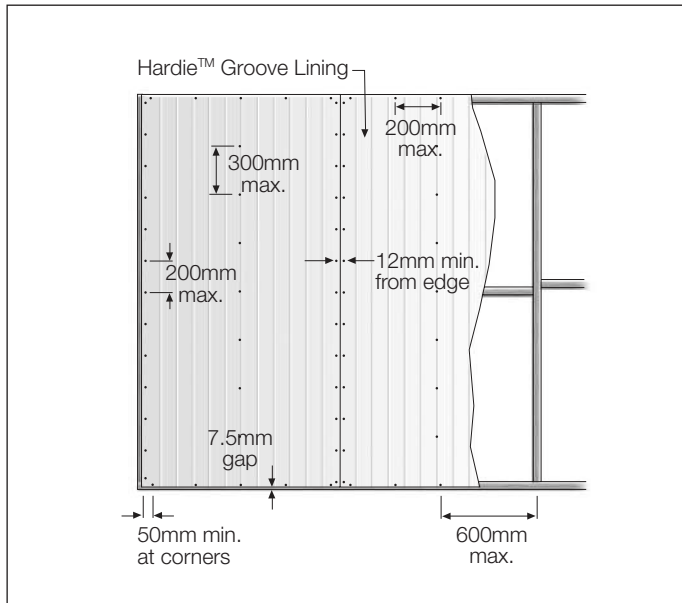


FIGURE 6 FULL SHEET FIXING USING FC NAILS

NOTE

To reduce the number of visible fixings the centre of the sheet can be fixed with adhesive. See Figure 8 for details.

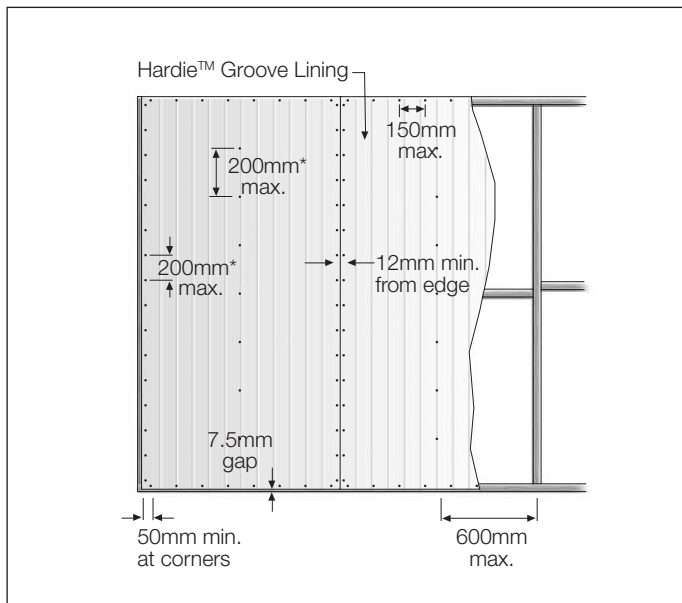


FIGURE 7 FULL SHEET FIXING USING BRAD NAILS^

NOTES

* On areas with a wind classification of N4/C2 or greater, the fastener spacing must be reduced to 150mm and the stud spacing to 450mm centres.

^ Not suitable for buildings with dominant openings in cyclonic regions. Please contact James Hardie on 13 11 03 for further information.

4.5 DADO HEIGHT FIXING

Hardie™ Groove Lining may be installed to half the wall height to create a dado appearance. Ensure top of sheet is fixed to an in-line row of noggings as shown in Figure 8.

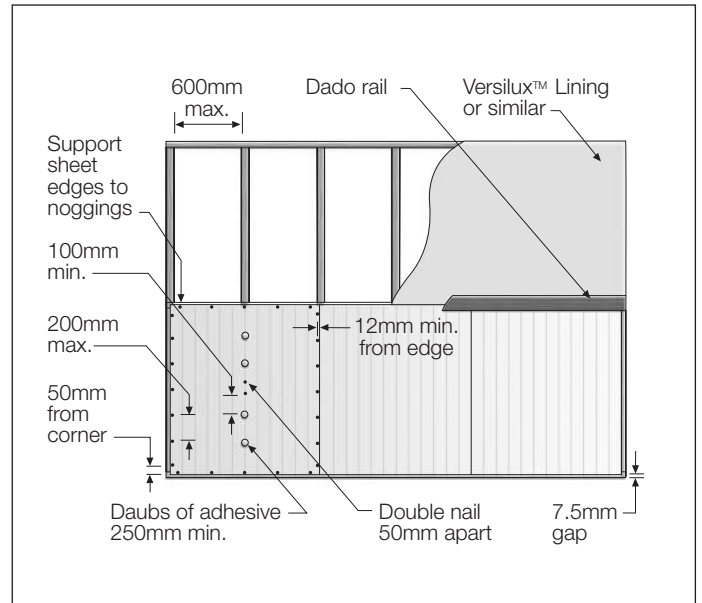


FIGURE 8 DADO HEIGHT FIXING

4.6 FIXING TO CEILING

In ceiling applications Hardie™ Groove Lining can be fixed either parallel or perpendicular to framing. See Figures 9 and 10 respectively.

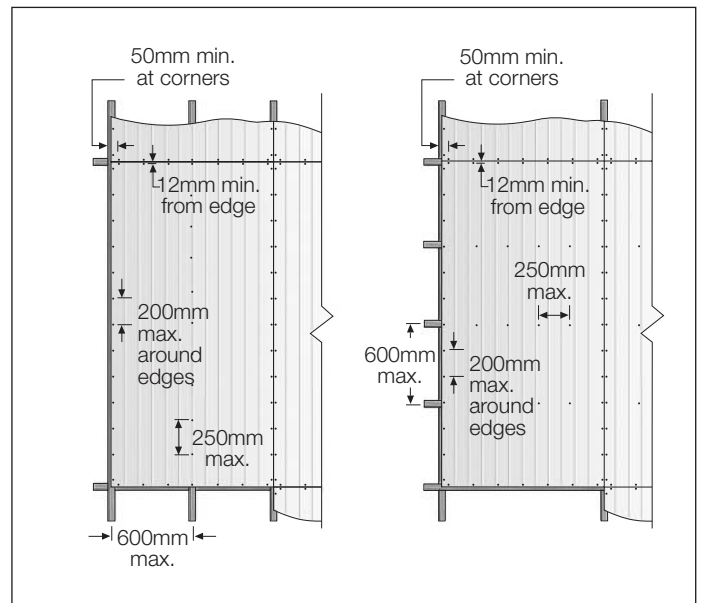


FIGURE 9 ALONG JOISTS

FIGURE 10 ACROSS JOISTS

NOTES

1. Fastener fixing method is shown, however, fastener/adhesive fixing method may also be used. See Figure 8.
2. In ceiling applications do not fix sheets to the bottom chord of roof russes. Instead, fix to timber battens or metal furring channels.

5 Jointing and Corners

5.1 BUTT JOINTS

Hardie™ Groove Lining is butt jointed by joining two factory finished half groove sheet edges on stud. This creates a grooved look consistent with the rest of the sheet. See Figures 11 and 12.

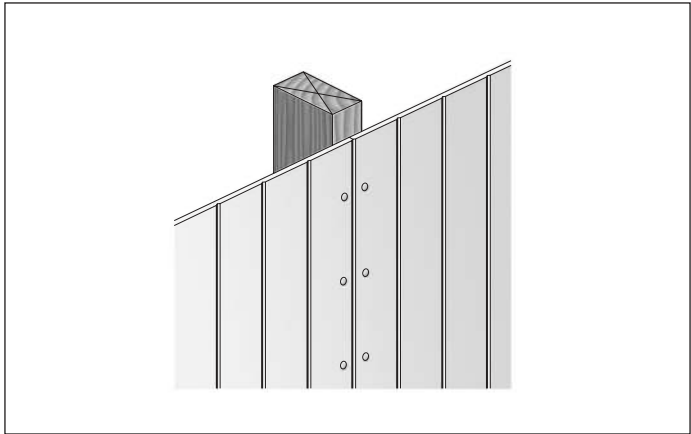


FIGURE 11 BUTT JOINT

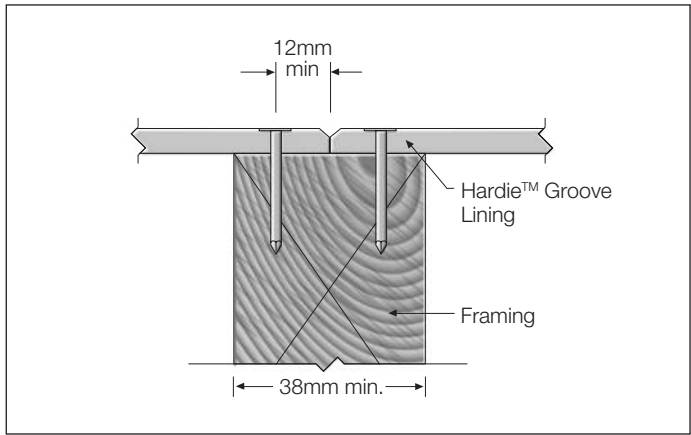


FIGURE 12 BUTT JOINT

5.2 CORNERS

External and internal corners are created by butting sheet edges as shown, see Figures 13 to 15. If sheets need to be trimmed, for best appearance place the cut sheet edge into corner first ensuring that it is hidden by the overlapping sheet. Alternatively a suitable timber moulding may be used.

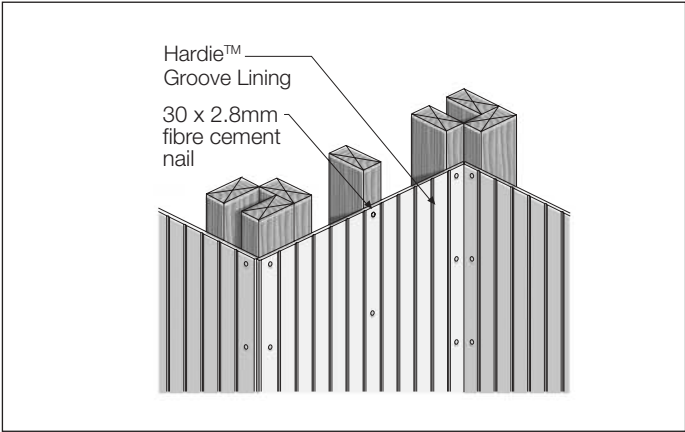


FIGURE 13 CORNER DETAILS

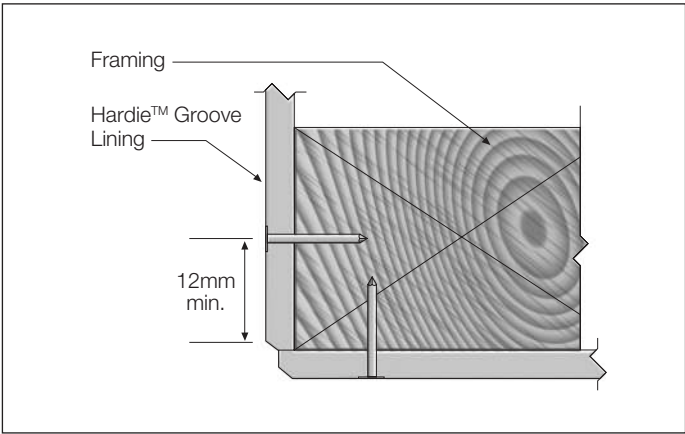


FIGURE 14 EXTERNAL CORNER

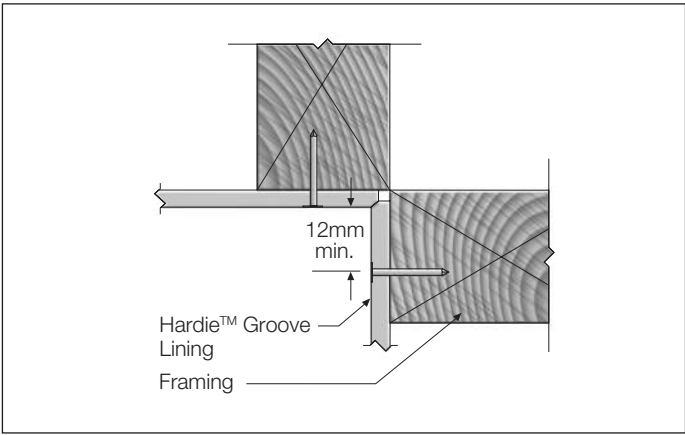


FIGURE 15 INTERNAL CORNER

6 Product Information

6.1 GENERAL

The basic composition of Hardie™ building products is Portland cement, ground sand, cellulose fibre, water and proprietary additives.

Hardie™ building products are manufactured AS/NZS 2908.2 'Cellulose-Cement Products-Flat Sheet'. These are also compliant with equivalent standard ISO 8336 'Fibre-cement flat sheets - Product specification and test methods'. For product classification refer to the relevant Physical Properties Data Sheet.

6.2 PRODUCT MASS

Based on equilibrium moisture content the approximate mass of Hardie™ Groove Lining is 10.44kg/m².

6.3 DURABILITY

Resistance to moisture/rotting

Hardie™ Groove Lining has demonstrated resistance to permanent moisture induced deterioration (rotting) by passing the following tests in accordance with AS/NZS 2908.2:

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

Resistance to fire

Hardie™ Groove Lining is suitable where non-combustible materials are required in accordance with C2D10 and H3D2 of the National Construction Code (NCC) Vol 1 and 2 respectively.

Fibre cement products manufactured by James Hardie 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 C2D11(1) of the National Construction Code (NCC).

Resistance to termite attack

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

6.4 FINISHES

Once Hardie™ Groove Lining has been fixed in place, fill over all fixings with a sandable finishing compound.

When dry, lightly sand smooth and finish with a suitable paint system. Refer to the paint manufacturer for paint suitability, mixing and application.

If staining Hardie™ Groove Lining, care must be taken to ensure the desired finish is achieved. It is advisable to test the stain on an off-cut, paying particular attention to fasteners and filled areas.

6.5 MAINTENANCE

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

Notes



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

Australia November 2024



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