



HardiePanel® Cladding

Installation Instructions



Simple. Reliable. Durable.



The product warranty is only valid when the panels are stocked, maintained and installed according to the installation instructions and local regulations.

## 1. OVERVIEW

HardiePanel® cladding is a nominally 8 mm thick panel intended as external cladding for residential and commercial buildings in both new build and renovation. HardiePanel® cladding can be used in a ventilated construction fixed to timber frame, steel frame or masonry walls using corrosion resistant screws or nails. HardiePanel® cladding may be installed on vertical wall applications only, with or without insulation. Do not install HardiePanel® cladding, such that they may remain in contact with standing water.

## 2. HANDLING AND STORAGE



Store flat and keep dry prior to installation. In storage a maximum of 4 pallets can be put on top of each other. Keep away from weather influences. Products stored outside should be covered with a waterproof covering in addition to the product wrapper to avoid contact with water and dust. Wet products cannot be installed. Installing wet siding will result in shrinkage at butt joints. James Hardie isn't responsible for damage caused by improper storage and handling of the product.



Carry panels on edge by 2-3 persons.

### 3. MATERIALS

#### 3.1. COMPOSITION

HardiePanel® cladding is made of Portland cement, milled sand, cellulose fibres, water and selected additives.

#### 3.2. CHARACTERISTICS

##### 3.2.1. Dimensions

The panels are supplied square and straight according to EN12467 – Level I.

HardiePanel® vertical siding				
Length	Width	Thickness	Weight	Density
3050 mm	1220 mm	8 mm	11 kg/m <sup>2</sup>	1300 kg/m <sup>3</sup>

##### 3.2.2. Textures

HardiePanel® cladding is available in 4 textures:



Cedar



Sierra8



Stucco (render)



Smooth

##### 3.2.3. Finishes

HardiePanel® cladding is available in 2 finishes:

**PrimePlus®** : to be painted on site in any desired colour with 100% acrylic paint within 90 days after installation.

**ColorPlus® Technology** : provides a quality system for multi-coat, factory-applied coating and curing. Available in 21 different colours.

#### 3.3. QUALITY & CERTIFICATION

The production of HardiePanel® cladding is audited 4 times a year by external auditors like BBA. James Hardie complies with the provisions set out in the Construction Products Directive (CPD 89/106/EU). HardiePanel® cladding product specifications and classifications comply with EN 12467:2004 and 13501-1:2002.

##### 3.3.1 Protective Film

HardiePanel® cladding with ColorPlus® Technology is equipped with a PE film for protection of the surface during transportation and processing. PE is an environmentally friendly polymer, which can be recycled or disposed of by deposition or burning.

*Finishing :*

*If boards are cut to size on site, cutting edges should be bevelled with sand paper. After trimming the edges must be sealed with Touch-up paint prior to installation with a small artist brush. Wipe off any excess from the front face immediately.*

#### 3.4. SUB-FRAME

HardiePanel® cladding can be installed on timber sub-frames.

**Note:** Cladding with HardiePanel® panels must always be carried out as a ventilated façade with min 20 mm distance between the cladding and the rear lining (insulation material). However, in special situations (e.g. high rise buildings) local regulations may demand a larger ventilation gap. Inlet and outlet openings must have a cross section of at least 100 cm<sup>2</sup>/m.

## 4. ANCILLARY PRODUCTS

Accessories / tools supplied by James Hardie	
	<p><b>EPDM Tape</b> To cover vertical joints. Rolls of 20 m, widths of 60, 80, 100, and 120mm.</p>
	<p><b>MetalTrim Horizontal Drip Profile</b> To cover all horizontal joints. Lengths of 3 m.</p>
	<p><b>ColorPlus® Touch-up Paint.</b> To touch up cut edges of <b>HardiePanel®</b> cladding with ColorPlus® Technology.</p>
	<p><b>HardiePanel® screws</b> With (un)coloured head <math>\varnothing</math> 12 mm. A2 austenitic steel. 4.8 x 38 mm. The screws have a sharp point and a fast cutting thread, which secures a firm fixing with a high pull out value.</p>
	<p><b>HardieBlade® saw blade</b> 160, 190, 254 or 310 mm diamant tipped saw blade to reduce dust production and decrease wear.</p>

Accessories / tools not supplied by James Hardie
<p><b>Waterproof membrane</b> The installation of a breather membrane acting as vapour-permeable water-barrier will be necessary for timber frame buildings or block walls where the wall is not considered waterproof. This barrier must meet the requirements of BS EN 13859:2005.</p>
<p><b>Wooden battens for new build wood frame construction and renovation:</b></p> <ul style="list-style-type: none"> <li>• Grade C18 minimum</li> <li>• 25 x 50 mm minimum</li> <li>• 25 x 75 mm minimum on joints</li> </ul>
<p><b>Wooden battens for new build brick walls:</b></p> <ul style="list-style-type: none"> <li>• Grade C18 minimum</li> <li>• 50 x 50 mm minimum</li> <li>• 50 x 75 mm minimum on joints</li> </ul>
<p><b>Nails:</b> Nails of 2.95 x 50 mm of preferably stainless steel. Diameter head : 6.5 mm</p>
<p><b>Ventilation grille</b> Preferably in stainless steel, 25 mm deep or more (ventilation gap)</p>
<p><b>Jig saw</b> for cut outs</p>
<p><b>Saw equipped with HardieBlade® saw blade and HEPA extraction</b> To cut the panels to size.</p>

## 5. CONSTRUCTION

James Hardie does not specify the fastening requirements for the framing to the building and will not take the liability of such structural elements. The attachment of the framing should be incorporated into the overall building design and should be approved by the responsible parties.

### 5.1. STRUCTURE

The structural wall to which **HardiePanel®** cladding is to be fixed, must be of sufficient strength and stiffness to satisfy the requirements of the local building regulations in its own right under the design dead and live loads. The wall may be of masonry or timber framed construction.

### 5.2. WATERPROOF MEMBRANE

A waterproof membrane is required if the substrate is not waterproof. Fix a waterproof membrane, as described in section 4, to the outer face of the structural wall, laid along the wall, with an overlap between the layers of membrane of at least 150 mm. Ensure the waterproof membrane is lapped to drain any water to the outside of the building. James Hardie will assume no responsibility for water infiltration.

## 6. FITTING HARDIEPANEL® CLADDING – GENERAL

### 6.1. PREPARING THE FRAME

The timber battens act as a ventilation cavity between HardiePanel® cladding and the substrate. The top and base of the frame must be finished with a ventilation grille.

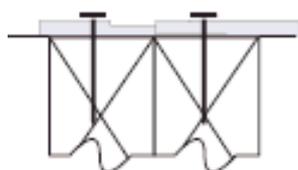
### 6.2. FIXING HARDIEPANEL® CLADDING

Prior to installation check if the products are fit for purpose and in accordance with specifications laid down in this document. HardiePanel® cladding is fixed as per the drawing section. For this installation method the allowable wind load pressures can be obtained in Annex 1.

*Do not use aluminum fasteners, staples, or clipped head nails.*

#### PNEUMATIC FASTENING

James Hardie® cladding can also be hand nailed or fastened with a pneumatic tool or Impulse type nail guns. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. Drive under driven nails snug with a smooth faced hammer.



Recommendation:  
When installing Sierra8,  
provide a double stud at  
panel joints to avoid nailing  
through grooves.

### 6.3 INSTALLING WITH EXTERNAL INSULATION.

The addition of insulation to the external wall construction requires a different application. It is unlikely that standard size timber battens fixed directly to the wall will provide sufficient room for the required thickness of insulation and rainscreen-ventilated cavity.

Therefore the timber battens should be attached to a metal bracket of the appropriate size to allow for insulation and air gap. The details given in this document are typical and can be applied to a number of preparatory systems. It is the designer and installers responsibility to ensure that the requirements of the specific system employed are followed. James Hardie takes no responsibility in the design or application of said preparatory systems.

The brackets and timber battens should be installed in accordance with the manufacturer's instruction. The battens are fitted vertically at 400 mm or 600 mm centres. As with standard timber battens it is important to ensure that the framework is flat in all planes and vertical.

Similarly ensure that the ground clearance required by the local building regulations is maintained. It should be a minimum of 150 mm. The battens must be securely fixed to the brackets and in turn the brackets to the structural wall as they transfer the wind load applied to HardiePanel® cladding to the structure. Ensure that the batten selection and fixing meets the local building regulations. Drawings are available at [www.jameshardie.co.uk](http://www.jameshardie.co.uk)

### 6.4. SCREWS ON WOODEN SUB-CONSTRUCTIONS – GENERAL

Façade boards are generally installed in a vertical position on a vertical sub-structure. It is however possible to install the boards horizontally. The guidelines for fixing are identical, which means the edge distances, corner distances etc. follow the sub-structure. HardiePanel® cladding doesn't require pre-drilling. Panels should be placed against the frame with the vertical edges slightly back from the batten centre line.

Screws should be applied by hand using the correct Torx 20 driver bit. Moderate pressure should be applied to the fixing. The head of the fixing should be driven flush with the surface of the board. Do not over tighten at this may put undue stress on the board. Do not stack panels on top of each another up the façade. Panels can be fixed with an 8mm gap between all adjoining boards; they can however also be butt jointed. The James Hardie® drip profile can be installed at the horizontal joint to protect the joint. Counter flashing shall be installed per the manufacturer's instructions.

### 6.7. CLEARANCES

Install HardiePanel® cladding in compliance with local building regulations requirements for clearance between the bottom edge of the cladding and the adjacent finished grade. This is typically 150mm.

Maintain a minimum 50mm clearance between HardiePanel® cladding and paths, steps and driveways.

## 7. FABRICATION

### 7.1. SAFETY

As for all other building materials safety precautions must be taken into account. Cutting and drilling are subject to dust development, and proper precautions must be taken. Dust from fibre cement boards is characterized as mineral dust and EU-approved respirators can be used in conjunction with following cutting practices to further reduce dust exposures.

#### ⚠ Cutting instructions

Cutting should always be done outdoors

1. Position cutting station so that wind will blow dust away from user and others in working area
  2. Use one of the following methods based on the required cutting rate:
    - Preferred Cutting Method**
      - Dust reducing circular saw equipped with a HardieBlade® saw blade and HEPA vacuum extraction
    - Acceptable Cutting Method**
      - Dust reducing circular saw with a HardieBlade® saw blade (only use for low to moderate cutting)
    - Minimum Cutting Method (for low to moderate cutting only)**
      - Hand Saw with hardened teeth
- NEVER use a power saw indoors
  - NEVER use a circular saw blade that does not carry the HardieBlade® saw blade trademark
  - ALWAYS follow tool manufacturer's safety recommendations
  - NEVER use a grinder or continuous rim diamond blade for cutting as they produce too much dust.

When cleaning up dust and debris, NEVER dry sweep as it may excite silica dust particles into the user's breathing area. Instead, damp debris down with a fine mist to suppress dust during sweeping, or use a HEPA vacuum to collect particles.

#### Sanding/Rebating/Drilling/Other Machining

If sanding, rebating, drilling, or other machining is necessary, you should always wear a dust respirator in compliance with local requirements (e.g., EN 149, FFP1) and warn others in the immediate area.

*Important Note: For maximum protection (lowest respirable dust production), James Hardie recommends always using "Preferred"- level cutting methods where feasible. HSE approved respirators can be used in conjunction with above cutting practices to further reduce dust exposures. 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.*

For further information, refer to our Material Safety Data Sheet available at [www.jameshardie.co.uk](http://www.jameshardie.co.uk).

### 7.2 CUTTING

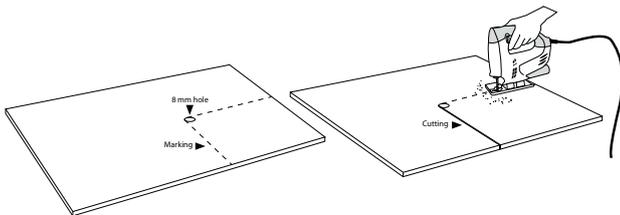
Trimming the panels on site: use normal slow or fast running hand tools or stationary equipment equipped with a HardieBlade® diamond tipped saw blade. When using fast running tools dust exhaustion must be employed. All HardiePanel® boards may be cut with a circular saw equipped with a suitable HardieBlade® saw blade or a jigsaw equipped with a diamond or TC tipped blade. Sharp edges are made with fast running diamond tipped tools.

*NOTE: When using hand power tools the boards should be cut with the rear face uppermost. When using stationary saw equipment the boards should be cut front-side up (the saw blade must always attack the board from the front side). The periphery speed of the circular saw should be 40-50 m/s. Cutting depth 10-15 mm beyond the board. Other details such as RPM depend on the diameter blade used.*

Typical details for HardieBlade® saw blade

Diameter	Ø160	Ø190	Ø254	Ø310
Width mm	4 mm	4 mm	4 mm	4 mm
Bore size	20 mm	30 mm	30 mm	30 mm
Rpm	4800	4000	3000	2800

Cut-outs : use a jigsaw or a hole saw equipped with a hard metal, bi-metal or diamond tipped blade. A min 8mm hole is to be drilled at the inner corner to avoid cracking of the board.



### 7.3 FINISHING

Cutting edges should be bevelled with sand paper. After trimming (and/or sanding) the edges must be sealed with touch-up paint prior to installation with a small artist brush. Wipe of any excess from the front face immediately.

#### 7.3.1 HardiePanel® PrimePlus® cladding

DO NOT use stain on James Hardie® products.

HardiePanel® Primeplus® cladding must be painted within 90 days after installation. 100% acrylic topcoats are recommended. Do not paint when damp or wet as this will result in the paint not bonding to the product. For application rates refer to paint manufacturers specifications.

Spray application is not recommended.

## 8. WALL PENETRATIONS

When a penetration in the wall is required, for a pipe or tap for example, form a hole in the panel using a carbide tipped hole saw. Make the hole approx. 8 mm larger than the diameter of the pipe. Seal between the fitting and the edge of the hole with an exterior quality sealant. If the space between the fitting and the hole is too wide, use a polyethylene foam-backing rod to fill the major part of the gap. The remaining gap should be filled with sealant.

## 9. LOAD BEARING

HardiePanel® cladding is not intended as a load bearing or shear element in the wall construction. Items required to be attached to the wall should be supported directly by connections to the structural sheathing and/or framing members, not attached to the siding as the primary load-bearing elements.

## 10. CLEANING OF FACADES

### 10.1 ANNUAL INSPECTION

Environmental impacts may influence the visual appearance of the façade cladding. Therefore, an annual inspection of the ventilation gaps, joints and fixings is a good idea. Detection and repair of possible damages secure a prolonged lifetime for the façade cladding.

### 10.2 IMPACT FROM NATURE

The weather and nearby green plants may affect the appearance of the façade cladding. Pollution, dust and leaves from trees, bushes and flowers do all together have an impact on the façade. HardiePanel® cladding is manufactured from weatherresistant raw materials and will not be attacked by algae, rot and dry rot.

### 10.3 CLEANING

HardiePanel® cladding can be cleaned with cold or lukewarm water from a garden hose. Do not use high pressure power washers as this may damage the coating. If necessary add a mild householdcleaning agent not containing solvents. Always start from the top with well-defined areas. Rinse with plenty of clean water until the façade is perfectly clean.

Before cleaning full scale, it is recommended to test the chosen cleaning method on a smaller area to make sure it answers its purpose.

### 10.4 MOSS & ALGAE

Moss and algae growth can be removed with common agents available on the market. Examples are hypochlorite that has no long term effect or benza-lconiumchloride 2.5% active that has a longterm effect preventing new growth. After wetting the façade with clean water, the agent is applied according to the supplier's instructions. Do not leave the agent to dry completely. Rinse with lots of clean water.

### 10.5 HIGH PRESSURE CLEANING

Do not use high pressure cleaning systems as they may damage the ColorPlus® coating.

#### HEALTH WARNING – AVOID BREATHING DUST

James Hardie products contain crystalline silica. This mineral is found everywhere in the world – often in the form of sand - and, therefore, commonly used in many construction products (for example brick, concrete, glass wool and abrasives). The mineral itself is inert, but certain building practices such as drilling, high speed cutting and abrading can release fine particulate dust which may constitute a health hazard.

Excessive or protracted inhalation of fine particle silica dust can lead to a lung disease called silicosis. There is also some evidence that it may increase the risk of lung cancer if inhaled for prolonged periods. Smoking may also exacerbate this risk. Like smoking, the risk from fine particle silica dust is time and concentration dependent.

#### CONTROL:

To suppress or to reduce excessive inhalation of fine particle silica dust the following steps should be taken to protect operatives who work with products containing silica dust:

- During fabrication operate outdoors or in well ventilated space in a separate area if available or away and down-wind from other operatives;
- Use low speed, low dust cutting tools – Score-and snap-knife, HardieGuillotine, HardieBlade fitted to a circular saw connected to a dust extraction HEPA filter vacuum cleaner (see James Hardie tools).
- When cutting, drilling or abrading always wear a FFP2/3 dust control or full face mask adjusted and fitted in conformity with regulatory recommendations and affixed with CE marking and/or fully certified to the relevant EN standards if applicable;
- Keep the working environment clean and remove debris as soon as possible; and
- At the end of the operation remove dust from clothes, tools and work area with a HEPA filter vacuum cleaner or damp with water to suppress the dust before sweeping.

Remember, James Hardie products are no more dangerous than many other building materials containing crystalline silica sand. We hope through this information to engage in effective education of the construction industry and build upon the requirements of national health and safety regulations.

For more information, see our installation instructions and MSDS available on [www.jameshardieeu.com](http://www.jameshardieeu.com) or call James Hardie.

#### COMPANY INFORMATION:

James Hardie Europe B.V.  
Gustav Mahlerlaan 42  
1082 MC Amsterdam  
The Netherlands  
Customer Service Tel: 0800 068 3103  
Customer Service Fax: 0800 917 5424

## ANNEX 1

### FIXING DETAILS

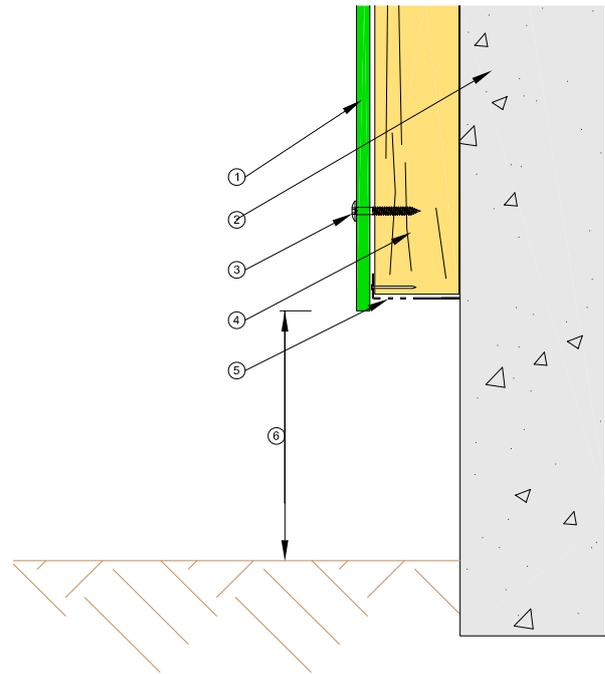
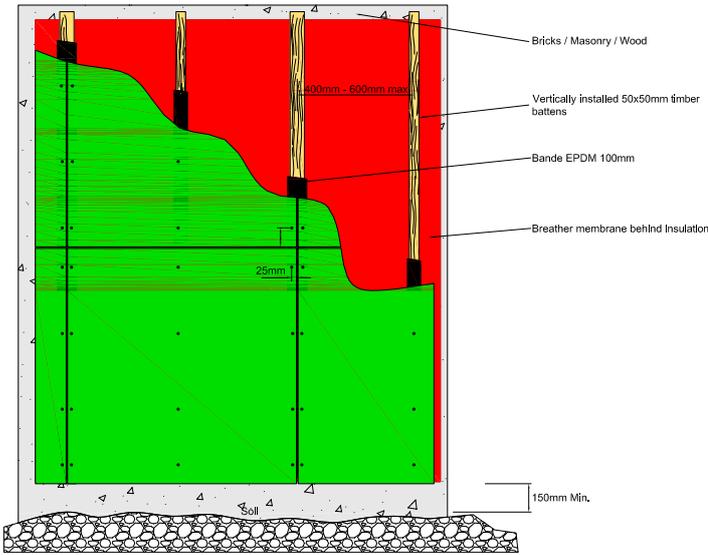
Panel width mm	Fixing	Wind load Pascal	Max support distance mm	Max fixing distance along edges mm	Max fixing distance board middle mm	Edge distance	
						Side mm	Top mm
1200	Screw 4.8 x 38mm, Ø 12 mm	920	600	600	600	20	50
		1440	600	400	400		
		1600	400	600	600		
		1600	400	400	400		
1200	Nail 2.95 x 50 mm, Ø 6.5 mm	589	600	400	400	20	50
		1079	400	400	400		

#### Disclaimer

The information contained in this publication and otherwise supplied to users of **HardiePanel®** products is based on James Hardie's general experience, best knowledge and belief. However because of factors that fall beyond James Hardie's knowledge and control, which can affect the use of the products, no warranty is given or implied with respect to such information. James Hardie's policy is one of continuous improvement. James Hardie therefore reserves the right to alter specifications at any time and without notice.

(for renovation construction see drawings on [www.jameshardie.co.uk](http://www.jameshardie.co.uk))



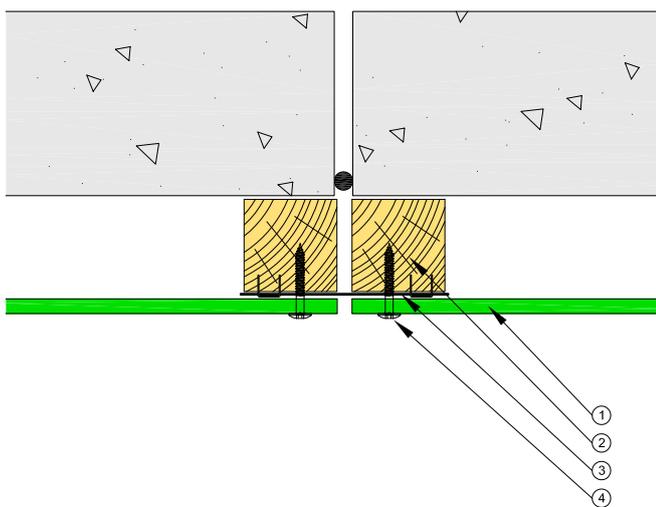


LEGEND

- |                   |                                     |
|-------------------|-------------------------------------|
| 1. HardiePanel®   | 4. 50mm x 50mm timber batten        |
| 2. Masonry wall   | 5. HardiePanel® ventilation profile |
| 3. T20 Torx Screw | 6. 150mm Min.                       |

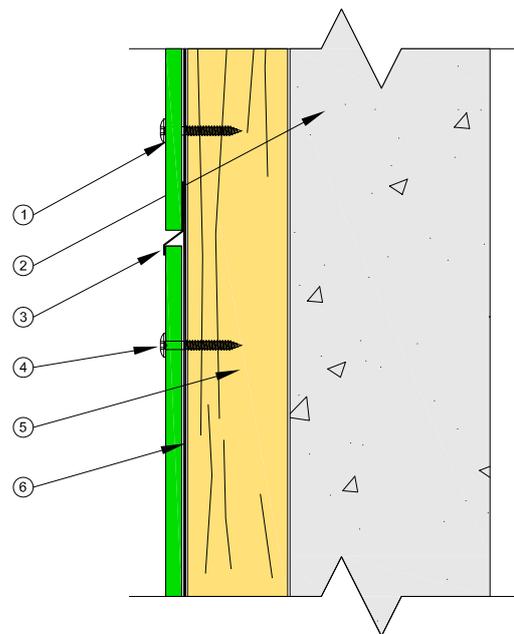
HORIZONTAL SECTION - MOVEMENT JOINT

HORIZONTAL Z-PROFILE



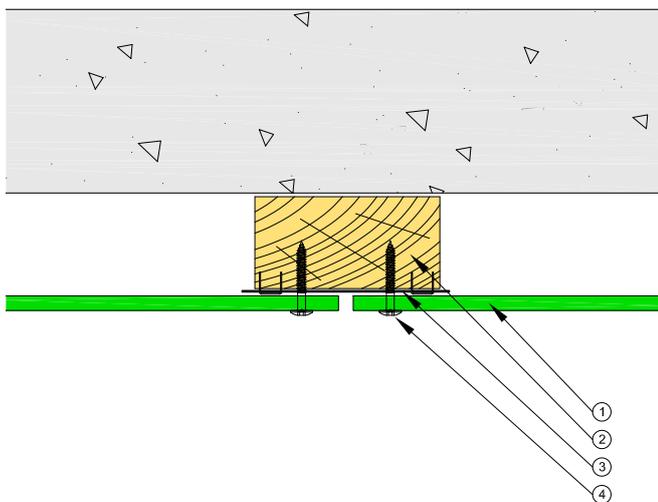
LEGEND

- |                              |                                  |
|------------------------------|----------------------------------|
| 1. HardiePanel®              | 3. EPDM gasket stapled to batten |
| 2. 50mm x 25mm timber batten | 4. T20 Torx Screw                |



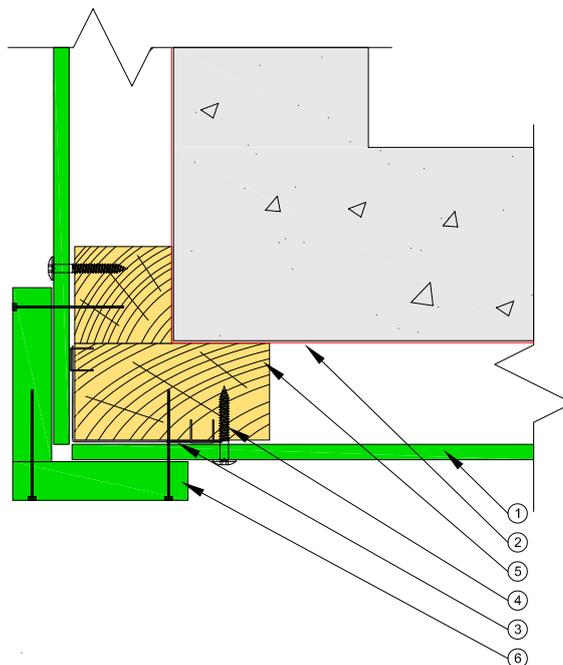
LEGEND

- |                         |                                  |
|-------------------------|----------------------------------|
| 1. HardiePanel®         | 5. 50mm x 50mm timber batten     |
| 2. Masonry wall         | 6. EPDM gasket stapled to batten |
| 3. Horizontal Z-profile |                                  |
| 4. T20 Torx Screw       |                                  |



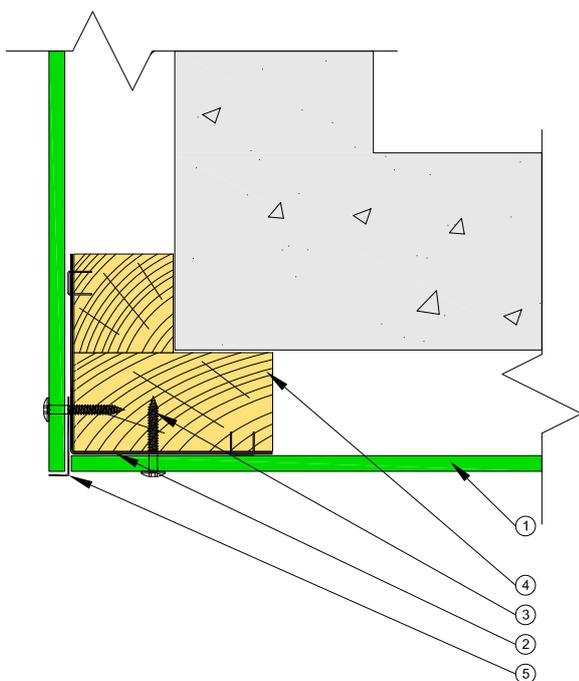
LEGEND

- 1. HardiePanel®
- 2. 50mm x 25mm timber batten
- 3. EPDM gasket stapled to batten
- 4. T20 Torx Screw



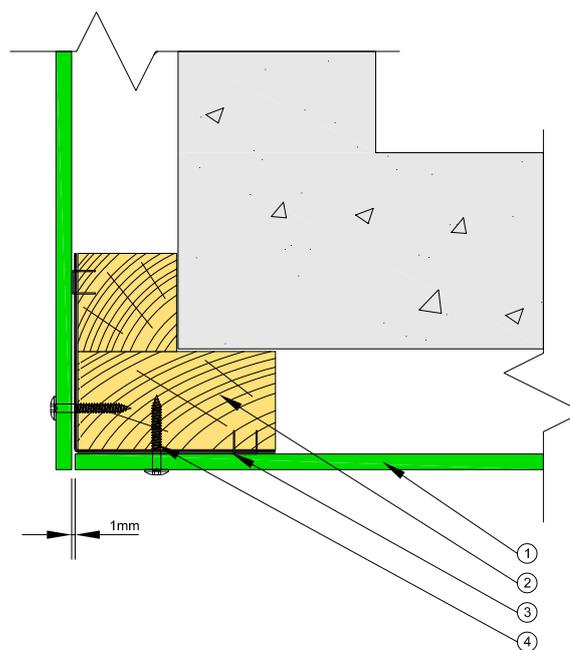
LEGEND

- 1. HardiePanel®
- 2. Breather membrane
- 3. EPDM gasket stapled to batten
- 4. T20 Torx Screw
- 5. 50mm x 25mm timber batten
- 6. HardieTrim®



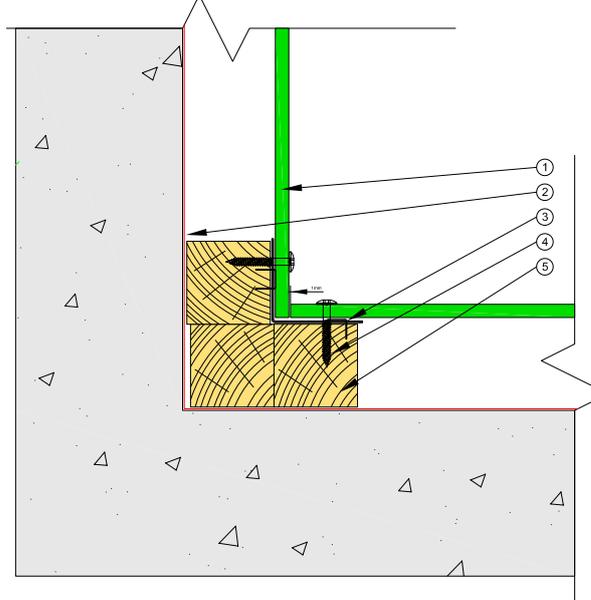
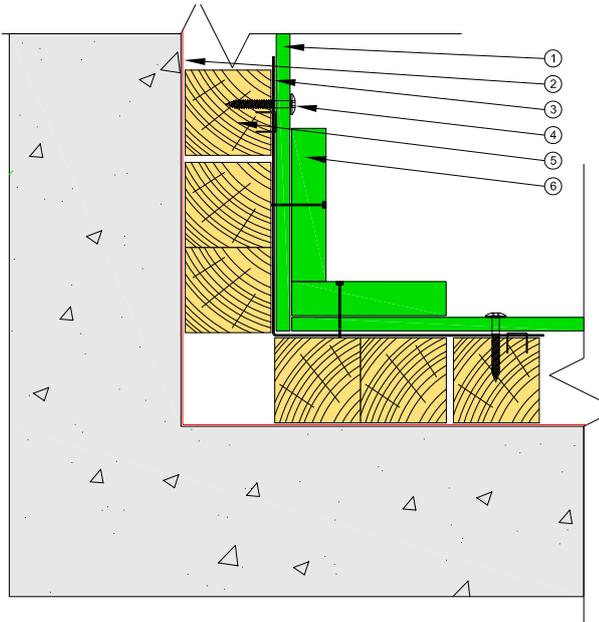
LEGEND

- 1. HardiePanel®
- 2. EPDM gasket stapled to batten
- 3. T20 Torx Screw
- 4. 50mm x 25mm timber batten
- 5. L-trim profile (with 1mm gap to panel)



LEGEND

- 1. HardiePanel®
- 2. 50mm x 25mm timber batten
- 3. EPDM gasket stapled to batten
- 4. T20 Torx Screw



LEGEND

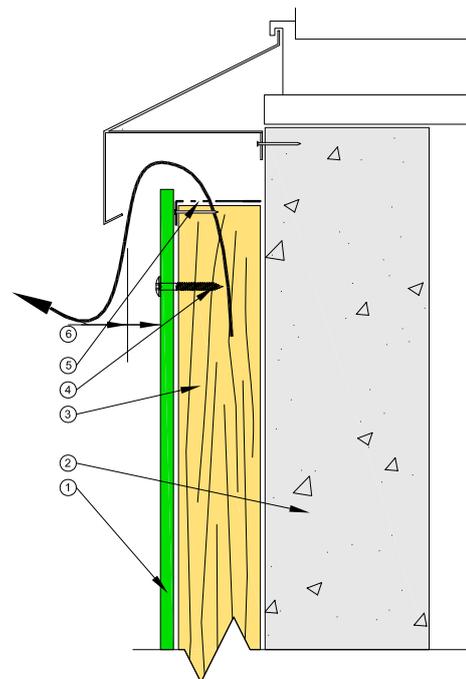
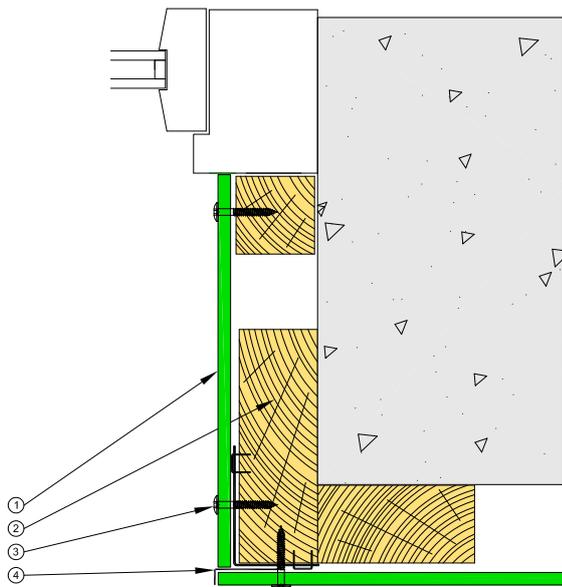
- 1. HardiePanel®
- 2. Breather membrane
- 3. EPDM gasket stapled to batten
- 4. T20 Torx Screw
- 5. 50mm x 25mm timber batten
- 6. HardieTrim®

LEGEND

- 1. HardiePanel®
- 2. Breather membrane
- 3. EPDM gasket stapled to batten
- 4. T20 Torx Screw
- 5. 50mm x 25mm timber batten

WINDOW REVEAL

WINDOW CILL

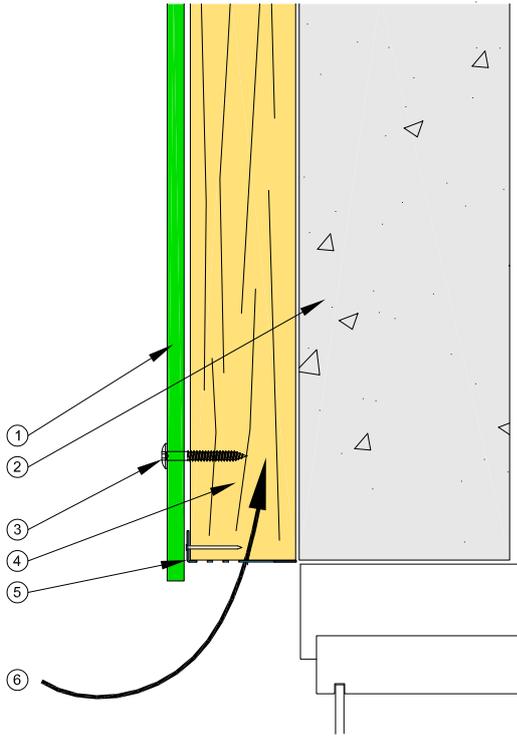


LEGEND

- 1. HardiePanel®
- 2. Timber batten
- 3. T20 Torx Screw
- 4. L-Trim profile

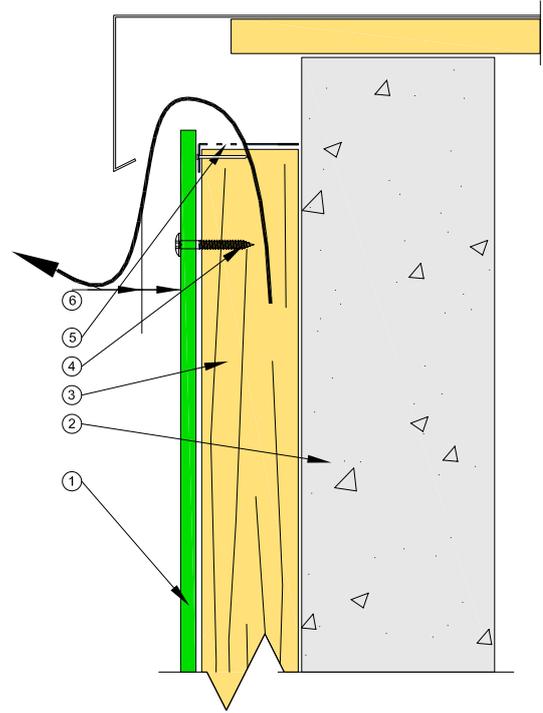
LEGEND

- 1. HardiePanel®
- 2. Masonry wall
- 3. 50mm x 50mm timber batten
- 4. T20 Torx Screw
- 5. HardiePanel® ventilation profile
- 6. 20mm ventilation gap



LEGEND

- 1. HardiePanel®
- 2. Masonry wall
- 3. T20 Torx Screw
- 4. 50mm x 50mm timber batten
- 5. HardiePanel® ventilation profile
- 6. Ventilation



LEGEND

- 1. HardiePanel®
- 2. Masonry wall
- 3. 50mm x 50mm timber batten
- 4. T20 Torx Screw
- 5. HardiePanel® ventilation profile
- 6. 20mm ventilation gap

## GENERAL INFORMATION

### SERVICE

If you have any questions regarding **HardiePanel®** cladding, our staff are ready to assist you with advice and guidance. Please, ensure that you have the latest version of this publication, by checking that the publication date corresponds with the downloadable version from our website [www.jameshardie.co.uk](http://www.jameshardie.co.uk). In case of doubt, please contact your local James Hardie® representative.

### WARRANTY

Warranty conditions can be commissioned at James Hardie Europe BV.

### ADDITIONAL INFORMATION

Additional information including CAD details and test reports are available at [www.jameshardie.co.uk](http://www.jameshardie.co.uk)

### SPECIFIC INSTALLATION

For any installation which is not covered in this manual, please contact our technical service at the number below.



## CONTACT JAMES HARDIE

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