

# Your high performance facade panel

Technical guide  
for Hardie® Panel

**A2**  
fire-rated

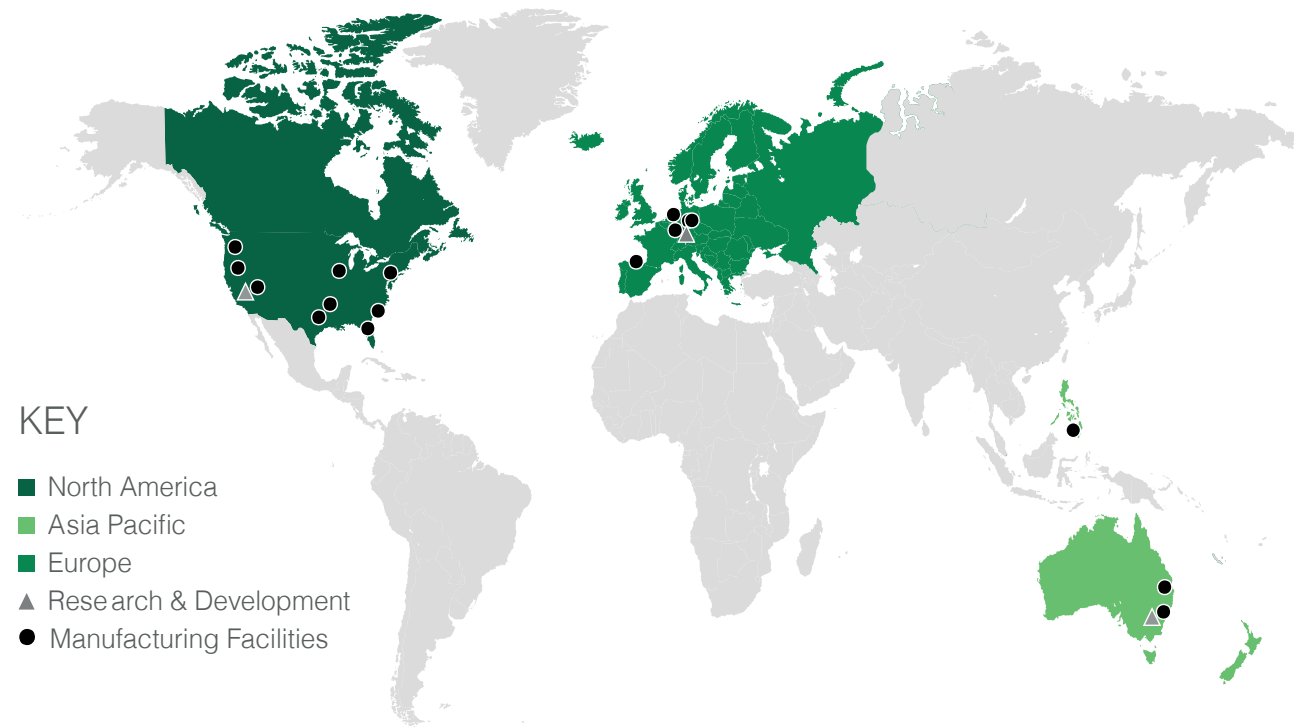


**Hardie® Panel**  
fibre cement cladding



**JamesHardie™**





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James Hardie is a world leader in the manufacture of high-performance fibre cement and fibre gypsum building solutions. As the trusted innovator and industry leader we empower homeowners and building professionals alike to achieve their dreams with premium quality solutions. Our products enable endless possibilities for designing forever homes and exceptional buildings, whilst also delivering trusted protection and long-lasting beauty.

We are a fast-paced company dedicated to our customers, market driven innovation, an inclusive and empowering culture, and an unwavering commitment to our Zero Harm safety initiative. Whilst operating with a global mindset, we put great care into how our business can support the local communities in which we operate, live and work in.

Our cladding products not only create a stunning stand-alone solution, but also look great with other building materials such as stone, wood and brick, making design potential endless. We will provide sustainable solutions for your project, giving you affordable, individual designs, energy efficiency and everything you need to ensure your project looks stunning for years to come.

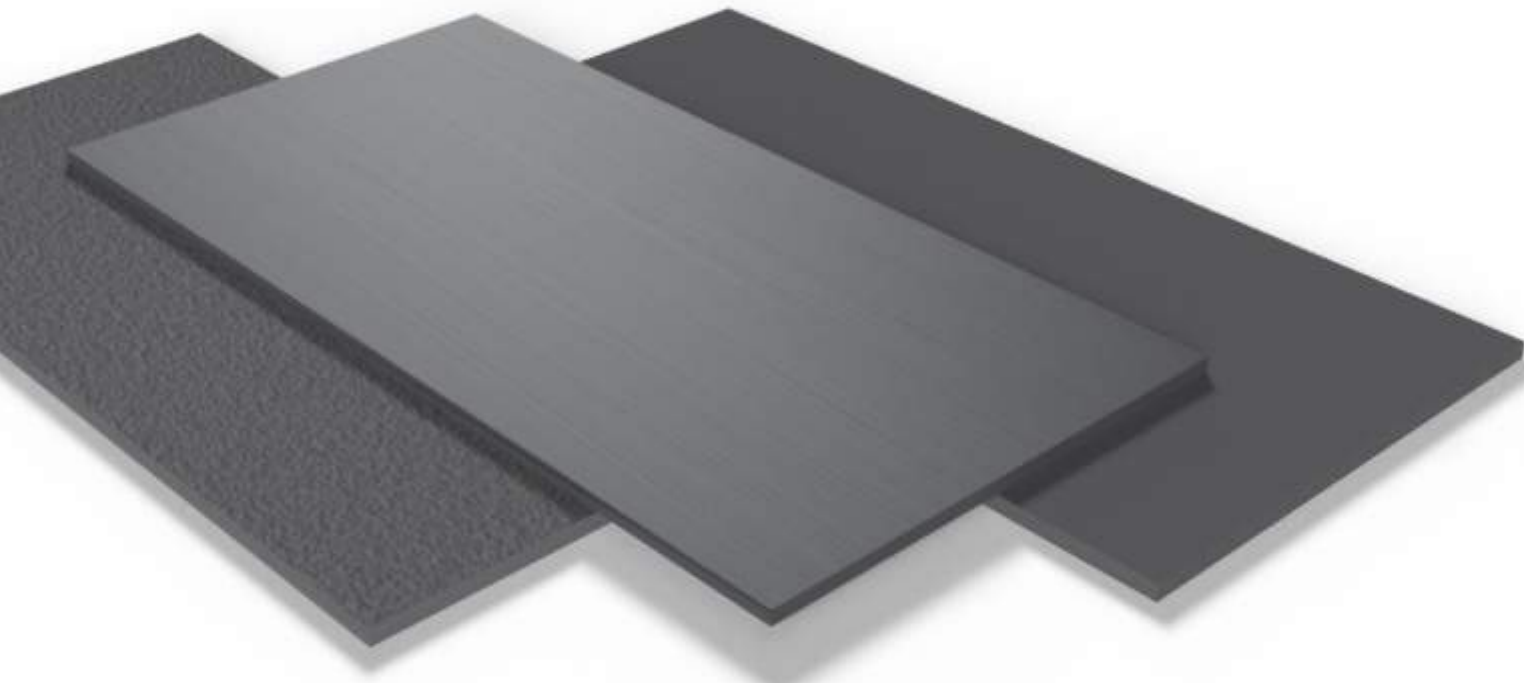
Build your projects with a global organisation that's been pursuing excellence since 1888.





# Introducing the Hardie® Panel range

Purposely designed as external cladding for commercial buildings in both new build and renovation. Hardie® Panel and Hardie® Architectural Panel cladding can be used in a ventilated construction fixed to either a timber, aluminium or steel sub-frame using corrosion resistant screws or rivets. Our cladding can be installed with or without insulation. With Hardie™ Blade saw blade, Hardie® Panel sheets can be easily cut to size on site.



Hardie® Architectural  
Panel Smooth Sand

Hardie® Architectural  
Panel Brushed Concrete

Hardie® Panel  
Smooth

## Application Types

Available in 3048mm x 1220mm, we offer two different thicknesses depending on your requirements.

<p><b>8mm</b></p>	<p>For all building types.</p>
<p><b>11mm</b></p>	<p>Achieves European Assessment Document 090062-00-0404 Category I for impact. For the first 1.5 m height of the wall in high footfall areas.</p>

## The technical information

### Composition

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

### Quality & Certification

The production of Hardie® Panel cladding is audited annually by external auditors. Hardie® Panel cladding product specifications and classifications comply with EN 12467:2012 and 13501-1. BBA certification for 8mm. 11mm Hardie® Panel cladding is pending approval.

### Sub-Frame

Hardie® Panel cladding can be installed on timber, aluminium or steel sub-frames using corrosion resistant screws or rivets.

### Dimensions

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

### Applications

Purposely designed as an external cladding for residential and commercial buildings in both new build and renovation. Hardie® Panel cladding is a ventilated rainscreen system fixed to a main substrate of timber frame, steel frame or masonry wall construction.

Hardie® Panel cladding can be installed horizontally and vertically, with or without insulation.

### Approvals

Construction material class as per EN 13501-1: has a fire classification of A2-s1, d0  
BBA certified 05/4248 8 mm

### Properties

Fibre cement panels according to EN 12467 - Type A, class 2  
Easy installation  
– Cutting with Hardie™ Blade saw blade  
(suitable for most cable- or battery-powered circular saws)

Hardie® Panel cladding sizes				
	Hardie® Panel		Hardie® Architectural Panel	
	8 mm	11 mm	8 mm	11 mm
Thickness				
Length	3048 mm	3048 mm	3048 mm	3048 mm
Width	1220 mm	1220 mm	1220 mm	1220 mm
Weight	11.2 kg/m <sup>2</sup>	13.9 kg/m <sup>2</sup>	11.2 kg/m <sup>2</sup>	13.7 kg/m <sup>2</sup>
Density	1300 kg/m <sup>3</sup>	1300 kg/m <sup>3</sup>	1300 kg/m <sup>3</sup>	1300 kg/m <sup>3</sup>

**A2**  
fire-rated

**15 Year**  
Warranty

## The data

	Hardie® Panel		Hardie® Architectural Panel	
	8 mm	11 mm	8 mm	11 mm
Panel thickness	8 mm	11 mm	8 mm	11 mm
Gross density	~ 1300 kg/m <sup>3</sup>	~ 1300 kg/m <sup>3</sup>	~ 1300 kg/m <sup>3</sup>	~ 1300 kg/m <sup>3</sup>
Mass per unit area	11.2 kg/m <sup>2</sup>	13.9 kg/m <sup>2</sup>	11.2 kg/m <sup>2</sup>	13.7 kg/m <sup>2</sup>
Thermal conductivity	λ10.tr = 0.23 W/(m·K)	λ10.tr = 0.23 W/(m·K)	λ10.tr = 0.23 W/(m·K)	λ10.tr = 0.23 W/(m·K)
Thermal resistance	R <sub>10.tr</sub> = 0.035 (m <sup>2</sup> K)/W	R <sub>10.tr</sub> = 0.048 (m <sup>2</sup> K)/W	R <sub>10.tr</sub> = 0.035 (m <sup>2</sup> K)/W	R <sub>10.tr</sub> = 0.048 (m <sup>2</sup> K)/W
Flexural strength EN 12467	15.5 MPa perpendicular to fibre direction 10.1 MPa parallel to fibre direction	18.0 MPa perpendicular to fibre direction 12.5 MPa parallel to fibre direction	14.0 MPa perpendicular to fibre direction 8.5 MPa parallel to fibre direction	17.0 MPa perpendicular to fibre direction 11.8 MPa parallel to fibre direction
Water absorption DIN 52103:1988-10, Method A	30%	30%	30%	30%
Young's modulus	6200 N/mm <sup>2</sup>	6200 N/mm <sup>2</sup>	5100 N/mm <sup>2</sup>	5100 N/mm <sup>2</sup>
Linear strain	≤ 0.05 mm/m*	≤ 0.05 mm/m*	≤ 0.05 mm/m*	≤ 0.05 mm/m*
Impact Resistance soft and hard impact EAD 090062-00-0404**	–	Category 1 (H1-3, S1-4)	–	Category 1 (H1-3, S1-4)

\* between 30 % and 90 % rel. humidity

Dimensional tolerance for equilibrium moisture content for standard panel sizes				
	Hardie® Panel		Hardie® Architectural Panel	
	8 mm	11 mm	8 mm	11 mm
Panel thickness	8 mm	11 mm	8 mm	11 mm
Panel sizes	3048 mm x 1220 mm	3048 mm x 1220 mm	3048 mm x 1220 mm	3048 mm x 1220 mm
Length tolerance	± 5 mm	± 5 mm	± 5 mm	± 5 mm
Width tolerance	± 3.66 mm	± 3.66 mm	± 3.66 mm	± 3.66 mm
Thickness tolerance	± 0.8 mm	± 0.8 mm	+1.2 mm – 0.8 mm	+1.2 mm – 0.8 mm



# Tools and Accessories

## Supplied by James Hardie

### Metal corner for Hardie® Panel cladding



With this high-quality, colour-matched aluminium profile, the outer corners can be designed in a modern way. The profile is easy to cut with a hacksaw or mitre saw. Available in the entire colour range from James Hardie.

### Standing seam trim for Hardie® Panel cladding



Façade design option. Available in the entire colour range from James Hardie.

### Standing seam end trim for Hardie® Panel cladding



Façade design option. Available in the entire colour range from James Hardie.

### Hardie™ Blade Saw Blade



160, 190, 254 or 305 mm diamond tipped saw blade to reduce dust production and decrease wear.

### Hardie™ Seal Edge Coating



Use Edge Coating for touching up small scratches or chips, and also for sealing cut ends to ensure long lasting performance of the facade.

### Hardie™ Panel screw for timber



A2 stainless steel screws for attaching the Hardie® Panel cladding to wooden substructures.

## Supplied by Others

### Universal joint profile



To be used on horizontal express joints. Length 3000mm.

### Rivet for 8 mm panels



5.0 x 18 x 14 mm head rivet  
Grip range of 8.0 - 14 mm  
AlMg5 aluminium body – Stainless Mandrel.

### Rivet for 11 mm panels



5.0 x 25 x 16 mm head rivet  
Grip range of 11.5 - 18 mm  
AlMg5 aluminium body – Stainless Mandrel.

### Centralising Tool



Used on pre-drilled panel to ensure a concentric hole is drilled in the aluminium behind the panel.

### Rivet Spacer Nosepiece



Used to set the rivet off the panel face by 0.3mm.

### 5.1 mm & 9.0 mm Carbide Drill Bits



For drilling panel fixed point holes on site. 5.1mm & 9.0 mm diameter.

### CT-HDRLG-5.1 Replacement drill bit



For the centralising tool above.

### Ventilation Profiles - Perforated

Used to allow air into the cavity while preventing the entry of pests. This profile is custom sized, depending of the depth of the cavity.

### Waterproof Membrane

The installation of a breather membrane acting as a 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.

### Aluminium & Steel Sub Frames

Proprietary systems readily available. Please see manufacturers' details for specification and installation information.

### Rivet Gun

For use with rivet installation for installing rivets. Please note rivets must not be installed with mechanical tongs.

### Jigsaw

For cut outs. T1 41 Bosch® blade or equivalent recommended.

### Saw Equipped with Hardie™ Blade Saw Blade with HEPA Extraction

Proprietary systems readily available. Please see manufacturers' details for specification and installation information.



# Fire safety You can trust Hardie® Panel

The UK is seeing a much-heightened emphasis on meeting the fire classification for new cladding and recladding projects. In line with the Building Regulations and Approved Document B, any relevant building with a height of 11 m or more must have all materials that construct an external wall with a minimum A2-s1,d0 fire classification. In addition to this, there are other characteristics to consider, e.g. building boundary conditions and use of the building.

Hardie® Panel has achieved a classification of A2-s1,d0 which means that it meets the requirements as outlined in the Approved Document B. This means you can have peace of mind that our cladding is safe to use on all new building and recladding projects.

## Recladding projects

There are many buildings in the UK that now need to replace existing non-compliant façades with a non-combustible alternative in both the residential and commercial sectors.

Hardie® Panel can be used as a direct replacement for existing cladding on a range of buildings. The non-combustible A2-s1,d0 rated panel can be trusted for protection against fire and extreme weathering for many years to come, whilst providing the strength, durability and style that your clients deserve.

Cladding or recladding your project with Hardie® Panel is a way to not only ensure project safety and compliance but is also great way to revitalise and modernise older buildings.

*“We have used Hardie® Panel on a number of projects and it is one of the most economical materials to achieve decorative panel rainscreen cladding. Hardie have one of the more comprehensive banks of test data for impact, fire, thermal and durability so we are confident in using their products”*

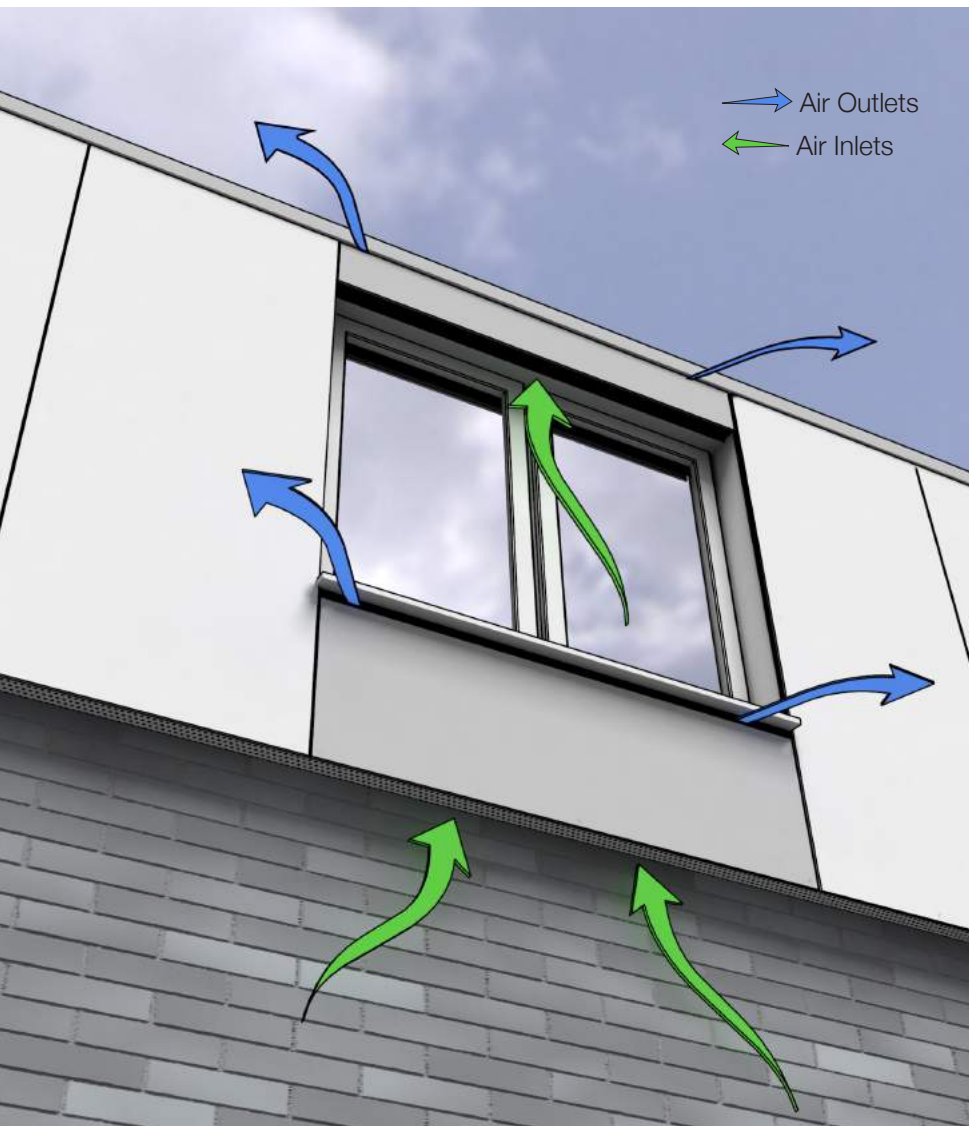
Adrian Buckmaster MI Fire Eng, Dip Mgmt  
Technical Director  
Tetraclad Ltd





# Ventilated rainscreen facade system

Hardie® Panel cladding is an 8 mm or 11 mm thick large format panel for residential and commercial schemes. The product is installed as part of a ventilated rainscreen facade system fixed to timber, aluminium or steel sub-frames, using corrosion resistant screws or rivets. Hardie® Panel cladding can be installed on facades or soffits, with or without insulation.



Note: Cladding with Hardie® Panel boards must always be carried out as a ventilated facade with minimum 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.





# Case study Clarach Bay, Aberystwyth

Hardie® Panel has been utilised as the panel of choice on a unique leisure centre project. The project brief specified the use of non-combustible large format panels and required colours that matched the shoreline next to the project. With our colour flexibility we provided the look the client wanted. The architect and installer was impressed by not only the technical specification of the A2 fire-rated cladding, but also the quick availability and the competitive pricing which allowed the project to come in within the planned budget.

*“This development had its unique challenges and with the support of the manufacturer we were able to develop a solution that will withstand the salt, sea and air over time. We are certainly looking forward to working with James Hardie going forward and specifying any future innovations”.*

Architect & Installer - Nick Carroll Architects





# Windspeeds

Windloading will depend on the location of the build in the UK, including factors such as height above sea level, distance from the coast and other buildings that are in the vicinity.

The map below shows the different UK zones for basic wind velocities according to BS-EN-1991-1-4.

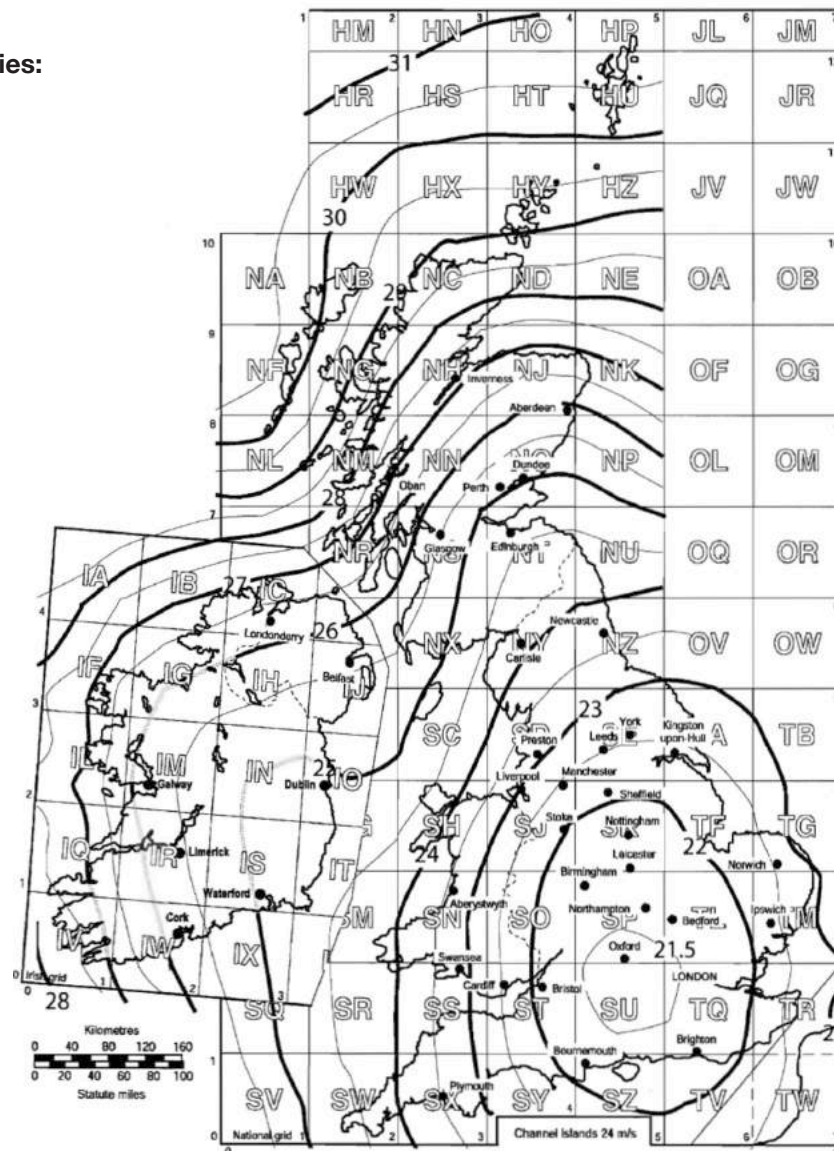
Windloading should always be calculated by a qualified engineer.

### UK is divided into 3 terrain categories:

I = seaside area II = rural area III = City

A further distinction is then made between 3 levels:

- Flatland
- Hill or ridge
- Steep face or cliff



### Information on windload testing

Board depth	Frame type	Fixing type	Framing/ stud centres	Fixing centres vertically	Published wind pressure result (kPa) inc safety factor
8 mm	Aluminium	Rivet (façade) Aluminium body / stainless mandrel 5 mm x 18 mm x 14 head	600 mm	600 mm	-1.4 kPa
			400 mm	600 mm	-1.8 kPa
	Galvanised Steel Top Hats (min 1.5 mm thick)	Screw 5.5 x 35 x 12 mm Low profile bi-metalic self drilling	400 mm	400 mm	-2.87 kPa
	Timber	Screw 5.5 x 25 mm x 12 mm head Stainless steel	600 mm	400 mm	-1.27 kPa
11 mm	Timber	Screw 4.8 x 38 mm x 12 mm head Stainless Steel	400 mm	300 mm	-1.73 kPa
	Aluminium	Rivet (façade) - Aluminium body / stainless mandrel 5.0 x 25 mm 16 mm head Grip range 12.5-18 mm	600 mm	600 mm	-2.2 kPa
		Galvanised Steel Top Hats (min 1.2 mm thick)	Screw 5.5 x 35 x 12 mm bi-metalic self drilling	600 mm	600 mm
	Timber	Hardie™ Panel Screw 4.8 x 38 x 12 mm head 304 grade stainless steel	600 mm	600 mm	-2.2 kPa



# Installing Hardie® Panel cladding

Prior to installation check if the products are fit for purpose and in accordance with specifications laid down in this document. Hardie® Panel cladding is fixed as per the drawing section.

## Rivets on Aluminium Sub-Frames

For rivet fixing Hardie® Panel cladding will require pre-drilling, with the fixed point being 5.1 mm and all others being sliding points at 9 mm. The board is then offered up to the sub-frame which also requires pre-drilling.

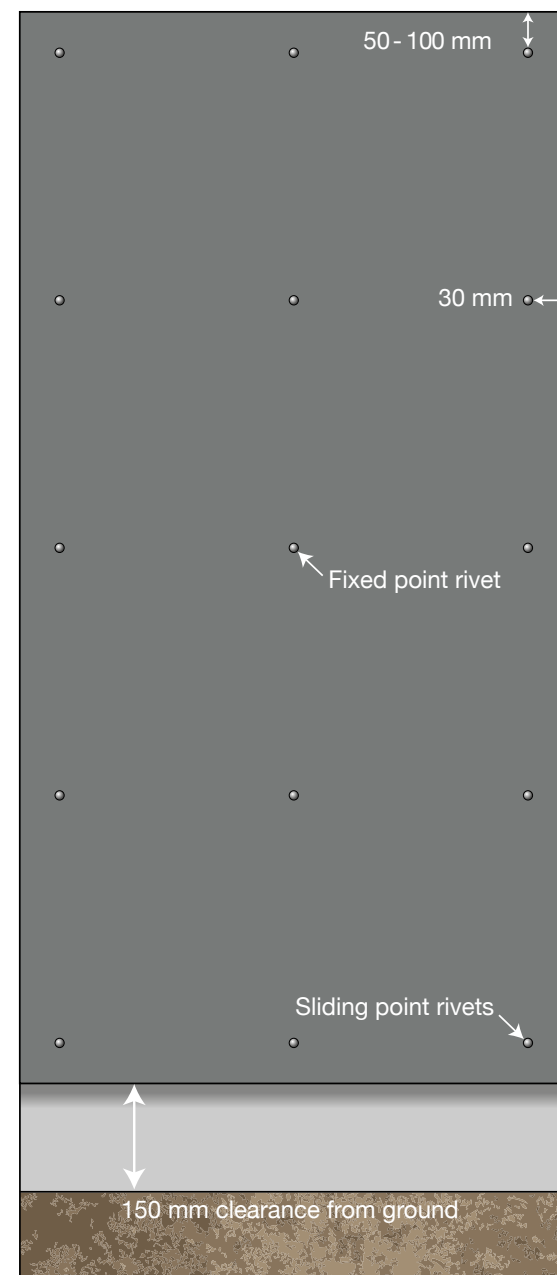
The fixed point hole should be drilled to the same size as the rivet diameter. All other sliding points should be drilled with a centralising tool to ensure that the rivet hole is central to the 9mm pre-drilled hole. Using a rivet gun (equipped with stand off head) install all the rivet fixings. To be clear, all fixings should have sliding points except for one fixed point.

## Clearances

Do not install the panels in such a way that they remain in contact with standing water.

Install Hardie® Panel 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 150 mm.

Maintain a minimum 50 mm clearance between Hardie® Panel cladding and paths, steps, driveways and roofing elements.



## Fixing the First Board

A minimum 10 mm drip edge is required at the lower edge of the first board. The Hardie® Panel board can be installed either vertically or horizontally, both can be installed on a vertical sub-structure. The guidelines for fixing positions are identical for either layout. Panels can be fixed with a gap between adjoining boards as a feature, max 10 mm. They can also be butt-jointed. However, due to factory tolerances, this is only recommended when the panels are fully cut to size.

## Fixing the Second and Subsequent Boards

A universal joint profile can then be installed over the top edge of the first and subsequent boards to protect the joint. Counter flashing shall be installed as per the manufacturer's instructions.

## 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. 6mm 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.

## Load Bearing

Hardie® Panel 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 cladding as the primary load bearing elements. Lightweight finishing grilles can be bonded to the face of the product using a construction adhesive.



# Installation guide

## Rivet fixed – Aluminium frame

### General Description Aluminium Frame

Hardie® Panel cladding can be installed onto an aluminium framing system. The sub-frame consists of a bracket and vertical 'T' and 'L' rail (T profiles to be used for panel joints, and L profile to be used in intermediate positions). The brackets are secured directly to a new or existing substrate of; concrete, brickwork or blockwork, steel, timber frames or SIPS. Stainless steel fixings are recommended to prevent bimetallic corrosion.

### Vertical Rails

Once a line of vertical brackets is installed, 'L' rail/'T' rail can be attached using the 'helping hand' at each bracket position. As the panels will follow any irregularity or miss-alignment of rails, it is important that time is taken to align and level the framework to a high standard. Each 'L' or 'T' profile rail should be cut to the required length from a standard length rail. Place the rail in each of the brackets using the helping hand to support the rail. Allow 10mm expansion gaps between rails. Profiles can then be eased outwards to form the specific cavity depth. Secure the rail using stainless steel screws to the fixed or sliding points.

For the correct combination of single/double brackets, fixed and sliding points you should contact your aluminium system provider.

### Insulation

When insulation is specified, it should be cut and tight butted around the brackets and secured with appropriate fixings. Sufficient insulation fixings should be provided to ensure that the insulation cannot block the ventilation cavity.

### Design & Loading

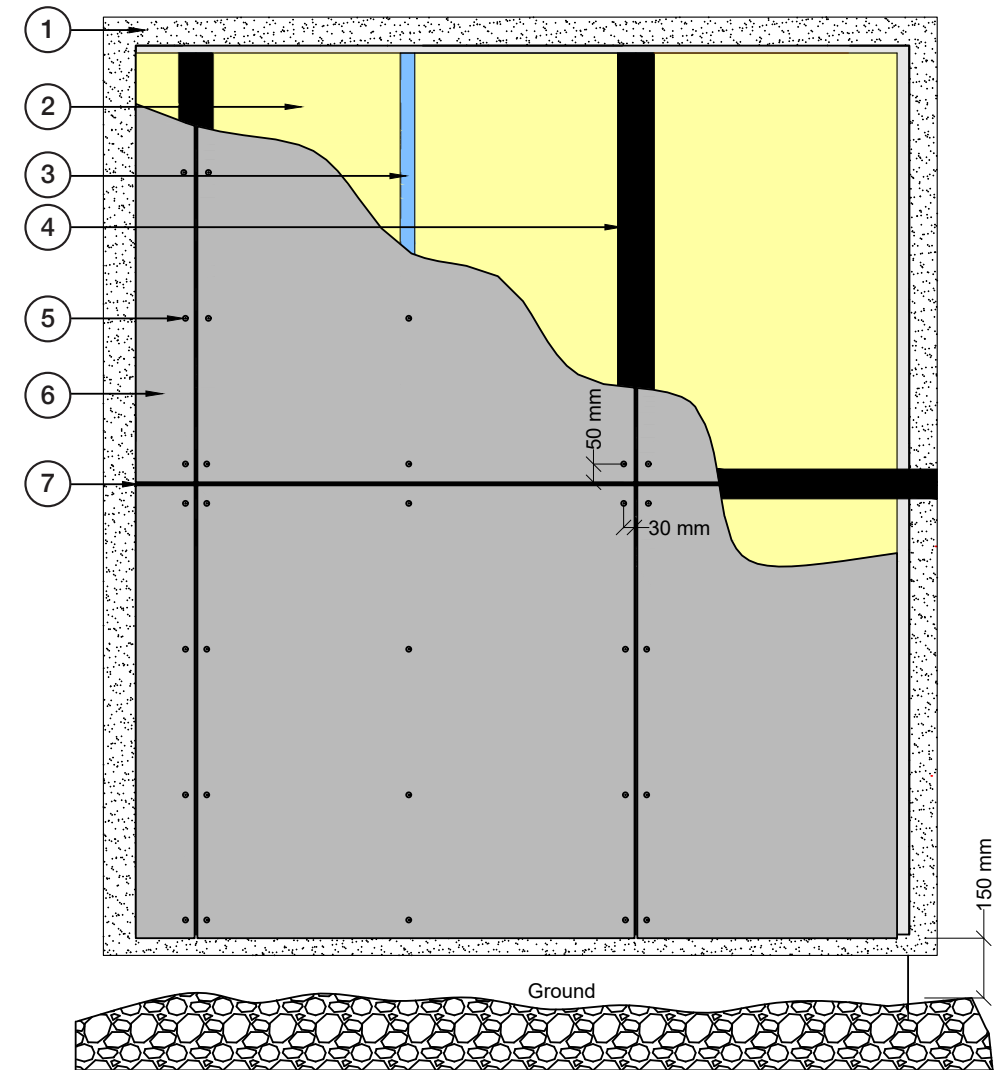
The design and loading capability of the metal back frame is to be determined by the metal frame provider.

Please consult with your metal frame supplier prior to starting installation so that the correct system can be specified for your project

### Fire Stopping

Any opening in the structure should be adequately fire stopped as per the contract performance requirements. Refer to the fire stopping manufacturers guidelines for the application in question.

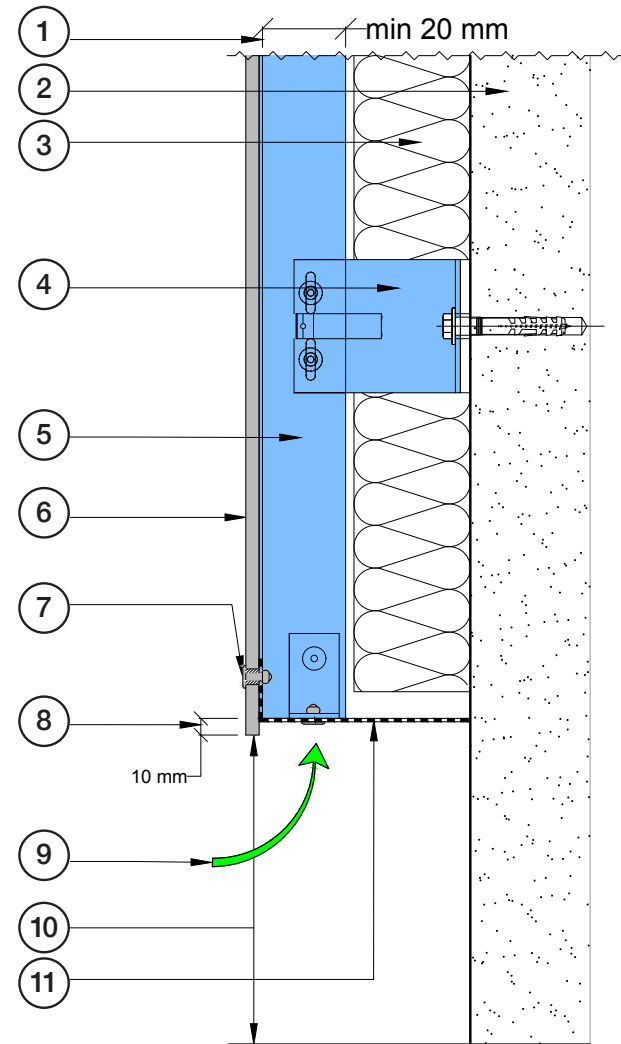
### General Arrangement of Aluminium System



- 1 Load bearing substrate
- 2 Insulation (if required)
- 3 Aluminium 'L' Rail
- 4 Aluminium 'T' Rail (with blackout tape applied)
- 5 Rivet (see accessories)
- 6 Hardie® Panel cladding
- 7 Universal joint profile

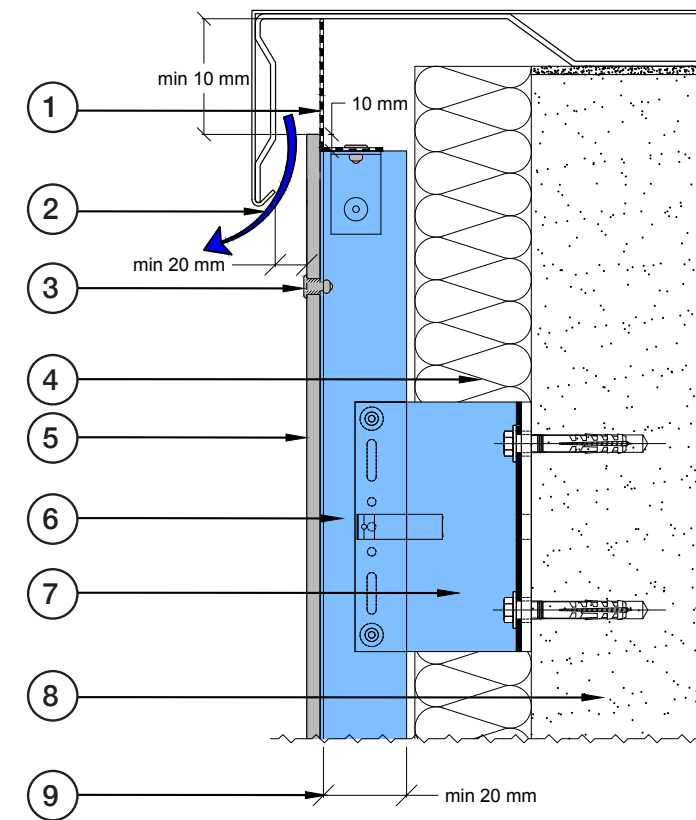


## Base Ventilation Detail



- 1 Ventilation gap
- 2 Load bearing substrate
- 3 Insulation (if required)
- 4 Aluminium bracket system
- 5 Aluminium 'T' or 'L' Rail
- 6 Hardie® Panel cladding
- 7 Rivet (see accessories)
- 8 Minimum drip edge
- 9 Ventilation path
- 10 10 mm Clearance
- 11 Ventilation profile (custom sized)

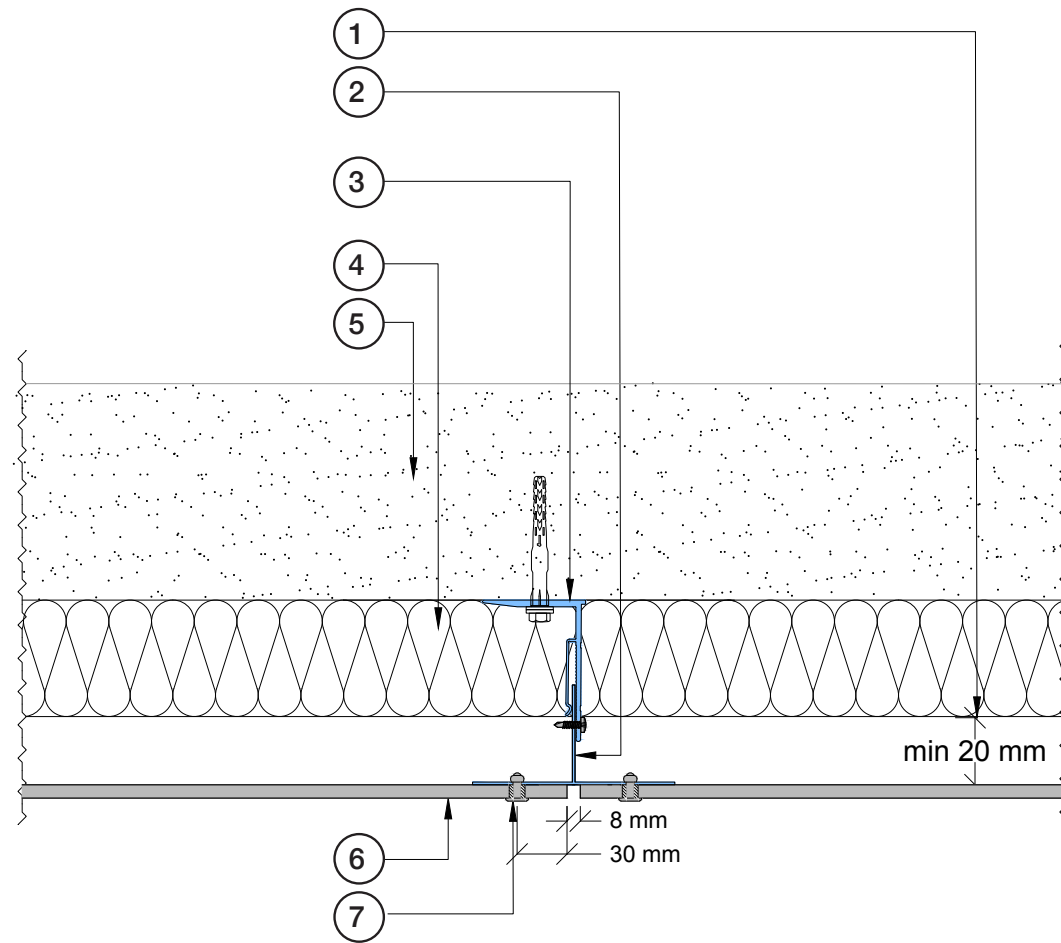
## Roof line ventilation detail



- 1 Ventilation profile
- 2 Ventilation path
- 3 Rivet (see accessories)
- 4 Insulation (if required)
- 5 Hardie® Panel cladding
- 6 Aluminium 'T' or 'L' rail
- 7 Aluminium bracket system
- 8 Load bearing substrate
- 9 Ventilation gap

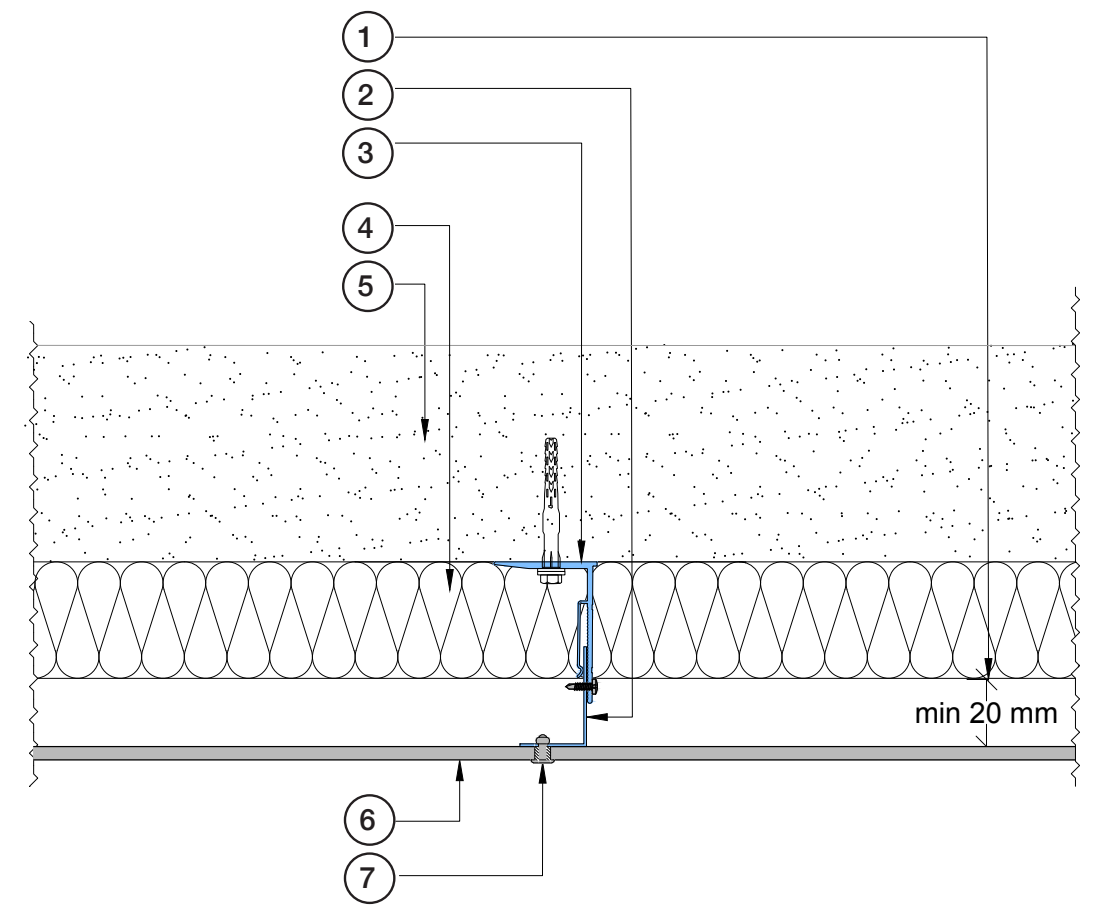


## Vertical joint



- 1 Ventilation gap
- 2 Aluminium 'T' rail (with black out tape applied)
- 3 Aluminium bracket system
- 4 Insulation (if required)
- 5 Load-bearing substrate
- 6 Hardie® Panel cladding
- 7 Rivet (see accessories)

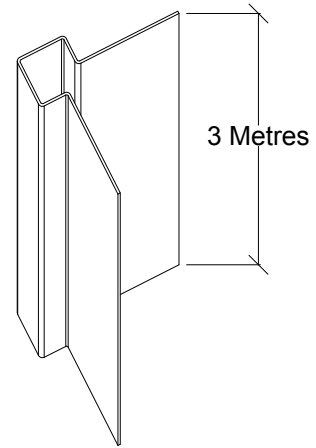
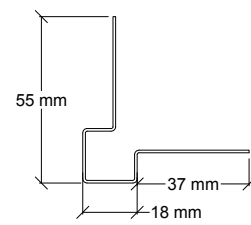
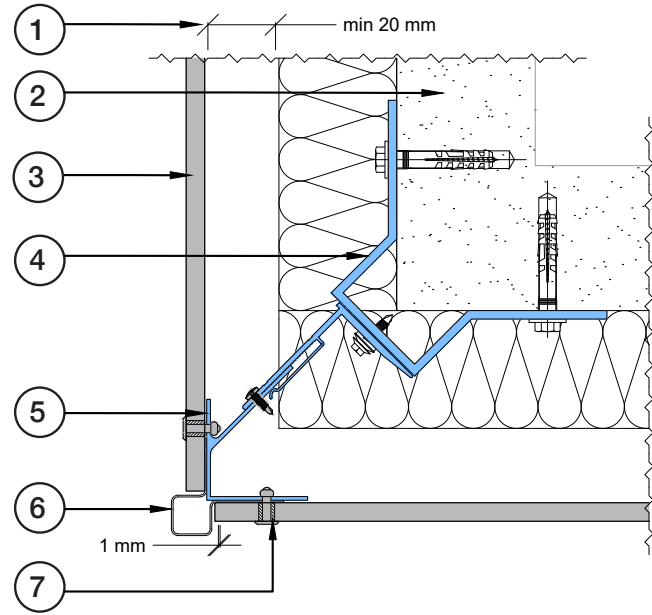
## Intermediate fixing



- 1 Ventilation gap
- 2 Aluminium 'L' rail
- 3 Aluminium bracket system
- 4 Insulation (if required)
- 5 Load-bearing substrate
- 6 Hardie® Panel Cladding
- 7 Rivet (see accessories)

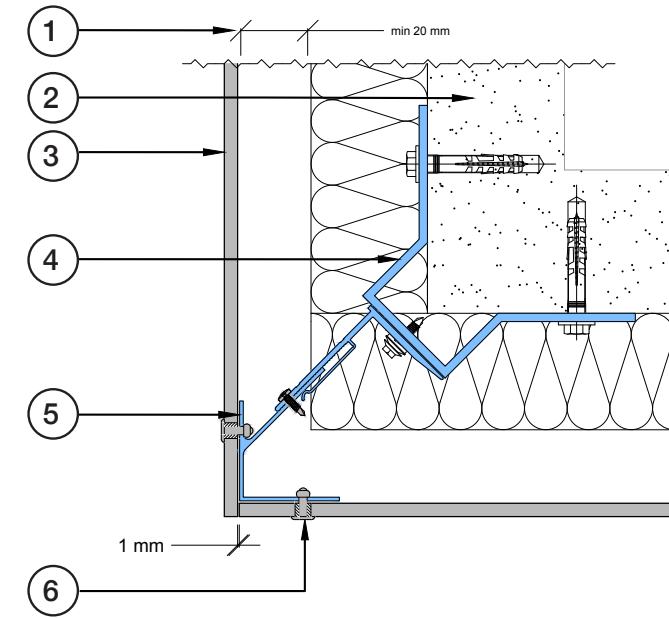


External corner with profile trim



- 1 Ventilation gap
- 2 Load-bearing substrate
- 3 Hardie® Panel cladding
- 4 Aluminium corner bracket
- 5 Aluminium external corner support
- 6 Metal external corner profile
- 7 Rivet (see accessories)

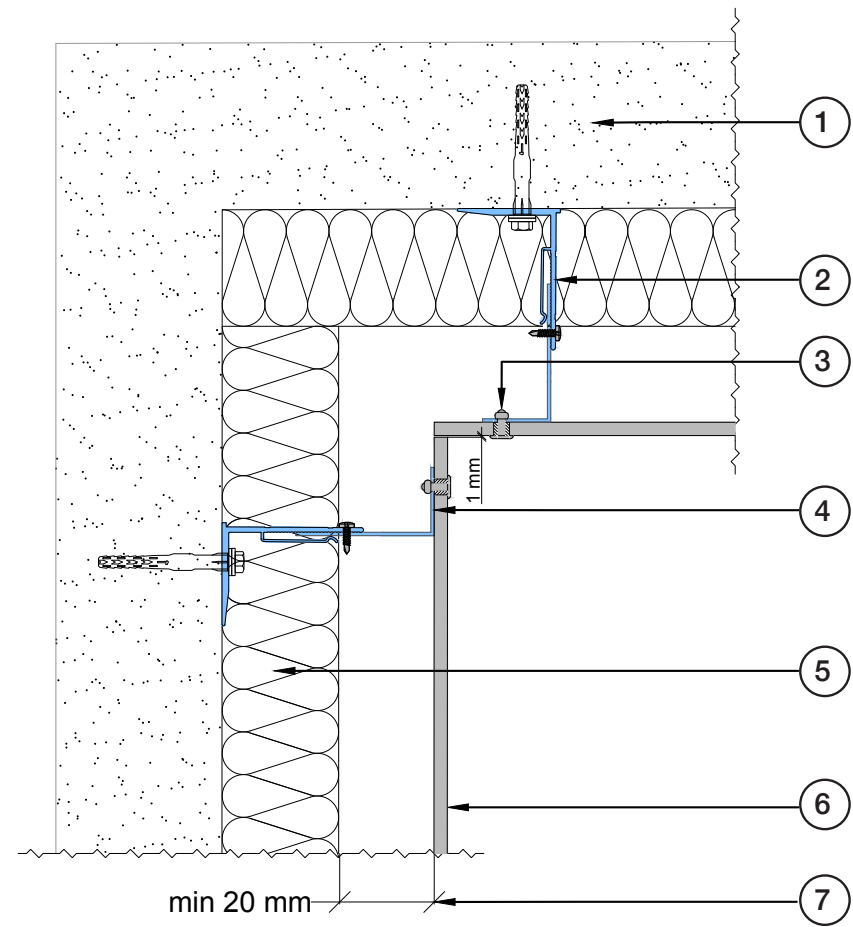
External corner without trim profile



- 1 Ventilation gap
- 2 Load-bearing substrate
- 3 Hardie® Panel cladding
- 4 Aluminium corner bracket
- 5 Aluminium external corner support
- 6 Rivet (see accessories)

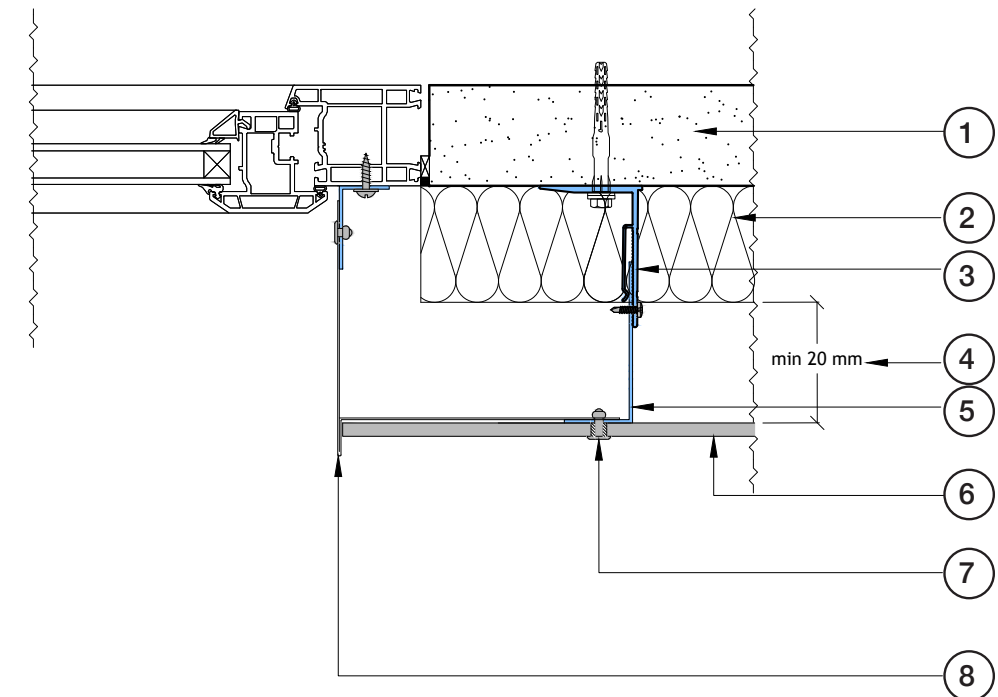


## Internal corner



- 1 Load-bearing substrate
- 2 Aluminium bracket system
- 3 Rivet (see accessories)
- 4 Aluminium 'L' rail
- 5 Insulation (if required)
- 6 Hardie® Panel Cladding
- 7 Ventilation gap

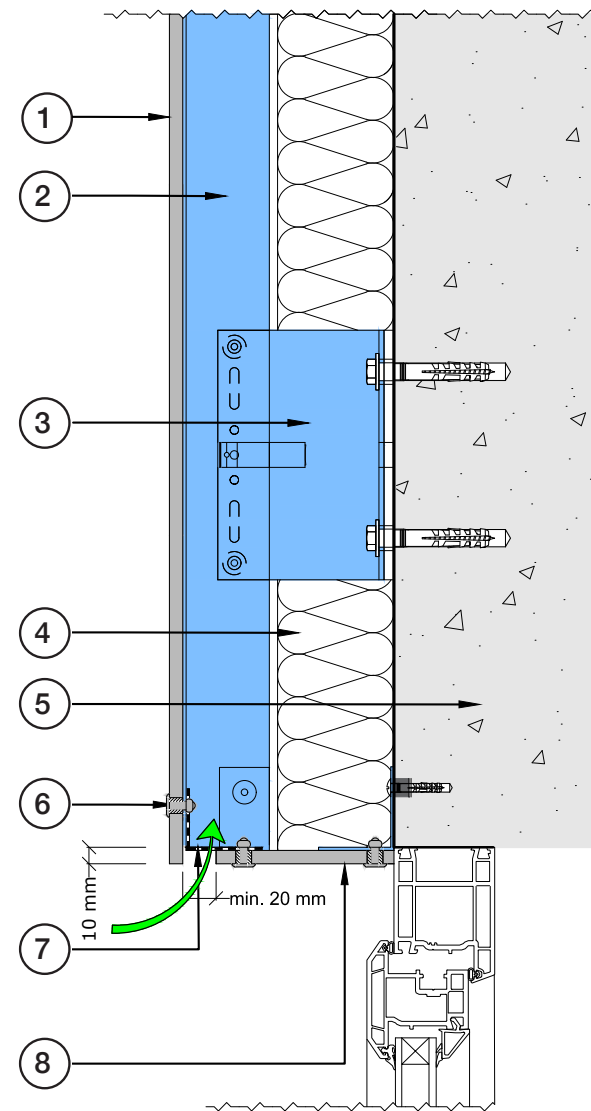
## Window reveal



- 1 Load-bearing substrate
- 2 Insulation (if required)
- 3 Aluminium bracket system
- 4 Ventilation gap
- 5 Aluminium 'L' rail
- 6 Hardie® Panel Cladding
- 7 Rivet (see accessories)
- 8 Metal reveal (supplied by others)

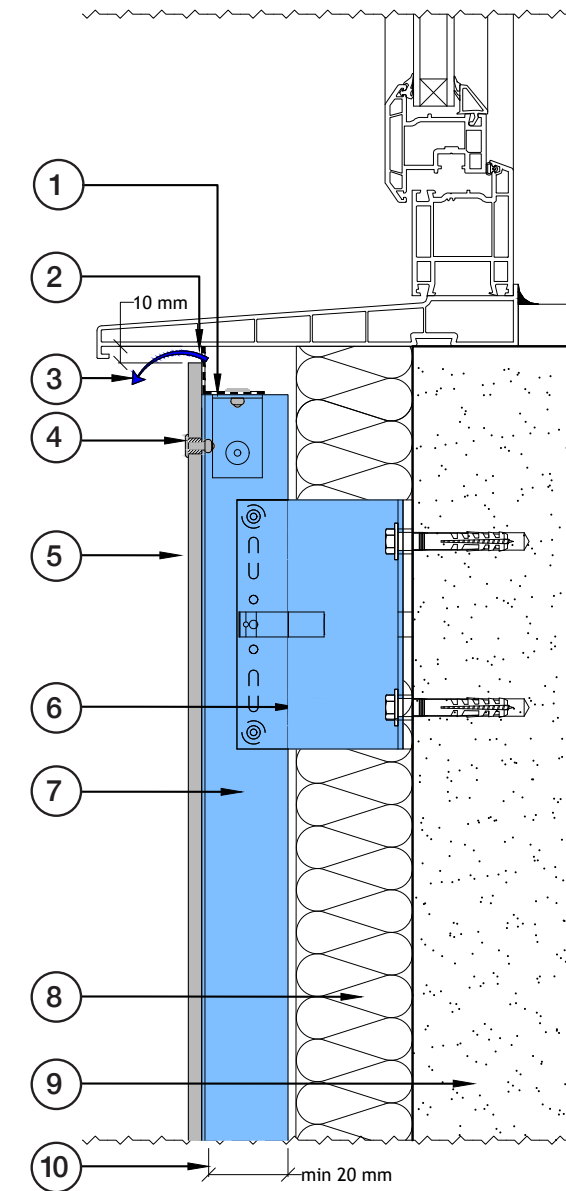


## Window head



- 1 Hardie® Panel Cladding
- 2 Aluminium 'T' or 'L' rail
- 3 Aluminium bracket system
- 4 Insulation (if required)
- 5 Load bearing substrate
- 6 Rivet (see accessories)
- 7 Ventilation Profile
- 8 Hardie® Panel Cladding

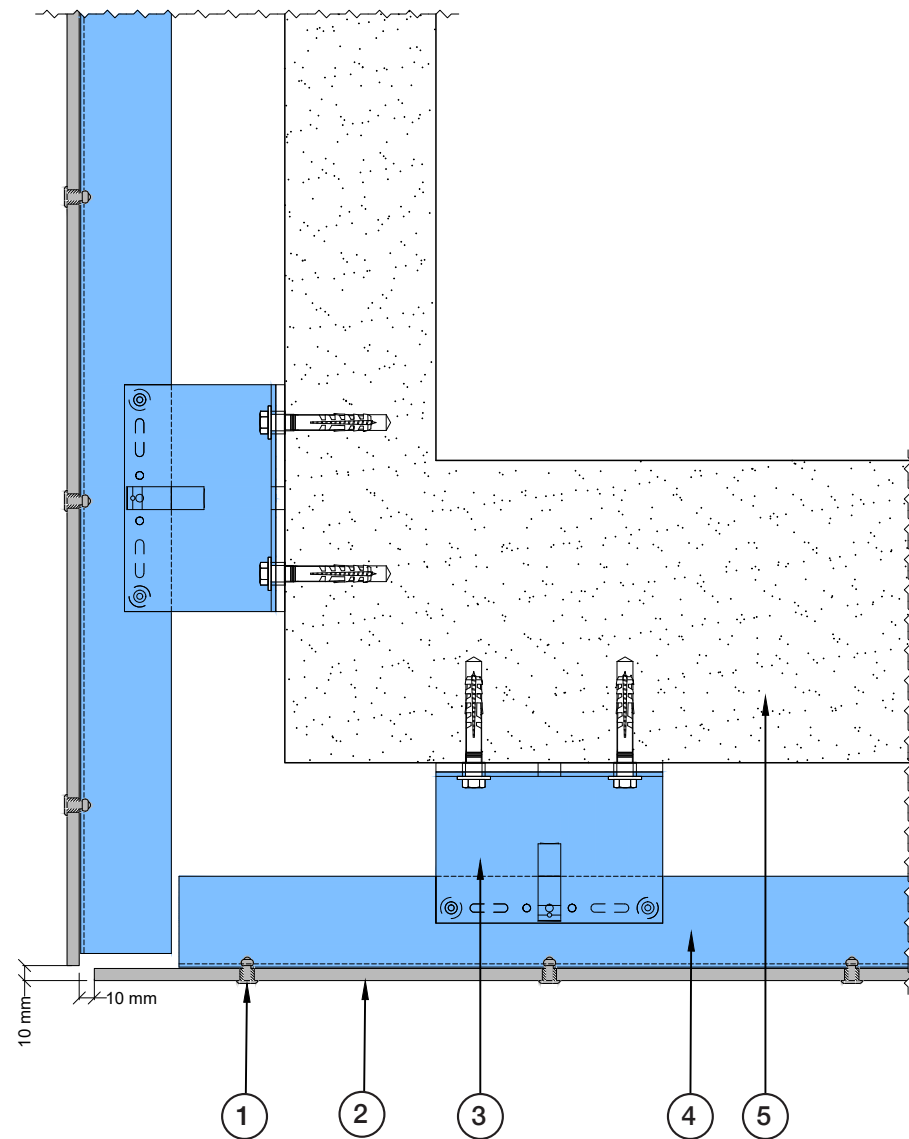
## Window cill



- 1 Ventilation profile
- 2 Air gap
- 3 Ventilation path
- 4 Rivet (see accessories)
- 5 Hardie® Panel Cladding
- 6 Aluminium bracket system
- 7 Aluminium 'T' or 'L' rail
- 8 Insulation (if required)
- 9 Load bearing substrate
- 10 Ventilation gap



## Soffit and fascia drawing

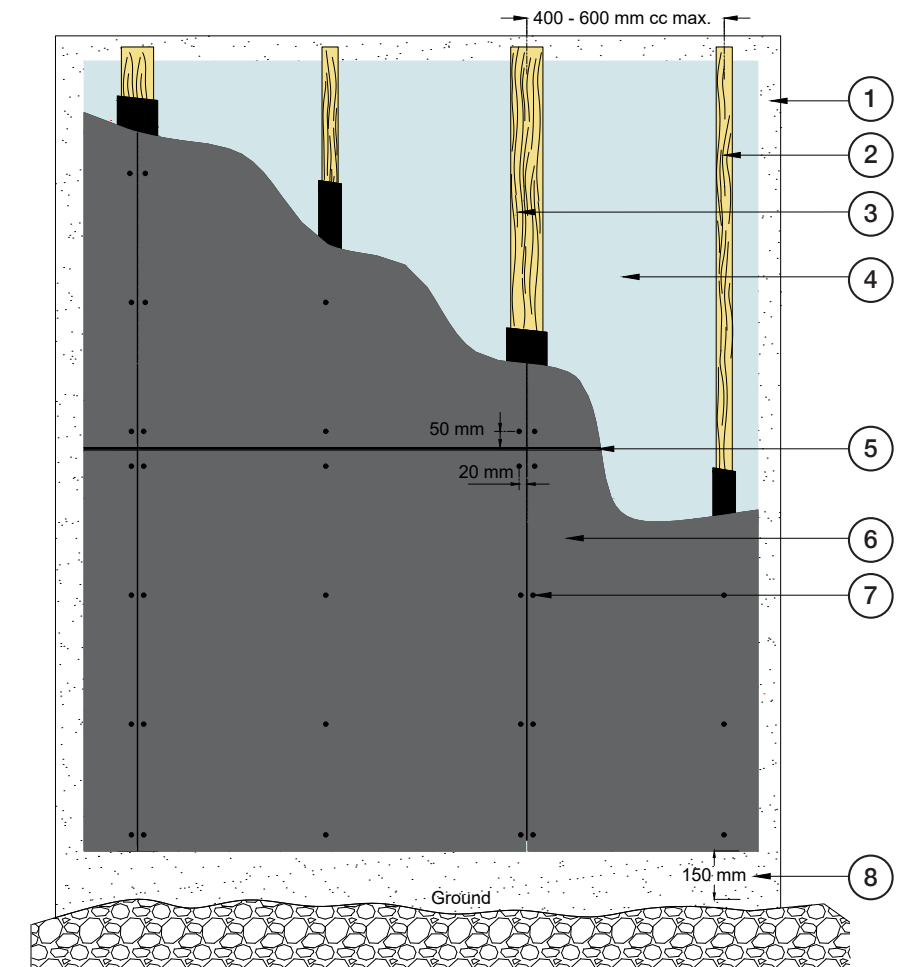


- 1 Rivet (see accessories)
- 2 Hardie® Panel Cladding
- 3 Aluminium Bracket System
- 4 Aluminium 'T' or 'L' rail
- 5 Load bearing substrate

# Installation guide

## Screw fixed – Wooden frame

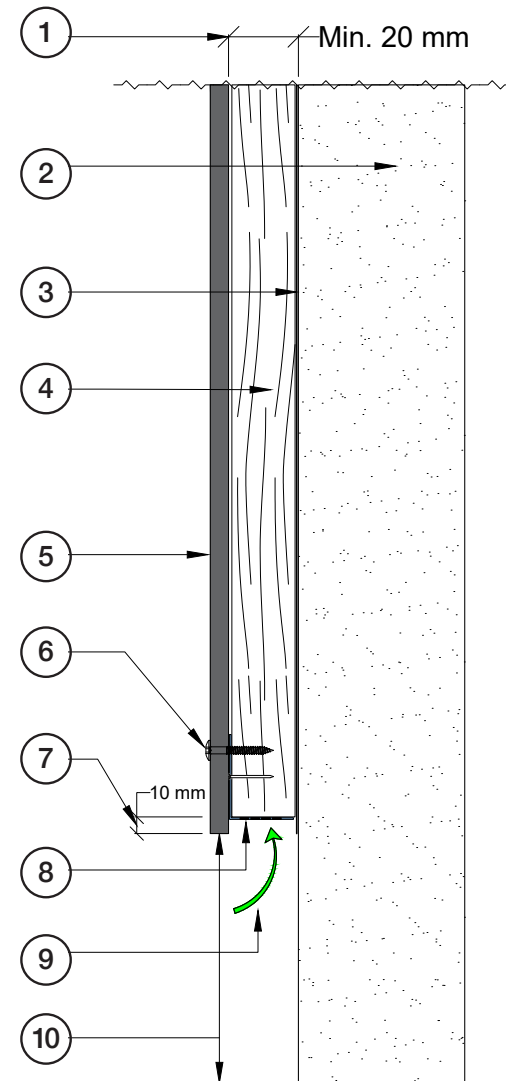
## General Arrangement of Timber Sub-Frame



- 1 Load bearing substrate
- 2 Timber battens: Min. 38 x 50 mm
- 3 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 4 Breather membrane (if required)
- 5 Universal Joint Profile (if required)
- 6 Hardie® Panel cladding
- 7 Hardie™ Panel screws for timber
- 8 150 mm minimum clearance from ground

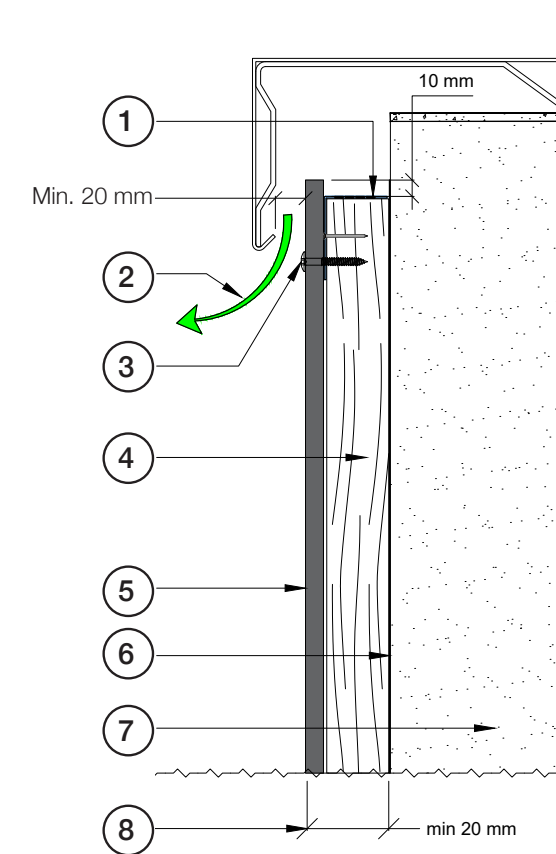


## Base Ventilation Detail



- 1 Ventilation gap
- 2 Load bearing substrate
- 3 Breather membrane (if required)
- 4 Timber battens: Min. 38 x 50 mm
- 5 Hardie® Panel cladding
- 6 Hardie™ Panel screws for timber
- 7 Minimum drip edge
- 8 Ventilation profile
- 9 Ventilation path
- 10 150 mm Clearance

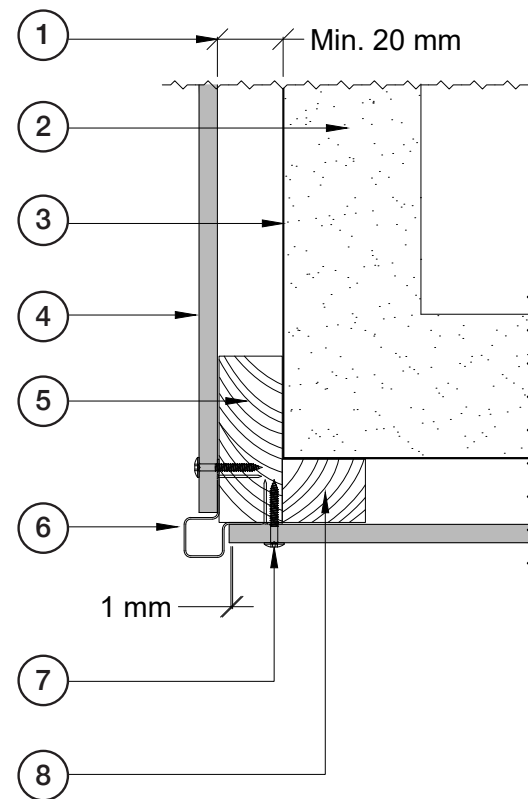
## Roof line ventilation detail



- 1 Ventilation profile
- 2 Ventilation path
- 3 Hardie™ Panel screws for timber
- 4 Timber battens: Min. 38 x 50 mm
- 5 Hardie® Panel cladding
- 6 Breather membrane (if required)
- 7 Load bearing substrate
- 8 Ventilation gap

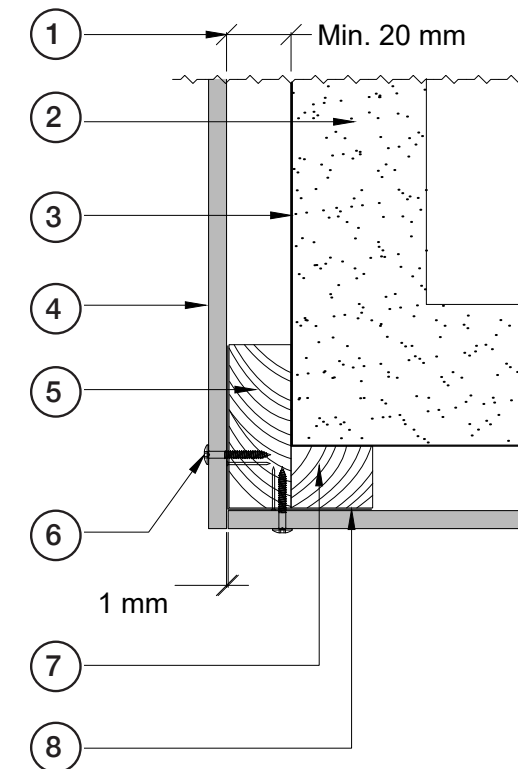


## External Corner with Metal trim - Timber Sub-Frame



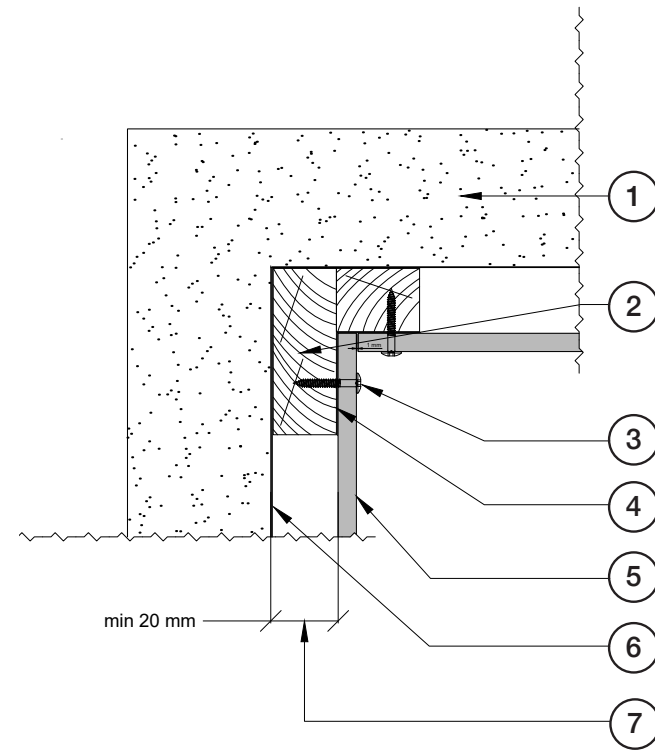
- 1 Ventilation gap
- 2 Load bearing substrate
- 3 Breather membrane (if required)
- 4 Hardie® Panel cladding
- 5 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 6 Metal external corner profile
- 7 Hardie™ Panel screws for timber
- 8 Timber battens: Min. 38 x 50 mm

## External Corner - Timber Sub-Frame



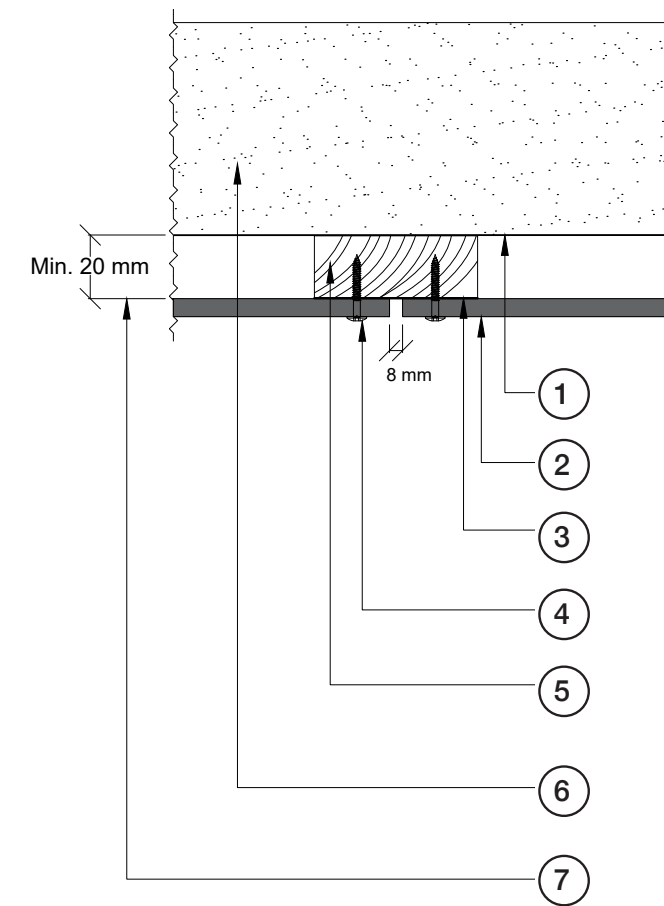
- 1 Ventilation gap
- 2 Load bearing substrate
- 3 Breather membrane (if required)
- 4 Hardie® Panel cladding
- 5 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 6 Hardie™ Panel screws for timber
- 7 Timber battens: Min. 38 x 50 mm
- 8 EPDM Tape

## Internal Corner - Timber Sub-Frame



- 1 Load bearing substrate
- 2 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 3 Hardie™ Panel screws for timber
- 4 EPDM Tape
- 5 Hardie® Panel cladding
- 6 Breather membrane (if required)
- 7 Ventilation gap

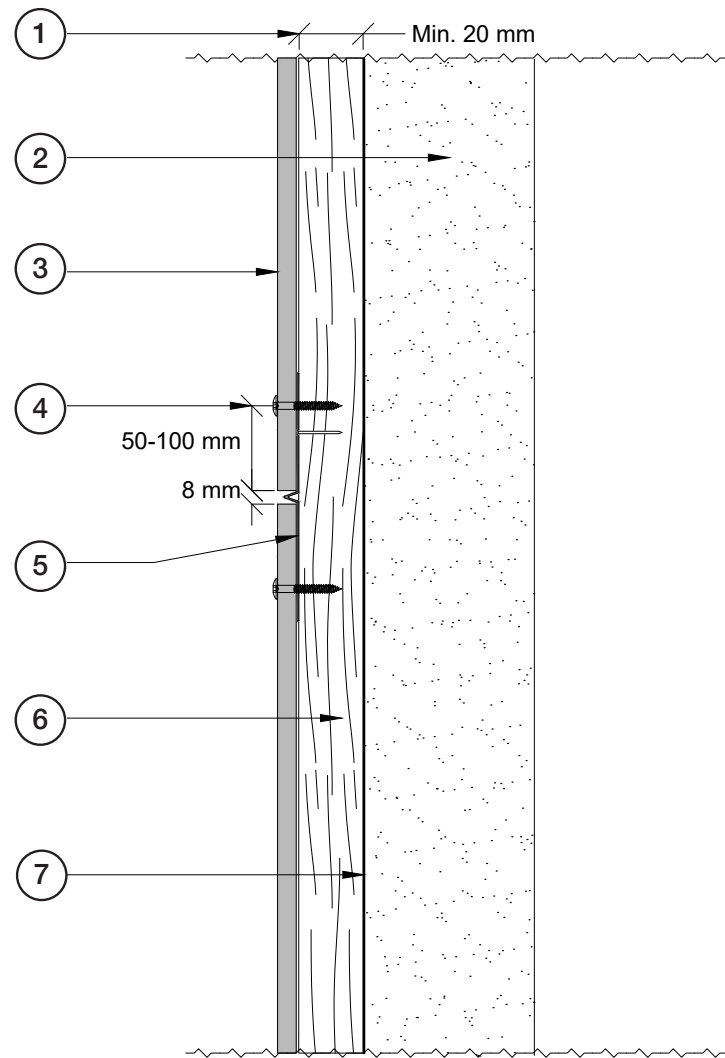
## Vertical joint - Timber Sub-Frame



- 1 Breather membrane (if required)
- 2 Hardie® Panel cladding
- 3 EPDM Tape
- 4 Hardie™ Panel screws for timber
- 5 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 6 Load bearing substrate
- 7 Ventilation gap

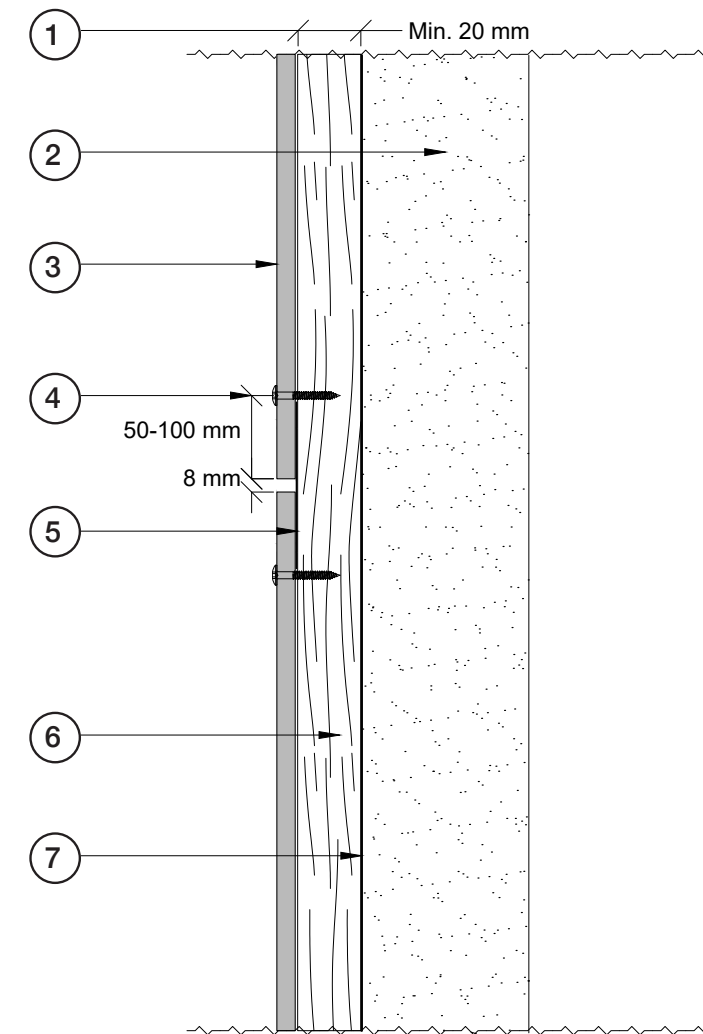


### Horizontal Joint With Trim - Timber Sub Frame



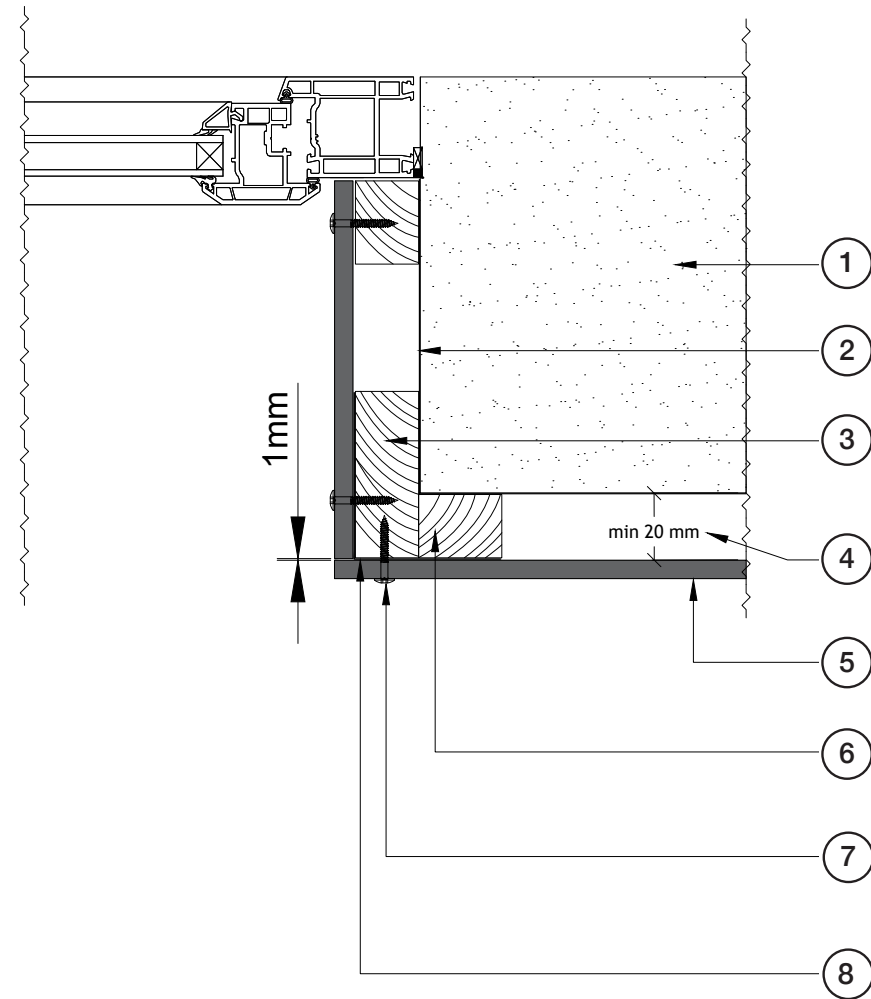
- 1 Ventilation gap
- 2 Load bearing substrate
- 3 Hardie® Panel cladding
- 4 Hardie™ Panel screws for timber
- 5 Universal joint profile
- 6 Timber battens: Min. 38 x 50 mm
- 7 Breather membrane (if required)

### Horizontal Joint - Timber Sub-Frame



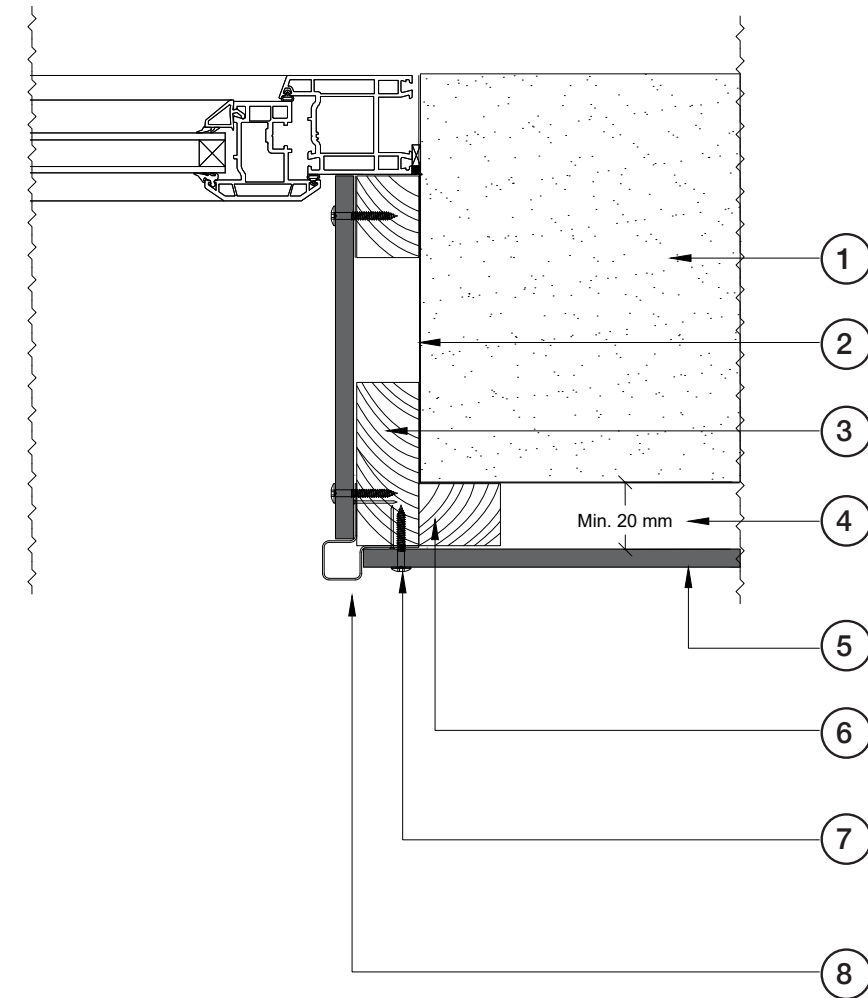
- 1 Ventilation gap
- 2 Load bearing substrate
- 3 Hardie® Panel cladding
- 4 Hardie™ Panel screws for timber
- 5 EPDM Tape
- 6 Timber battens: Min. 38 x 50 mm
- 7 Breather membrane (if required)

## Window Reveal - Timber Sub-Frame



- 1 Load bearing substrate
- 2 Breather membrane (if required)
- 3 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 4 Ventilation gap
- 5 Hardie® Panel cladding
- 6 Timber battens: Min. 38 x 50 mmmm
- 7 Hardie™ Panel screws for timber
- 8 EPDM Tape

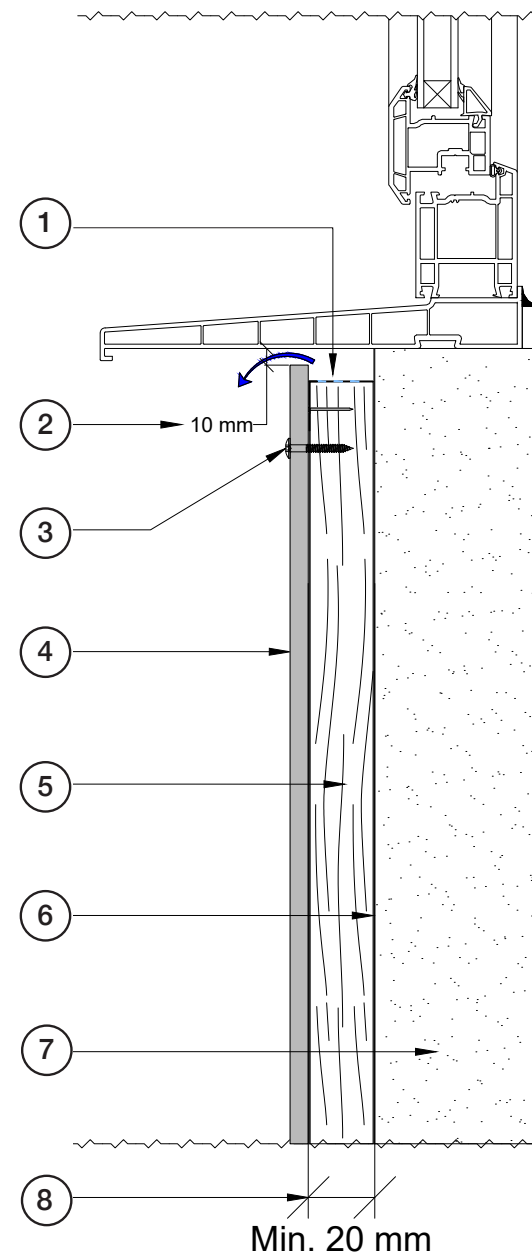
## Window Reveal with Metal Trim - Timber Sub-frame



- 1 Load bearing substrate
- 2 Breather membrane (if required)
- 3 Timber battens: 38 x 100 mm
- 4 Ventilation gap
- 5 Hardie® Panel cladding
- 6 Timber battens: Min. 38 x 50 mm
- 7 Hardie™ Panel screws for timber
- 8 Metal external corner profile

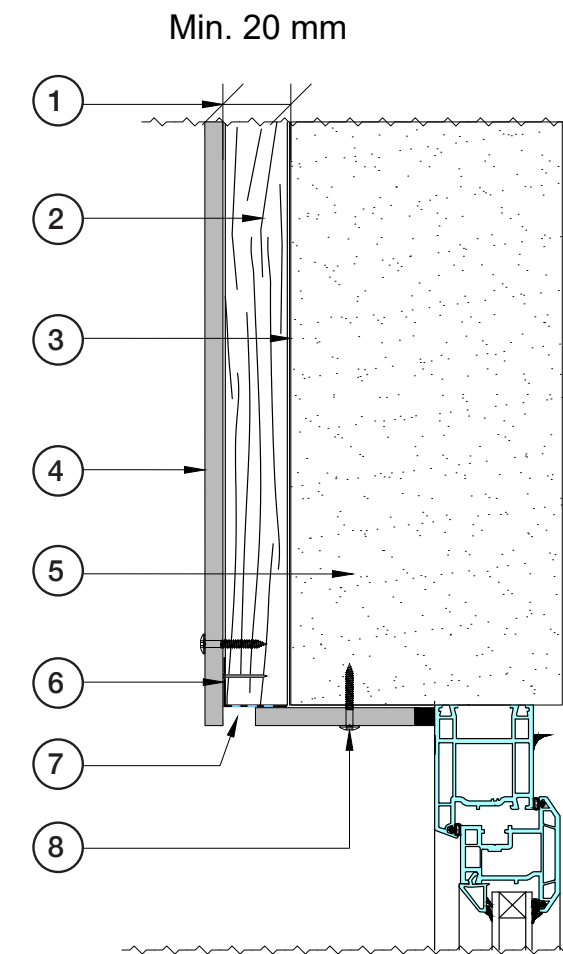


## Window Cill - Timber Sub-Frame



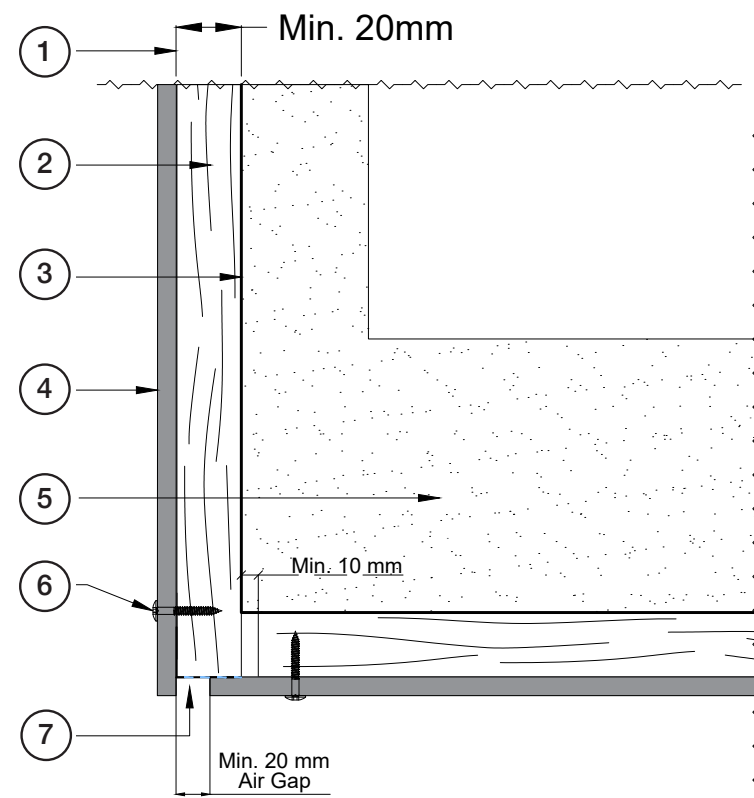
- 1 Ventilation profile
- 2 Air gap
- 3 Hardie™ Panel screws for timber
- 4 Hardie® Panel cladding
- 5 Timber battens: Min. 38 x 50 mmmm
- 6 Breather membrane (if required)
- 7 Load bearing substrate
- 8 Ventilation gap

## Window Head - Timber Sub-Frame



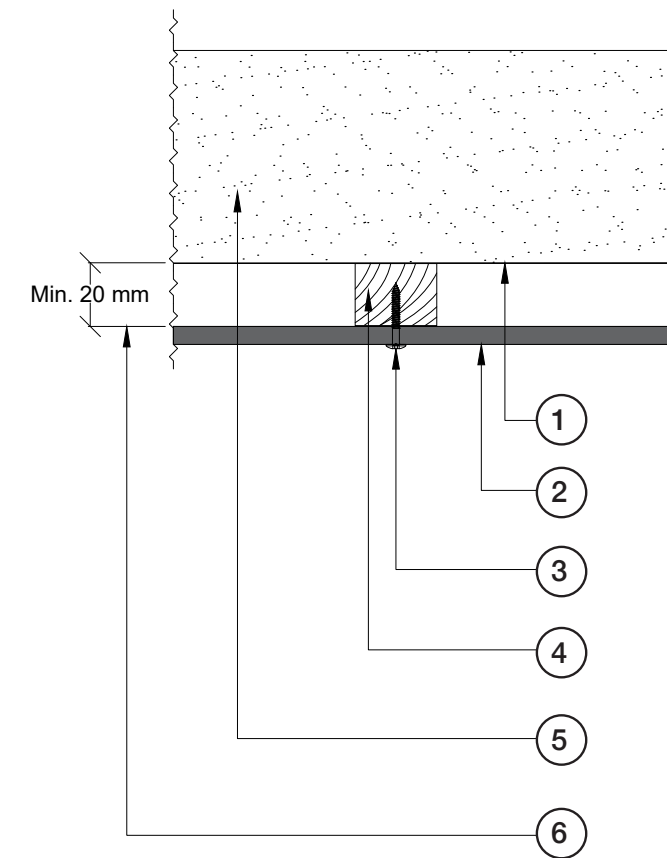
- 1 Ventilation gap
- 2 Timber battens: 38 x 100 mm
- 3 Breather membrane (if required)
- 4 Hardie® Panel cladding
- 5 Load bearing substrate
- 6 Ventilation profile
- 7 Air gap
- 8 Fixing by others

## Soffit Detail - Timber Sub-Frame



- 1 Ventilation gap
- 2 Timber battens: Min. 38 x 50 mmmm
- 3 Breather membrane (if required)
- 4 Hardie® Panel cladding
- 5 Load bearing substrate
- 6 Hardie™ Panel screws for timber
- 7 Ventilation profile

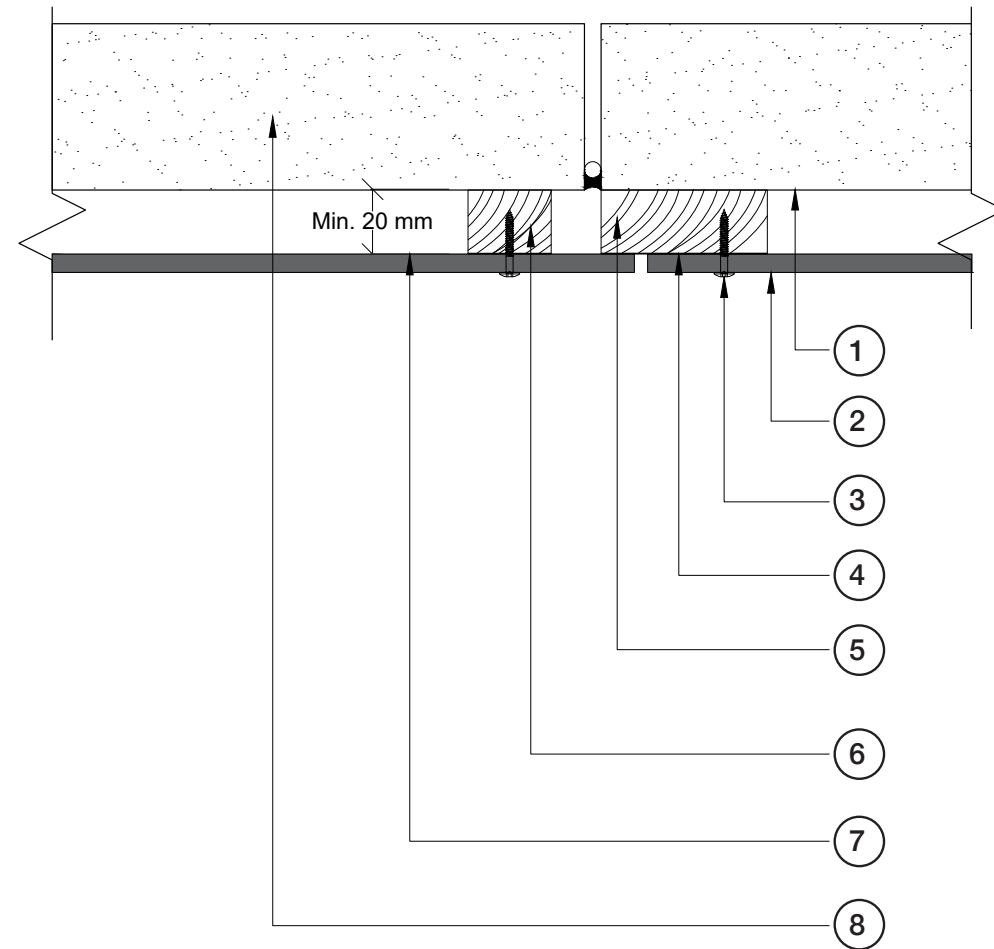
## Intermediate Joint - Timber Sub-Frame



- 1 Breather membrane (if required)
- 2 Hardie® Panel cladding
- 3 Hardie™ Panel screws for timber
- 4 Timber battens: 38 x 50 mm
- 5 Load bearing substrate
- 6 Ventilation gap

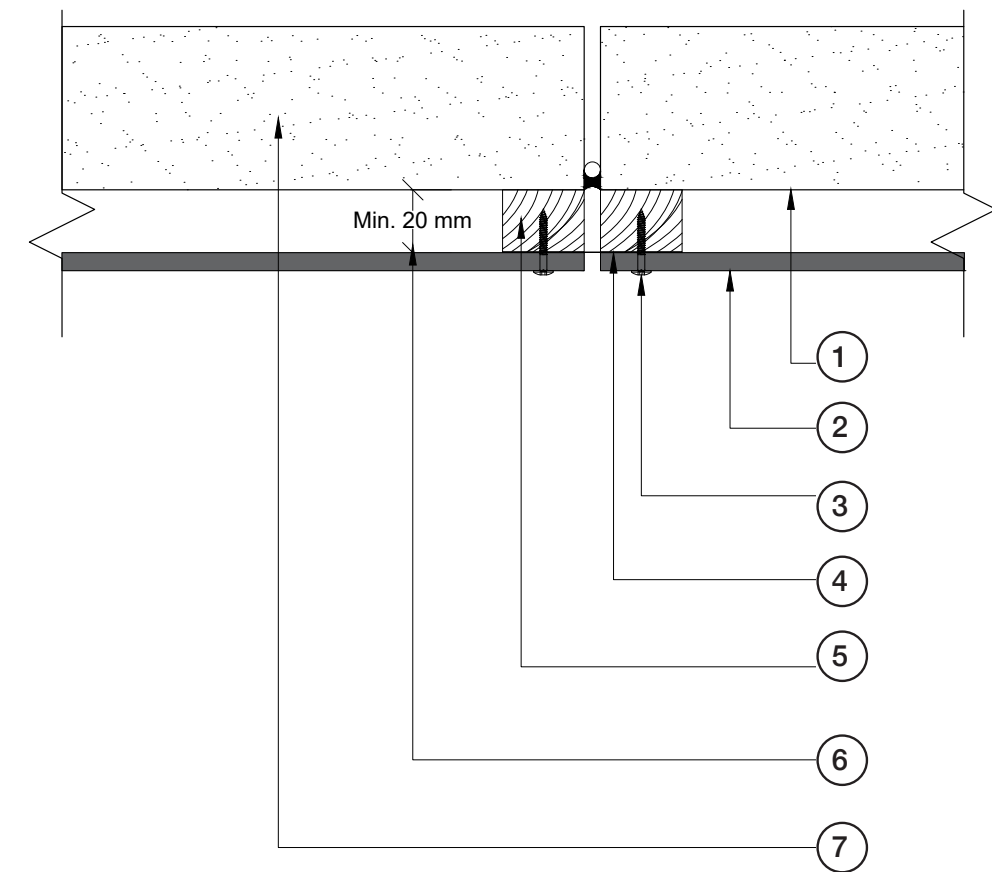


## Expansion Gap Detail Option 1 - Timber Sub-Frame



- 1 Breather membrane (if required)
- 2 Hardie® Panel cladding
- 3 Hardie™ Panel screws for timber
- 4 EPDM Tape
- 5 Timber battens: 38 x 100 mm or 2 sets 38 x 50 mm
- 6 Timber battens: Min. 38 x 50 mm
- 7 Ventilation gap
- 8 Load bearing substrate

## Expansion Gap Detail Option 2 - Timber Sub-Frame



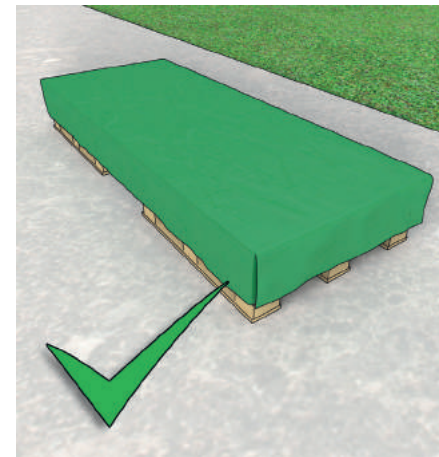
- 1 Breather membrane (if required)
- 2 Hardie® Panel cladding
- 3 Hardie™ Panel screws for timber
- 4 EPDM Tape
- 5 Timber battens: Min. 38 x 50 mm
- 6 Ventilation gap
- 7 Load bearing substrate



# Working with Hardie® Panel

## Storage and handling

Store flat and keep dry prior to installation. In storage a maximum of 4 pallets can be stacked 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 cladding will result in shrinkage at butt joints. The waterproof sheet should not cover the pallet timber to ensure adequate ventilation. James Hardie is not responsible for damage caused by improper storage and handling of the product.



Protect from rain



Carry panels on edge





## Cutting

### Cutting and Drilling Safety

As with 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 characterised as mineral dust and EU-approved respirators can be used in conjunction with the 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 Hardie™ Blade saw blade and HEPA e™ vacuum extraction.

#### Acceptable Cutting Method

Dust reducing circular saw with a Hardie™ Blade 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 Hardie™ Blade saw blade trademark.

**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 e™ vacuum to collect particles.

NOTE: When using the Hardie™ Blade sawblade, most circular saws will require the painted face of the boards to be downward facing. We advice this is double checked prior to cutting.

**ALWAYS** follow tool manufacturer's safety recommendations.

### High speed 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, FFP2/3) and warn others in the immediate area.

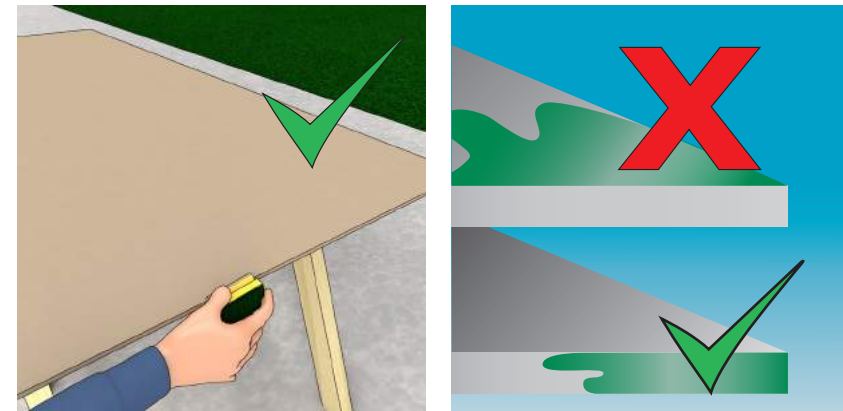
## Sealing

If cut to size the edges of the Hardie® Panel cladding must be sealed with Hardie™ Seal edge coating prior to installation. Hardie™ Seal edge coating should be applied with a small paint pad or household sponge.

**DO NOT APPLY HARDIE™ SEAL EDGE COATING TO THE FACE OF THE PRODUCT. HARDIE™ SEAL EDGE COATING SHOULD ONLY BE USED ON THE CUT EDGES.**

Hardie™ Seal edge coating may also be used to deal with small scratches and marks less than 6 mm in diameter.

Wipe off any excess from the front face immediately. The paint should be used sparingly and restricted to the area of damage otherwise it may become visible. If the damage is still visible the panel should be replaced.



# Installation

## Preparation

### 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.

### Structure

The structural wall to which Hardie® Panel 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 made of masonry, timber or steel. In the case of the latter, a sheathing board must be installed over the frame/ behind the rainscreen facade.

### Waterproof Membrane

A waterproof membrane is required if the substrate is not waterproof. Fix a waterproof membrane 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.

### Preparing the Frame

The sub frame creates a ventilation cavity (minimum 20 mm) between Hardie® Panel cladding and the substrate. The top and base of the frame must be finished with a ventilation grille. Horizontal framing should be avoided as this can block the ventilation.

## Maintenance

### Annual Inspection

Environmental impacts may influence the visual appearance of the facade 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 facade cladding.

### Impact from Nature

The weather and nearby green plants may affect the appearance of the facade cladding. Pollution, dust and leaves from trees, bushes and flowers can have an impact on the facade. Ensure plants are cut back from the facade and regularly clear gutters. Hardie® Panel cladding is manufactured from weather resistant raw materials and will not be attacked by algae, rot and dry rot.

### Cleaning

Hardie® Panel cladding can be cleaned with cold or lukewarm water from a garden hose. If necessary add a mild household cleaning agent not containing solvents. Always start from the top with well-defined areas. Rinse with clean water. Before cleaning full scale, it is recommended to test the chosen cleaning method on a smaller area to make sure it is fit for purpose.

### 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 benzalconiumchloride 2.5% active that has a long term effect preventing new growth. After wetting the facade 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.

### High Pressure Cleaning

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





# Keeping safe and getting help

## Health and Safety

### 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 is 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 controlled dust cutting tools, such as the Hardie™ Blade saw blade fitted to a low dust 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.jameshardie.co.uk](http://www.jameshardie.co.uk) or call James Hardie.

## General information

### Service

If you have any questions regarding Hardie® Panel 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 GmbH. This document can be found at [www.jameshardie.co.uk](http://www.jameshardie.co.uk).

### 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. James Hardie Building Products Ltd One Fleet Place, London EC4M 7WS

T: 0121 311 3480  
E: [info@jameshardie.co.uk](mailto:info@jameshardie.co.uk)  
[www.jameshardie.co.uk](http://www.jameshardie.co.uk)

### Disclaimer

The information contained in this publication and otherwise supplied to users of Hardie® Panel 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).



# Project support



Order your Hardie® Panel sample now:  
[www.jameshardie.co.uk/panel-sample-request](http://www.jameshardie.co.uk/panel-sample-request)



Find all technical documents:  
[www.jameshardie.co.uk/technical-literature](http://www.jameshardie.co.uk/technical-literature)



Hardie® Panel cladding has been assessed by the British Board of Agrément and has been awarded BBA certificate number 05/4248.



The ecobau institute in Switzerland has confirmed that Hardie® Panel is fulfilling the highest requirements concerning ecological performance by awarding the highest possible certificate of eco-1.



We are delighted to offer Continuous Professional Development (CPD) presentations on the Creating Safe and Enduring Facade Systems. As members of the RIBA CPD Providers Network, all of our courses are RIBA approved.

Following the seminar, our specification team will be happy to discuss any projects you may be working on at the moment, offer general advice and arrange for project take-offs to be supplied to you free of charge. Contact us for more info: [info@jameshardie.co.uk](mailto:info@jameshardie.co.uk)





You will find the latest version of this brochure in digital form on our website. Technical modifications subject to changes. Should you require additional information, please contact our customer service.

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