FWPA Standard D01

Design and installation of exterior timber wall cladding

2025

Edition 1

FWPA
Forest & Wood Products Australia

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FWPA Standard D01

Design and Installation of Exterior Timber Wall Cladding

First Edition

The Standard has been taken through a formal public review process under the guidance of the FWPA Exterior Timber Cladding Standards Writing Committee. This FWPA Standard was issued for comment on the 13th of November 2024, for a period of 12 weeks, approved on behalf of FWPA by the Standards Writing Committee (SWC) on 17th November 2025 and published on 05th December 2025.

FWPA wishes to acknowledge the participation of expert individuals who contributed to the development of the Standard through their representation on the SWC and through the public comment period.

Keeping Standards up-to-date

FWPA Standards are living documents that reflect progress in science, technology, systems, and regulations. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using the current Standard, which should include any since the Standard was published.

Detailed information about FWPA Standards, drafts, amendments and new projects can be found by visiting www.fwpa.com.au.

FWPA welcomes suggestions for improvements and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities.

Preface

The objective of this FWPA Standard is to provide designers and manufacturers with comprehensive solutions for the design and installation of exterior timber wall cladding, subject to the requirements and limitations described in the Scope.

Cladding systems consist of three components: the supporting wall system, the cladding, and the fixings. The cladding, an exterior, non-loadbearing layer, primarily protects the building from water ingress and weather-related effects. It can also offer secondary benefits such as sound and thermal insulation, along with enhanced fire resistance.

In respect of the application of this Standard:

(a) Statements expressed in mandatory terms in NOTES to tables or diagrams are deemed to be requirements of this Standard.

(b) NOTES to text contain general information and guidance. They are not an integral part of the Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the Appendix to which they apply. A ‘normative’ Appendix is an integral part of this Standard, whereas an ‘informative’ Appendix is only for information and guidance.

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Section 1 Scope and General

1.1 Scope

This FWPA Standard D01 Design and Installation of Exterior Timber Wall Cladding 2025, (referred to hereafter as “Standard”), sets out the requirements of materials, construction, design and installation of external timber cladding systems to be used in new building work in Class 1-10 buildings as defined in the National Construction Code (NCC).

1.2 Application

This Standard shall be used in conjunction with the AS/NZS 1170 series and AS 4055 where appropriate. This Standard is unsuitable for exterior timber cladding to be installed where wind speeds greater than an Ultimate Limit State wind of 50 metres per second are achieved, construction below the flood hazard level or in applications assessed to have a site risk factor greater than 20 (refer to Clause 2.10). This Standard only applies to timber cladding NOT being used as the primary water control layer.

NOTE Cladding systems may have additional requirements beyond the scope of this Standard, for example, applications within bushfire-prone areas.

1.3 Normative documents

The following are the normative documents referred to in this Standard:

AS 1397 Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium

AS 1684.2 Residential timber-framed construction, Part 2: Non-cyclonic areas

AS 1684.3 Residential timber-framed construction, Part 3: Cyclonic areas

AS 1684.4 Residential timber-framed construction – Noncyclonic areas (simplified)

AS 1720.1 Timber structures, Part 1: Design methods

AS 1810 Timber - Seasoned cypress pine - Milled products

AS 1859.1 Reconstituted wood-based panels - Specifications, Part 1: Particleboard

AS 2796.1 Timber - Hardwood - Sawn and milled products, Part 1: Product specification

AS 3700 Masonry Structures

AS 3959 Construction of buildings in bushfire-prone areas

AS 4055 Wind loads for housing

AS 4200.2 Pliable building membranes and underlays Part 2: Installation requirements

AS 4387 Electroplated coating of zinc on steel fasteners with imperial threads

AS 4312 Atmospheric corrosivity zones in Australia

AS 4773.1 Masonry in small buildings Design

AS 4773.2 Masonry in small buildings, Part 2: Construction

AS 4785.1 Timber - Softwood - Sawn and milled products, Part 1: Product specification

AS 5604 Timber - Natural durability ratings

AS/NZS 1170.1 Part 1: Permanent, imposed and other actions

AS/NZS 1170.2 Part 2: Wind actions

AS/NZS 1604.1 Preservative-treated wood-based products - Products and treatment

AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate

AS/NZS 1859.4 Reconstituted wood-based panels - Specifications, Part 4: Wet process fibreboard

AS/NZS 2269.0 Plywood - Structural – Specifications

AS/NZS 2271 Plywood and blockboard for exterior use

AS/NZS 2904 Damp-proof courses and flashings

AS/NZS 4200.1 Pliable building membranes and underlays Part 1: Materials

AS/NZS 4600 Cold-formed steel structures

ASTM A240 Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

ASTM A276 Standard Specification for Stainless Steel Bars and Shapes

ASTM A666 Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar

EN 10088-1 Stainless Steels - Part 1: List of Stainless Steels

JIS G4305 Stainless Steel Plate

NASH Standard – Residential and Low-rise Steel Framing Part 1: Design Criteria

NASH Standard – Residential and Low-rise Steel Framing - Part 2: Design Solutions

National Construction Code, Building Code of Australia Volumes One and Two

AIRAH DA07 Criteria for Moisture Control Design Analysis in Buildings

NOTE Documents referenced for informative purposes are listed in the Bibliography.

1.4 Notations

The following symbols are used in this Standard.

B = Breadth of the member

D = Depth of the member

1.5 Definitions

1.5.1 Castellated batten: A batten containing regularly spaced, vertical grooves used to provide a drainage pathway in a wall cavity.

1.5.2 Cavity wall construction: A wall that allows air flow and moisture flow.

1.5.3 Climate zone: An area defined in the NCC for specific locations having a range of similar climatic characteristics.

1.5.4 Cladding board: A narrow timber board used in a cladding system.

1.5.5 Cladding system: Weather resistant layer applied to the exterior of the building to protect it from elements and enhance its appearance.

1.5.6 Cyclonic regions: Wind Regions C and D as defined in AS/NZS 1170.2 or site classifications C1 to C4 in AS 4055.

1.5.7 Direct fix cladding wall: A wall with cladding attached directly to the wall framing or structural substrate, without the use of a drained cavity.

1.5.8 Drainage cavity: A minimum 18mm cavity between the interior side of the cladding envelope and the supporting structure, which allows water to dissipate to the external environment and provides air circulation.

1.5.9 Fastener spacing: The maximum distance between fasteners measured along the centreline of the supporting member.

1.5.10 Hand-driven nail: A nail driven by a hand hammer.

1.5.11 Hardboard wall cladding board: Cladding boards made from hardboard. See Appendix A for common profiles.

1.5.12 Machine-driven nail: A nail driven by a machine.

1.5.13 Low rainfall intensity: An area with a 5-minute rainfall intensity for an annual exceedance probability of 5% of not more than 125 mm/hour.

1.5.14 Non-cyclonic regions: Wind Regions A and B as defined in AS/NZS 1170.2 or site classifications N1 to N4 in AS 4055.

1.5.15 Pliable building membrane: A material that can be folded back on itself without causing structural damage to the product that affects its material properties.

1.5.16 Secret (concealed) fastener profile: A cladding fixed by a secret (hidden) nail, screw, staple, bracket or clip, etc.

1.5.17 Serviceability limit state: A limit state of acceptable in-service condition.

1.5.18 Shall: Indicates that a statement is mandatory.

1.5.19 Should: Indicates a recommendation.

1.5.20 Spacer batten: A batten used to provide a space between the cladding and the structural substrate which does not provide structural support to the cladding.

1.5.21 Structural batten: Battens that are required to support the load from the cladding.

1.5.22 Timber cladding profiles: Profiles refers to the shape or outline of the cladding. See Appendix B for common types of timber cladding profiles.

1.5.23 Seasoned: Timber in which the average moisture content is not greater than 15%.

NOTE 1 Seasoned milled timber products may have a maximum moisture content greater than 15% at the time of manufacture.

NOTE 2 Seasoned timber is sometimes referred to as 'dry', 'air-dried' or 'kiln-dried' timber.

NOTE 3 Milled timber products may have a moisture content greater than 15% at the time of manufacturing.

1.5.24 Stress grade: A classification assigned to structural timber or wood products indicating a suite of characteristic values of strength and stiffness suitable for structural design.

1.5.25 Unseasoned: Timber in which the average moisture content exceeds 25%.

NOTE Unseasoned timber is sometimes referred to as 'green' timber.

1.5.26 Water control layer: Continuous layer around the building envelope inclusive of walls that is designed to keep water out of the building.

1.5.27 Water sensitive materials: Materials with an inherent capacity to absorb water including timber, plasterboard, plywood and oriented strand board.

1.5.28 Weatherboard: Bevelled or splayed cladding boards.

1.6 Materials

Materials used to manufacture cladding systems shall be selected based on an assessment of their suitability for the intended purpose. This assessment must consider factors such as the structural properties of the substructure (e.g., frame or battens), characteristics affecting fixing performance, adhesive properties, dimensional tolerances, timber species, moisture content, preservative treatments, and corrosion protection. To meet the requirements of this Standard, these materials must comply with the standards listed below:

1.6.1 Aluminium

Aluminium used for brackets, joiners, corner and end profiles shall conform to the requirements of AS/NZS 1734.

1.6.2 Stainless steel

Stainless steel used for fixings, brackets, joiners, corner and end profiles shall conform to the requirements of ASTM A240, ASTM A276, ASTM A666, EN-10088-1 or JIS G4305, as applicable.

1.6.3 Steel

Steel used for fixings, brackets, joiners, corner and end profiles shall be metallic-coated steel, conforming to the requirements of AS 1397 for minimum coatings Class Z450, AZ50 or AM125.

The level of corrosion protection provided shall take into consideration weather exposure, contact with preservative-treated timber, moisture and the presence of salt.

1.6.4 Timber

Timber cladding boards or sheets shall comply with these standards as appropriate:

(a) Structural plywood AS/NZS 2269.0 & AS/NZS 2271.

(b) Profiled timber cladding systems:

  i. Softwood AS 4785.1

  ii. Cypress AS 1810

(c) Hardwood AS 2796.1

(d) Hardboard reconstituted wood AS 1859.4

NOTE 1 Unseasoned and seasoned products should not be mixed.

NOTE 2 Where mixed species are used, the species should have similar shrinkage characteristics.

NOTE 3 Cladding profiles should be sourced from one supplier, as dimensional variations may occur between manufacturers.

NOTE 4 Where cladding is used for the building's bracing requirements, the durability of the cladding used for bracing shall be in line with the expected design life of the building.

1.6.5 Rebates and overlaps in timber cladding

A timber cladding board or sheet is acceptable for use as an outer layer to deflect water where it overlaps or engages.

1.6.6 Pliable building membranes

Pliable building membranes shall be tested to AS/NZS 4200.1 and installed in accordance with AS 4200.2. This membrane will be considered the primary water control layer when classified as a water barrier and air barrier.

Section 2 Design

2.1 General

This Section sets out the requirements for the design of exterior timber cladding systems.

NOTE 1 This Section requires the specification of the supporting structure, in order to define the capacity of the cladding and fasteners, but the scope of this Section does not cover the design of the supporting structure.

NOTE 2 The supporting structure is assumed to be stable in its own weight, under the intended loading conditions.

NOTE 3 The cladding system is not designed to carry loads from accessories fixed to the cladding, e.g., air-conditioning units, vents, antennas, photovoltaics, or similar.

2.2 Loading

The cladding and its fasteners shall be designed to withstand the wind loads and self-weight on the cladding system and ancillary elements.

2.3 Imposed loads

Imposed loads shall be appropriate for the wall cladding as defined in AS/NZS 1170.1.

2.4 Recording of material and installation specification

Material and installation specifications shall be recorded in the design documentation.

Design documentation shall include the following:

(a) A statement that the design meets the requirements of this Standard.

(b) Specification of the cladding board or panel including:

  i. Cladding board or panel type (hardboard or plywood).

  ii. Timber species (if applicable).

  iii. Profile of cladding board or sheet type.

  iv. Dimension, specification and configuration of fasteners.

  v. Cladding spans (e.g. span dimension and direction).

(c) Design wind pressure or classification.

(d) A statement that indicates if the battens (structural battens) or the structural substrate is to support the cladding.

(e) Limitations on the attachment of auxiliary items.

2.5 Substructure

2.5.1 Timber

Timber framing to which cladding boards or panels are attached shall comply with the following:

(a) Design of timber structures: AS 1720.1; or

(b) Residential timber-framed construction – noncyclonic areas: AS 1684.2; or

(c) Residential timber-framed construction – cyclonic areas: AS 1684.3; or

(d) Residential timber-framed construction – noncyclonic areas (simplified) AS 1684.4; or

(e) For mass timber, designed in accordance with the design of timber structures specified in AS 1720.1.

Where the structural timber framing is located within a drainage cavity, such as structural battens, they shall be at least above-ground natural durability Class 2 or H3 treated in accordance with AS/NZS 1604.1. Each batten shall span at least three supporting elements.

NOTE Where an envelope preservative treatment is used, reinstatement of treatment around cuts, notches, etc, is required.

2.5.2 Steel

Steel framing to which cladding boards or panels are attached shall comply with the following:

(a) Residential and low-rise steel framing:

  i. Design: NASH Standard Residential and Low-Rise Steel Framing Part 1; or

  ii. Design solutions: NASH Standard Residential and Low-Rise Steel Framing Part 2; or

(b) Steel structures: AS 4100; or

(c) Cold-formed steel structures: AS/NZS 4600.

NOTE Consider thermal breaks for energy efficiency requirements.

2.5.3 Masonry

Masonry to which cladding boards or panels are attached shall comply with the following:

(a) Masonry Structures AS 3700; or

(b) Masonry in small buildings Design Parts 1 and 2: AS 4773.1 and AS 4773.2.

2.6 Use of cladding

Timber cladding shall not be used as the primary water control layer.

NOTE The use of cavity wall construction or direct fix claddings is driven by risk, from exposure to conditions that may be conducive to moisture ingress and condensation.

2.7 Direct fixed cladding construction

Direct fixed cladding requires a pliable building membrane as the primary water control layer, tested to AS/NZS 4200.1 and installed in accordance with AS 4200.2, placed between the structure and the exterior cladding.

2.8 Cavity construction

Cavity construction requires a pliable building membrane as the primary water control layer, tested to AS/NZS 4200.1 and installed in accordance with AS 4200.2, placed between the battens and the support structure.

2.9 Water-sensitive materials

Where water-sensitive materials, such as timber framing, plywood and OSB bracing, plasterboard, glass wool insulation, and the like, are used in any part of the exterior wall construction, direct fixed exterior cladding requires a pliable building membrane complying with AS/NZS 4200.1 and installed in accordance with AS 4200.2 placed between the water-sensitive material and the exterior cladding.

Timber framing, plywood, hardboard, or OSB are not considered water-sensitive materials if they meet the following criteria:

(a) Above-ground durability rating of 2 in accordance with AS 5604, (which classifies timber based on its natural durability).

(b) Preservative treated to H3 as per AS/NZS 1604.1.

2.10 Risk factor and score

An assessment of the risk is to be calculated from Table 2.1 for the wall cladding system under consideration. Additional assessments are to be conducted where ever the building may differ from another part. These include a change in the number of storeys, exposure conditions of the roof/wall junction, eaves width, envelope complexity, and the addition of a deck, porch or balcony.

Where the risk assessment is found to be:

(a) Less than or equal to 6, then direct fixed cladding may be used.

(b) For risk assessments of 7 to 20 inclusive, cavity cladding is required.

(c) For risk assessment greater than 20, this condition is outside this Standard's Scope, and expert advice is required.

NOTE This requirement is based on External moisture – A guide to using the risk matrix, Ministry of Business, Innovation & Employment, New Zealand, July 2013.

Table 2.1 Risk factors and scores

Risk factor	Category	Risk severity	Score
Wind region	Region A (AS/NZS 1170.2)	Low to medium	0
	Region B (AS/NZS 1170.2)	Low to medium	0
	Region C (AS/NZS 1170.2)	High	1
	Region D (AS/NZS 1170.2)	Very high	2
Number of storeys	One storey	Low	0
	Two storeys in part	Medium	1
	Two storeys	High	2
	More than two storeys	Very high	3
Roof/wall junctions	Roof-to-wall junctions are fully protected	Low	0
	Roof-to-wall junctions partially exposed	Medium	1
	Roof-to-wall junctions fully exposed	High	3
	Roof elements finishing within the boundaries formed by the external walls	Very high	5
Eaves width	More than 600 mm for single storey	Low	0
	451-600 mm for single storey	Medium	1
	More than 600 mm for two storey		
	101-450 mm for single storey	High	2
	451-600 mm for two storey		
	More than 600 mm for the above two storeys		
	0-100 mm for single storey	Very high	5
	0-450 mm for two storey		
	Less than 600 mm for above two storey		
Envelope complexity	Simple shape with single cladding type	Low	0
	Complex shape with not more than two cladding types	Medium	1
	Complex shape with more than two cladding types	High	3
	As for high-risk but with fully exposed roof-to-wall junctions	Very high	6
Decks, porches and balconies	None	Low	0
	Timber slat deck or porch at ground level	Medium	2
	Timber slat deck attached at the first or second floor		
	Fully covered in plan view by the roof		
	Balcony exposed in plan view at first-floor level	High	4
	Balcony cantilevered at first-floor level		
	Balcony exposed in plan view at second-floor level or above	Very high	6
	Balcony cantilevered at second-floor level or above		

NOTE 1 This Table is based on NCC Volume One Table F3V1a and NCC Volume Two Table H2V1a. Refer to the NCC to confirm current provisions.

NOTE 2 Eaves width is measured horizontally from the external face of any wall cladding to the outer edge of any overhang, including fascia and external gutters.

NOTE 3 Barriers to prevent falling and parapets are considered as 0 mm eaves.

2.11 Condensation management and water vapour management

Timber cladding shall be installed with a ventilated cavity unless it can be verified through hygrothermal calculations that conditions will not occur that are conducive to mould growth. Appendix C contains timber cladding systems that have been calculated to meet the NCC Condensation requirements.

NOTE 1 AIRAH DA07 outlines the calculation procedure for mould growth in construction assemblies and sets a threshold of mould index < 3.

NOTE 2 Climate Zone locations are specified in the National Construction Code.

NOTE 3 The suitability of a generic cladding system to prevent condensation may not be possible for all climate zones.

NOTE 4 Where cladding systems are in Climate Zone 1 and 8, unique design and modelling are required in accordance with the National Construction Code.

2.12 Spacer battens and structural battens

The requirements for the use of a spacer or structural batten depends on their application and if they are intended to support a load.

2.12.1 Spacer battens

Spacer battens provide a gap between the substrate framing and cladding, they do not perform a structural role; (see Figure 1). Spacer battens shall align directly over the substrate framing or base structural wall. The fasteners used shall transverse through the batten and fix into the structural substrate. Refer to Section 4 for fasteners and fixing requirements.

Timber spacer battens are not required to have a stress grade. All spacer battens are to be installed over vapour-permeable, pliable building membranes.

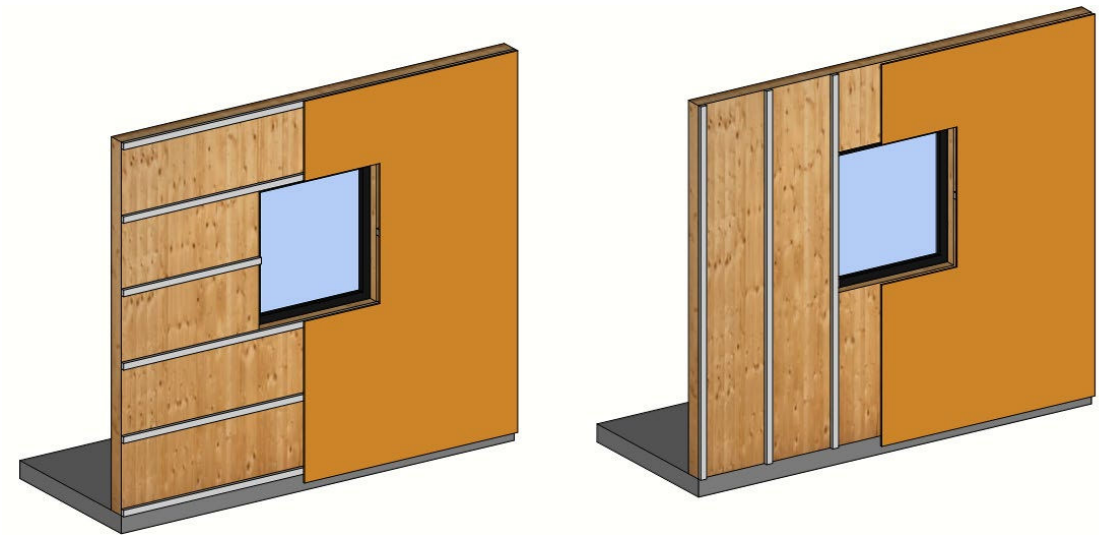


Figure 1: Spacer battens used over a structural masonry or CLT substrate

NOTE 1 Battens run vertically for most cladding and sheet-based systems. This batten direction allows for moisture movement by gravity and maintains a controlled ventilation path.

NOTE 2 For clarity, the primary water control layer is not shown.

NOTE 3 Battens that run horizontally need to provide provision for drainage (spacers).

2.12.2 Structural battens

Structural battens support the cladding directly without the cladding fastener traversing the batten into the substructure (see Figure 2).

Structural battens shall be made of timber or steel and have the appropriate durability; refer to Clause 2.5. All structural battens are to be installed over vapour-permeable, pliable building membranes; refer to Clause 2.5. For the minimum size of fixings, refer to Table 2.2.

For the size of the structural battens, use one or a combination of the following methods:

(a) Timber:

  i. Design to AS 1720.1; or

  ii. Table 2.3.

(b) Steel – Design solutions: NASH Standard Residential and Low-Rise Steel Framing Part 2.

Table 2.2 Number of fixings and sizes – Structural batten to wall frame

Maximum wind classification or Ultimate Limit State design gust wind speed (m/s)	Maximum batten spacing (mm)	Maximum stud spacing	
		450 mm	600 mm
		Number / Size of fixing (length x diameter – mm)	
Timber wall frame			
N3 or 50 (Region A and B)	400	*1 / 90 x 3.05 DS 2 / 90 x 3.05 PS 1 / 65 x 4.9 S	2 / 90 x 3.05 DS 1 / 65 x 4.9 S
	Up to and including 900	2 / 65 x 4.9 S 1 / 65 x 6.3 S	2 / 65 x 4.9 S 1 / 75 x 6.3 S
C1 or 50 (Region C and D)	Up to and including 900	2 / 65 x 4.9 S 1 / 75 x 6.3 S	2 / 75 x 4.9 S 1 / 85 x 6.3 S
Steel wall frame			
Refer - NASH Standard Residential and Low-Rise Steel Framing Part 2			

** For use only with 40 mm x 40 mm structural battens – refer Table 2.3*

NOTE 1 Fixing capacity based on timber wall framing with a strength group of JD5 e.g., radiata pine.
NOTE 2 A minimum of two (2) fixings required per joint unless otherwise indicated.
NOTE 3 Maximum 45 mm timber batten thickness.
NOTE 4 DS – Annular or helical deformed shank nail, PS – Plain shank nail, S – Type 17 screw: 4.9 mm diameter (No. 10 gauge screw), 6.3 mm diameter (No. 14 gauge screw).
NOTE 5 Wind loads within 1,200 mm of corners/edges have been designed for.

Table 2.3 Minimum structural timber batten size

Maximum wind classification or Ultimate Limit State design gust wind speed (m/s)	Maximum batten spacing (mm)	Maximum stud spacing	
		450 mm	600 mm
		Minimum timber batten section size (mm) and stress grade	
Up to and including N3 or 50 (Region A and B)	400	*40x40 F4 35x70 F5 35x70 MGP10	35x70 F5 35x70 MGP10
	Up to and including 900	35x70 F5 35x70 MGP10	35x70 F5 35x70 MGP10
C1 or 50 (Region C and D)	Up to and including 900	35x70 F5 35x70 MGP10	35x70 F7 35x70 MGP10

** Only one nail per batten/stud crossing permitted – refer Table 2.2.*

NOTE 1 Timber structural battens shall be continuous and fixed to a minimum of 3 studs.

NOTE 2 The maximum continuous span of timber structural battens shall be 600 mm.

NOTE 3 Timber structural battens may be castellated (notched) on their vertical faces for ventilation.

NOTE 4 Notching shall be a minimum area of 1,000 mm^2/m and have a maximum notch depth of 5 mm.

NOTE 5 Where castellations occur on both faces, they shall be staggered with no overlap.

NOTE 6 The top and/or bottom of timber structural battens may be sloped for drainage. Any slope shall fall towards the cladding on the top edge and be a maximum of 5 mm over the breadth of the batten, with allowance for moisture egress against the face of the cladding using castellations in the battens or profiled cladding.

NOTE 7 Any notching and sloping shall be subtracted from the minimum section size.

NOTE 8 Wind loads within 1,200 mm of corners/edges have been designed for.

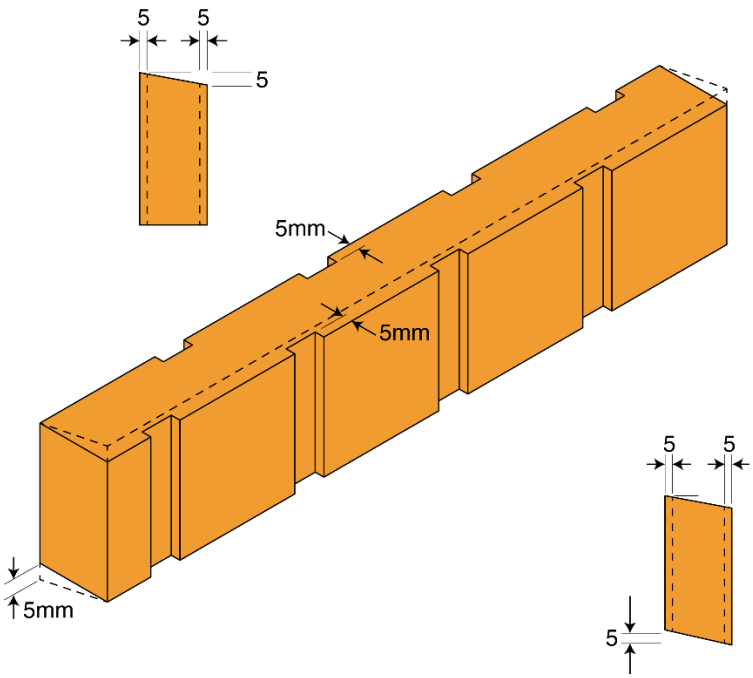


Figure 2 Castellated Battens

NOTE Castellations to be a maximum notch depth and chamfered/sloped edge of 5 mm.

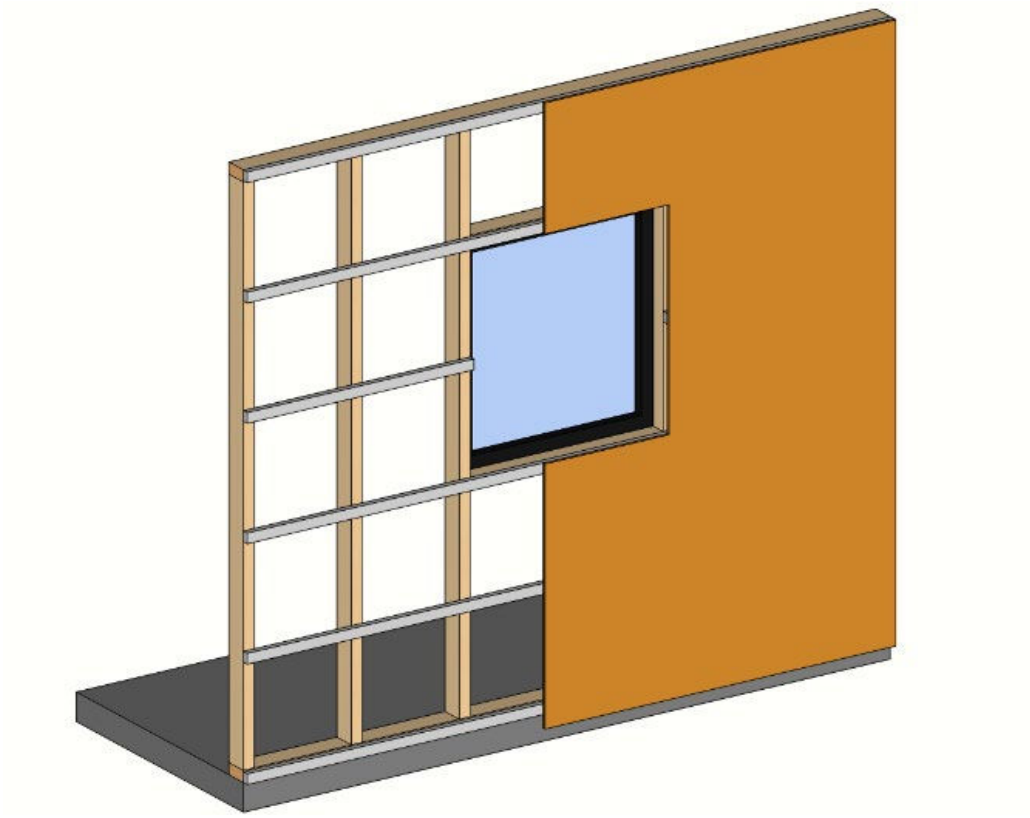


Figure 3: Structural battens used for vertical cladding over a framed structural wall

NOTE 1 Horizontal battens must allow for ventilation and drainage in the cavity.

NOTE 2 For clarity, the primary water control layer is not shown.

2.13 Diagonal or vertical timber profiled cladding

Cladding boards fixed in a vertical or diagonal manner shall use full-length boards wherever practical. Where unavoidable, butt joints in vertical boards shall be angle cut at 45 degrees across ends to minimise moisture uptake in board end grain. End matched cladding is also an acceptable method of butt joining. When profiled timber cladding is fixed vertically, boards should be installed with the tongue or non-rebated end facing the prevailing weather direction.

Where profiled timber cladding is fixed diagonally, the direction of fixing shall not cause water to drain into the internal corner or stop. At all times, make adequate provisions for discharging water clear of the building.

For diagonal cladding, the structural battens may need to be at a closer spacing to accommodate the maximum fixing spacing.

NOTE Fixing spacing is measured along the cladding board.

2.14 Clearance between cladding and ground

(a) The minimum clearance from the bottom of the timber wall cladding to the adjoining finished ground level shall be:

i. 100 mm in low rainfall intensity areas or sandy, well-drained areas; or

ii. 50 mm above impermeable (paved or concreted) areas that slope away from the building; or

iii. 150 mm in any other case.

(b) Wall cladding shall extend a minimum of 50 mm below the lowest horizontal part of the suspended floor framing (bearer, joist, mass timber).

(c) Wall cladding shall extend a minimum of 50 mm below the top surface of the slab (see Figure 4).

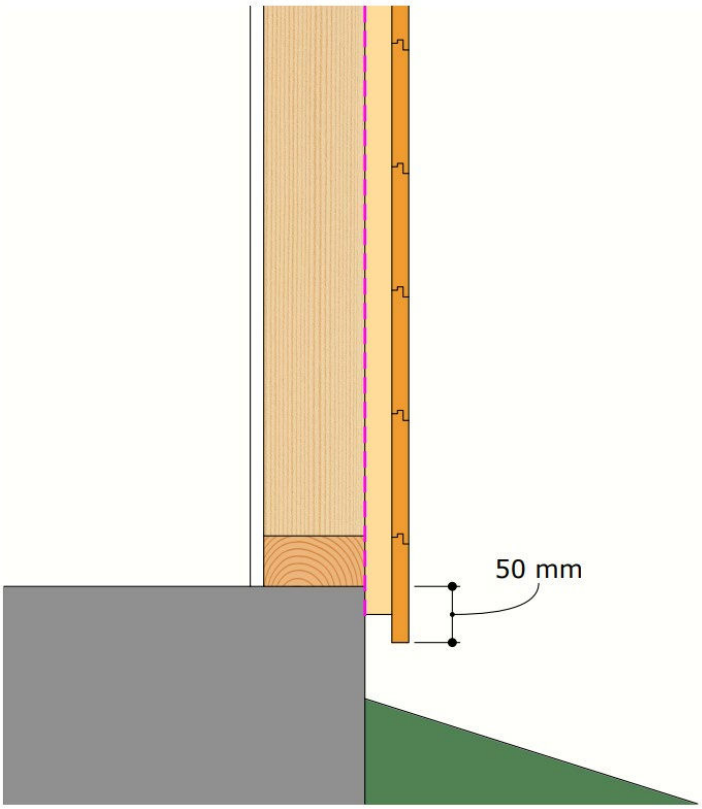


Figure 4: Minimum clearance of cladding above final ground levels and finishing below the bottom plate

NOTE 1 The clearance requirements are equivalent to the Refer to the NCC to confirm current provisions.

NOTE 2 Greater clearances may be required to adhere to manufacturer's warranty or termite guidelines.

NOTE 3 Base trims can be added to protect the base of the wall.

NOTE 5 50 mm minimum clearance above impermeable (paved or concreted) area that slopes away from the building.

NOTE 6 Damp proof course required as per NCC requirements see ABCB Housing Provisions Part 5.7 Weatherproofing of masonry and NCC Volume One F1D6 damp-proofing. Refer to the NCC to confirm current provisions.

Section 3 Installation of Timber Cladding

3.1 General

This Section sets out the requirements for the installation of cladding systems. Cladding shall be installed in accordance with Clauses 3.2 to 3.6.

3.2 Expansion gap requirements

Expansion gaps are required to allow for the expansion of timber (which will absorb moisture and swell), as specified in following clauses.

3.2.1 Bevelled or splayed timber weatherboards profiled cladding

(a) Between adjacent boards – long edge no expansion gap is required.

(b) Where boards abut solid elements (corners) and other material, or if there is a change in the cladding direction, minimum expansion gaps are required as follows:

i. Boards up to 3000 mm long: 2 mm

ii. Boards greater than 3000 mm long: 4 mm

NOTE Bevelled or splayed timber weatherboards overlap each other and can expand or contract as long as there is adequate overlap.

3.2.2 Tongued and grooved and rebated timber profiled cladding

(a) Between adjacent boards, the overlap of two adjacent boards shall have a minimum expansion gap of:

i. Up to and including board widths of 150 mm: 2mm

ii. Board widths greater than 150 mm: 3 mm

(b) Where boards abut solid elements (corners) and other material, or if there is a change in the cladding direction, minimum expansion gaps are required as follows:

i. Boards up to 3000 mmm long: 2 mm

ii. Boards greater than 3000 mm long: 4 mm

NOTE Solid timber cladding producers may have an 'in-built' expansion allowance as part of their profiles. This expansion allowance may form part, or all, of the required expansion gap.

3.2.3 Hardboard cladding board

(a) Between adjacent boards – long edge a minimum expansion gap of 2 mm is required.

(b) Where boards butt end on end, and where a plastic or metal joiner is used, no additional expansion gap is required.

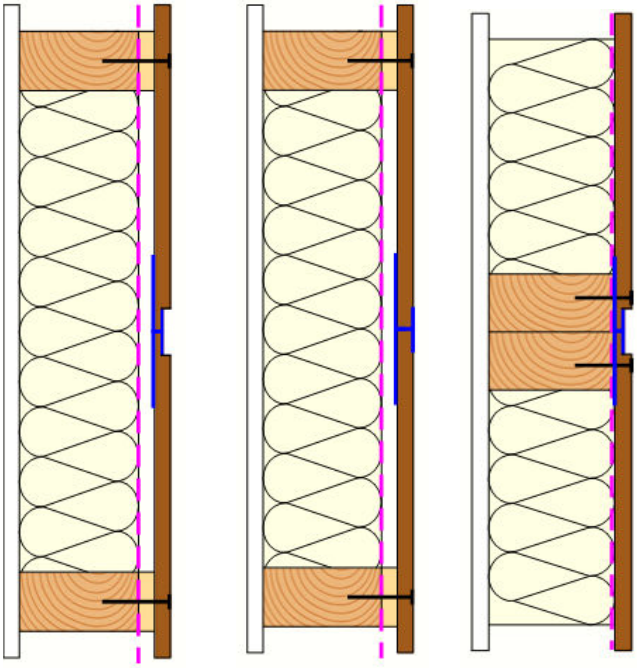


Figure 5: Hardboard cladding board profiles with plastic or metal joiner

(c) Where boards butt end on end, with unpainted joints, no plastic or metal joiner and they abut solid elements (corners) or other material, or if there is a change in the cladding direction, with a maximum continuous board length of 5.5 m, a minimum 3.0 mm expansion gap is required. The expansion gap shall have a flashing placed directly behind the expansion gap (see Figure 6).

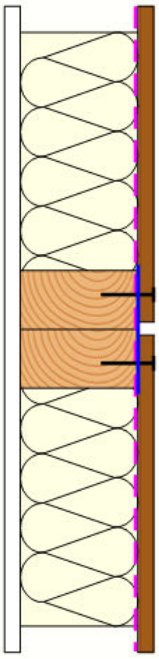


Figure 6: Hardboard cladding board expansion joint without joiner

(d) Where boards butt end on end, and where a concealed plastic or metal joiner is used, for a maximum continuous board length of 11 m, a minimum 9.5 mm expansion gap is required (see Figure 7).

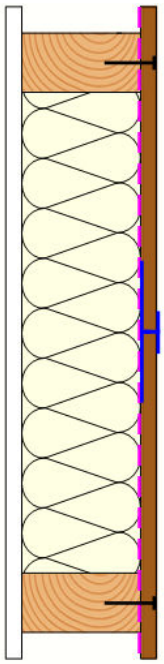


Figure 7: Hardboard cladding board expansion joint with concealed joiner

3.2.4 Sheet cladding hardboard and plywood horizontal joints

The expansion joint shall have a flashing placed directly behind the expansion gap and be detailed in accordance with Clause 3.2.6. Fixings shall be placed at the top and bottom of the horizontal join. Horizontal joints shall meet the minimum gap size as specified here:

(a) Hardboard expansion gaps shall be a minimum of 10 mm.

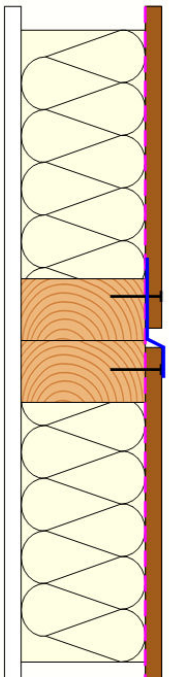


Figure 8: Sheet cladding hardboard expansion joint

(b) Plywood expansion gaps shall be a minimum of 5 mm.

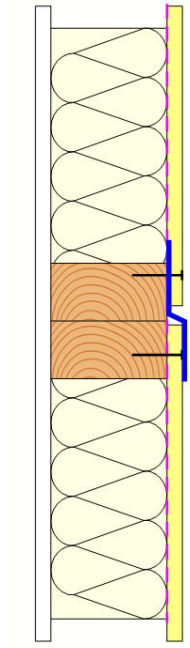


Figure 9: Sheet plywood cladding expansion joint

NOTE 1 The expansion gap shall have a flashing placed directly behind the expansion joint and detailed in accordance with Clause 3.2.6.

NOTE 2 Fixings are to be placed at the top and bottom of the expansion gap.

3.2.5 Sheet cladding hardboard and plywood vertical expansion joints

Vertical joints shall meet these requirements:

(a) Unpainted hardboard sheets shall have a minimum expansion gap of 2 mm.

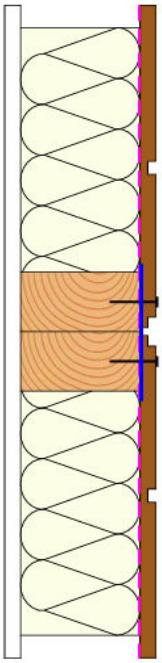


Figure 10: Hardboard sheet cladding vertical butt joint (unpainted only)

(b) Painted hardboard sheet joints shall use a plastic or metal joiner.

(c) Hardboard sheet joints with a metal or plastic joiner require no expansion gap.

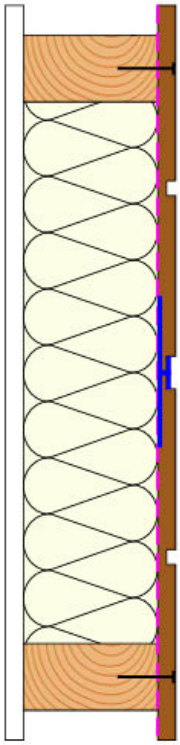


Figure 11: Hardboard sheet cladding vertical joint with metal joiner

(d) Plywood sheet joints shall have a minimum expansion gap of 3 mm.

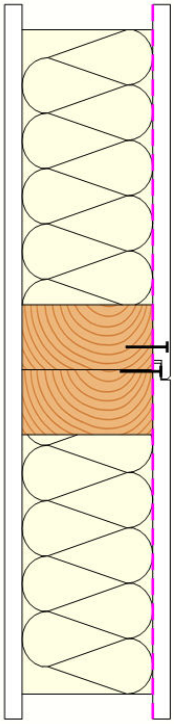


Figure 12: Sheet cladding hardboard and plywood horizontal joint

3.2.6 Storey to storey expansion joint

For all timber cladding systems (profiled timber, hardboard and plywood) used over one or more storeys or a gable end wall exceeding 3.0 m in height, a dedicated minimum expansion gap of 10 mm is required at every storey and under windowsills. The gap formed is to be covered by flashing so that the top part of the flashing is under the uppermost cladding board or sheet, and the lower part of the flashing overlaps on top of the cladding board or panel below (see Figure 13). The expansion gap is to occur at the top of each storey wall (see Figures 14). Where an expansion gap is required for gable end walls, the expansion gap is to occur in the same line as the storey high expansion gap.

Where rebated or tongue and grooved panel cladding systems are used, face nailing or screwing is to be fixed to the first board or panel above the expansion gap.

For bevelled or splayed profile cladding, additional face nailing or screwing is to be fixed to the top of the board below the expansion gap.

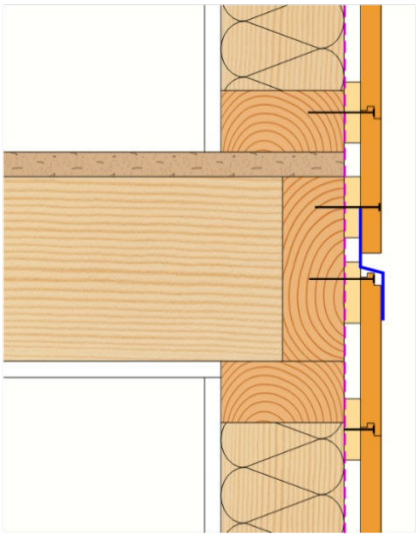


Figure 13: Storey to storey expansion joint for profiled timber cladding

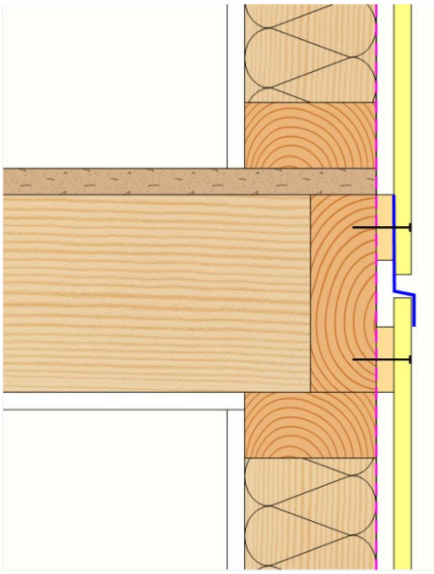


Figure 14: Storey to storey expansion joint for plywood cladding

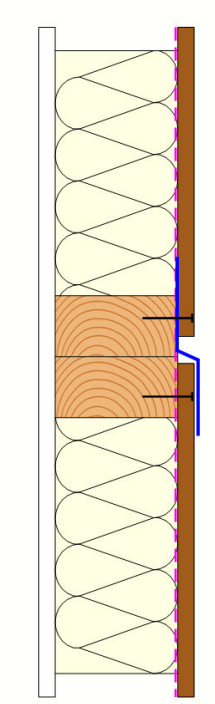


Figure 15: Storey to storey expansion joint for hardboard cladding

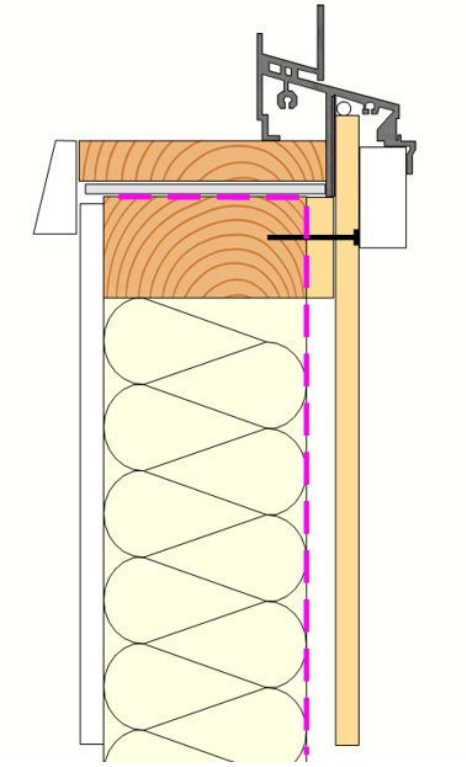


Figure 16: Windowsill detail

NOTE For clarity window taping and dressing omitted (refer to AS 4200.2).

3.3 Flashing to openings

3.3.1 Flashing to openings of Class 1 and 10 buildings

For Class 1 and 10 buildings, refer to the ABCB Housing Provisions Standard, Clause 7.5.6.
NOTE Refer to the NCC to confirm current provisions.

3.3.2 Flashing to openings of Class 2 to 9 buildings

Openings in external wall cladding exposed to the weather shall be flashed with materials complying with AS/NZS 2904 and comply with the following:

(a) Flashings shall be provided to the bottom, tops and sides of openings, except as permitted by (d), and shall be installed so that the flashing:

i. Extends not less than 110 mm beyond the reveals on each side of the opening where practicable; and

ii. Is attached to the window and wall substrate; and

iii. At the top and bottom of the opening, drains to the outside face of the water control layer

(b) Joins in the flashing shall:

i. Overlap by not less than 75 mm in the direction of flow; and

ii. Be securely fastened at intervals of not more than 40 mm; and

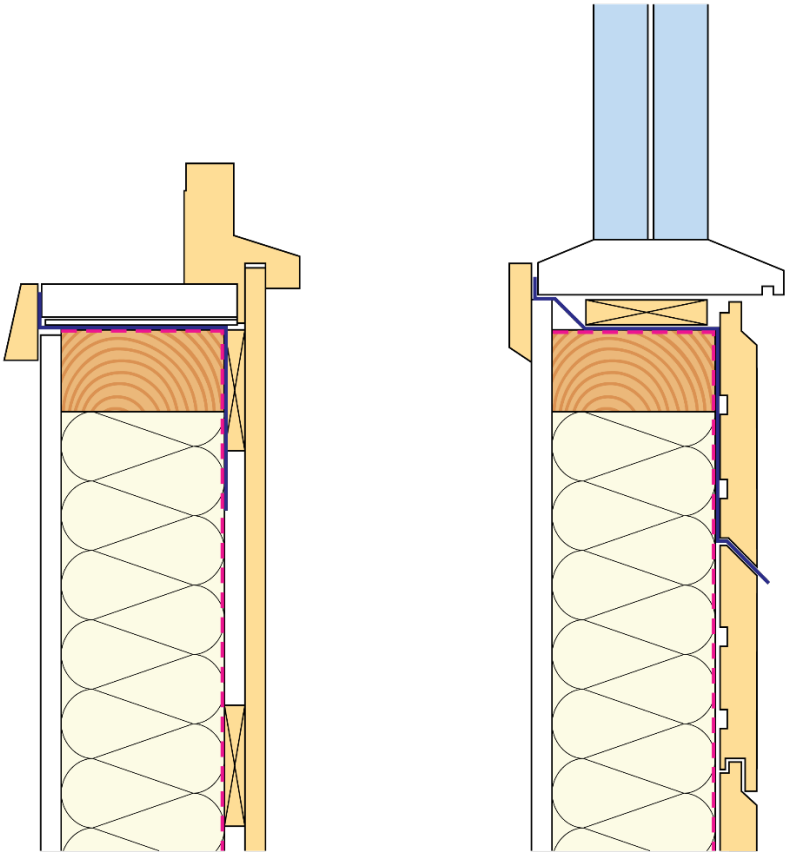
iii. Have sealant installed between laps.

(c) The method of flashing shall be suitable for the framing or substrate and cladding used and any reveal for the window or door system or any architrave or finishing trims that may be installed.

(d) The top of an opening need not be flashed where it is adequately protected by an eave of a width more than three times the height of the cladding above the opening (see Figure 18).

(e) Flashings shall be securely fixed at least 25 mm under the cladding and extend over the ends and edges of the framing of the opening.

(f) Flashing is required directly behind all expansion gaps. Where a flashing is exposed to sunlight it shall be made of a material that is resilient to ultraviolet light.



Cavity **Direct Fixed**

Figure 17: Flashing to the bottom of a window opening

NOTE 1 For direct fixed cladding board to be cut at a 45^0 angle. A minimum 10 mm gap and additional fixing to both sides of the board are required.

NOTE 2 For clarity window taping and dressing omitted (refer to AS 4200.2).

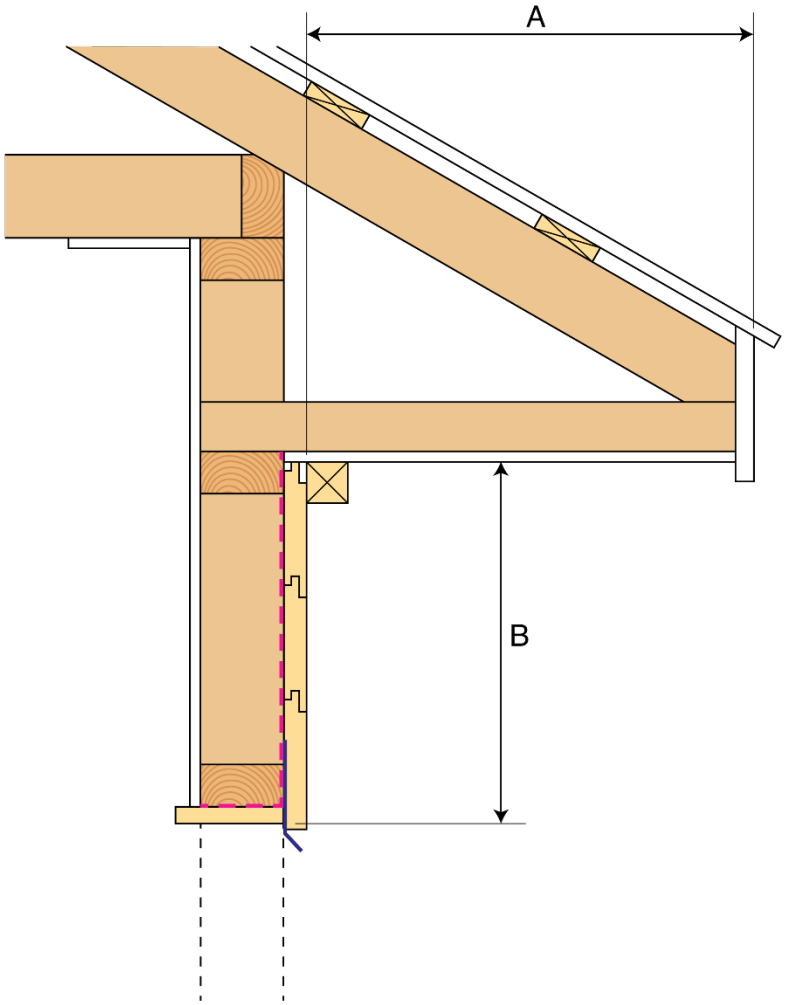


Figure 18: Flashing to the top of a window opening

NOTE 1 Flashing to the top of an opening may be omitted if A is not less than B.

NOTE 2 Window taping and dressing omitted for clarity, (refer to AS 4200.2).

NOTE 3 Flashing to be sealed to the primary water control layer.

3.4 Corner details of cladding

Timber cavity battens shall be fixed in front of sheet flashing, (see Figures 19 and 20 for an internal corners and Figure 21 for external corners). Folded sheet metal may also be used.

All installed wall cladding to internal or external metal corner trims shall have expansion gaps in accordance with Clause 3.2.

3.4.1 Corner details - Horizontal over cavity

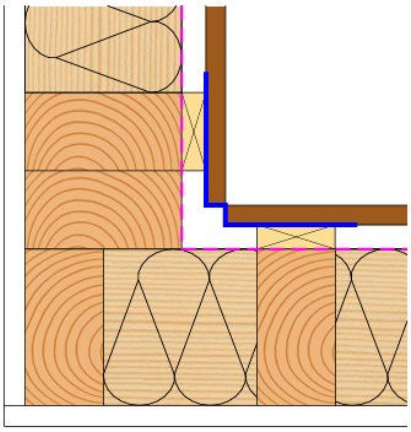


Figure 19: Internal corner

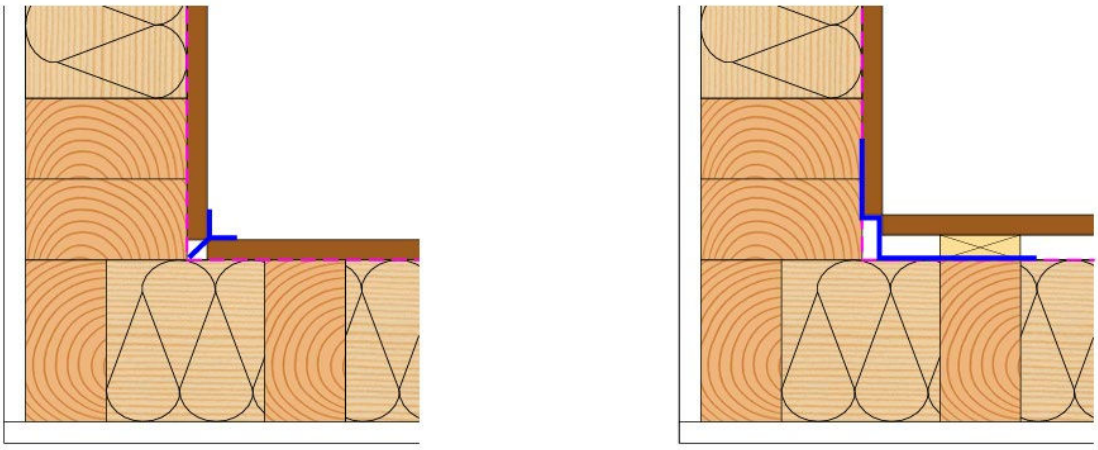


Figure 20: Hardboard cladding internal metal corner

3.4.2 Corner details - Vertical over cavity

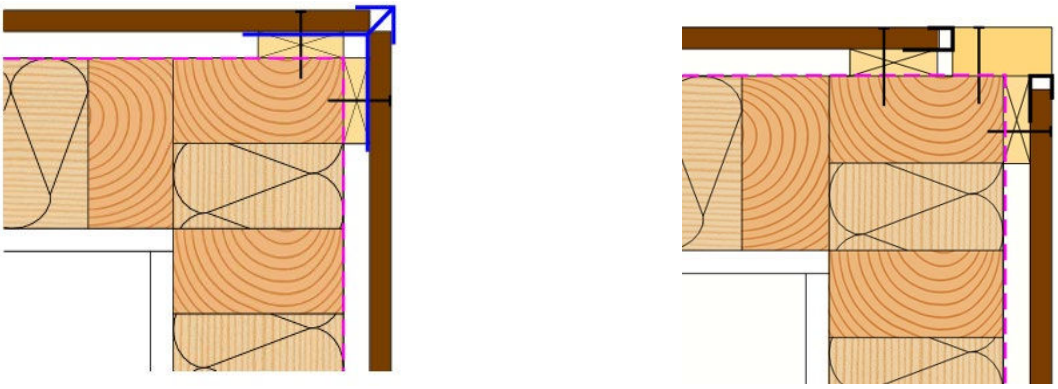


Figure 21: External corner detail over cavity

3.4.3 Corner details - Horizontal direct fix

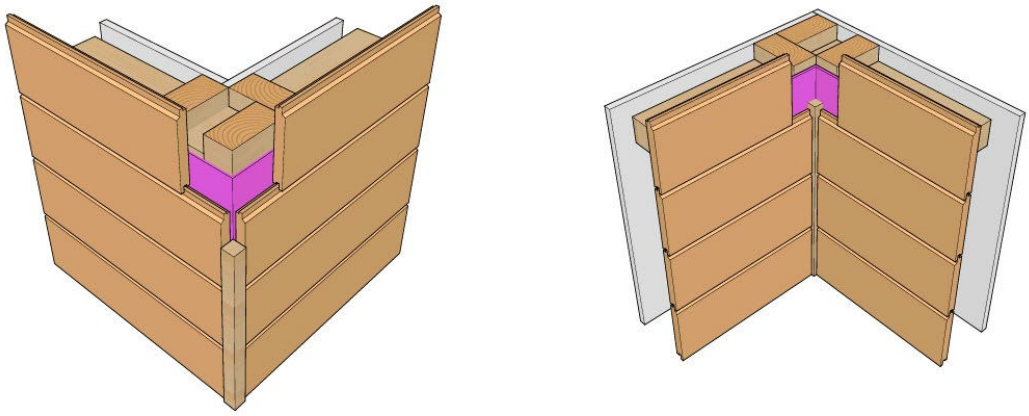


Figure 22: External and internal corner detail – direct fix

3.5 Joint and gap sealing

Joints and gaps in timber cladding shall not be sealed.

NOTE The cladding is intended to be a deflection layer, not the primary water control layer.

3.5.1 Cavity closure

The base of all cavities shall be closed with a flashing that allows venting of the cavity and moisture to escape. The flashing shall be at a minimum of 15 mm from the bottom edge of the board or panel. The minimum cavity closure opening is the equivalent to 1000 mm^2/per metre of wall.

NOTE The opening size of slots in the cavity closure flashing may be required to have a maximum gap size when located in bushfire-prone areas (refer to AS 3959).

3.6 Service penetrations

All penetrations through the cladding shall be flashed in accordance with Figure 23.

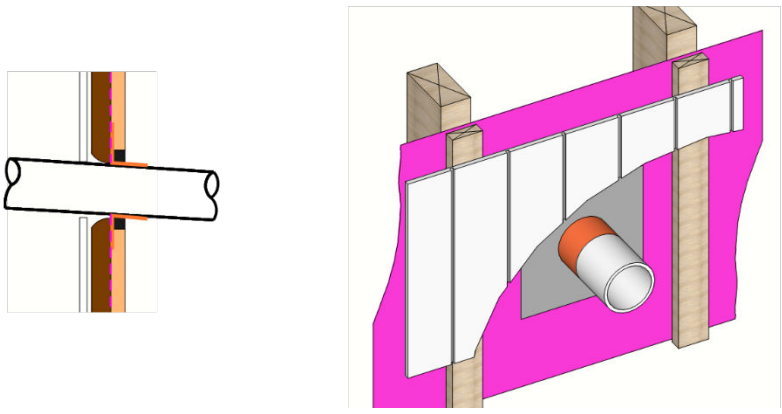


Figure 23: Flashing of service penetration through the cladding

Section 4 Fixing of Timber Cladding to the Substrate

4.1 General

This Section sets out the requirements for the fixing of timber cladding systems to the substrate. Compliance with Section 4 is achieved if it is installed in accordance with:

(a) Clause 4.2 for structural battens.

(b) Clause 4.3 for timber profiled board cladding.

(c) Clause 4.4 for hardboard board cladding.

(d) Clause 4.5 for hardboard sheet wall cladding.

(e) Clause 4.6 for plywood sheet wall cladding.

Fasteners shall have the appropriate level of durability required for the intended application.

Galvanised fasteners to Class 3 are usually sufficient for most installations, however Class 4 or stainless steel fasteners should be selected when the cladding system is in a coastal or C4 & C5 corrosive environment (as per AS 4312).

4.2 Structural battens

Structural battens shall be fixed to the substrate. The cladding fixing is independent of the batten fixing.

NOTE The fixing method for cladding to batten and batten to the substrate is not required to be the same.

4.3 Timber profiled wall board cladding

4.3.1 General requirements

Timber profiled wall cladding boards, fixings and the supporting substrate shall comply with the following:

(a) The first fastener shall be as close as possible to the long edge of the cladding boards but shall not penetrate the tip or thinner edge of the cladding board beneath. Allow a minimum gap of 12 mm. Some profiles might require a greater overlap between the overlapping cladding board underneath (see Figure 24).

(b) Where more than one fastener is required, they shall be spaced across the board's face and kept 25 mm from any long edge. In addition, the fastener shall be offset by a minimum of one diameter of the fastener when the fastener opposes each other.

(c) Fasteners shall be located in the structural framing or substrate, nogging or structural batten.

NOTE The substrate shall be adequate to receive the fastener, i.e., adequate width or structurally adequate to receive the fastener.

(d) Where butt joints occur in a cladding board, a fastener shall be installed into each board end, and the minimum edge distance for nailing at butt joints or board ends shall be minimum of 12 mm.

NOTE End matched cladding may not require extra fixing at the butt join – if evidence of compliance is provided.

(e) Table 4.1 specifies the minimum number of fasteners.

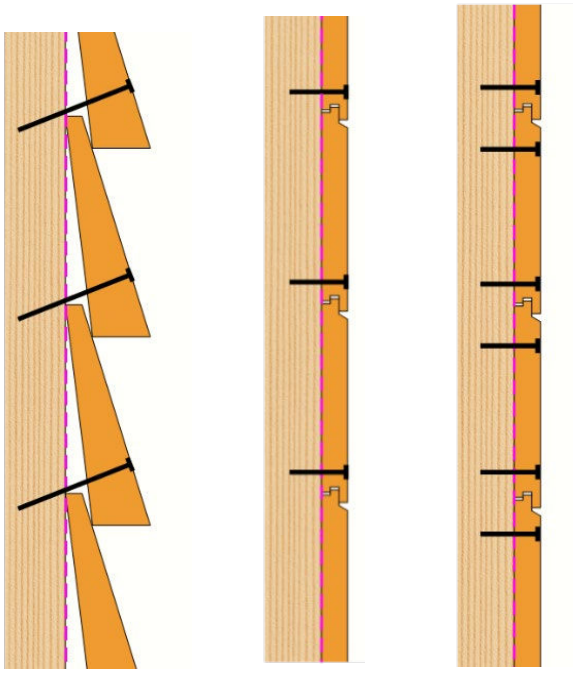


Figure 24: One or two fasteners in timber profiled wall board cladding

4.3.2 Timber substrate

Timber profiled wall cladding board fixings and the timber supporting substrate shall comply with the following:

(a) The number of fasteners required per joint for the appropriate wind classification or wind speed shall be in accordance with Table 4.1.

(b) The fasteners' minimum diameter shall be:

a. Nails – flat head with a ring or annular thread: 2.8 mm.

b. Staples:

i. Hardwood structural substrate: 1.25 mm.

ii. Softwood structural substrate 1.25 mm.

c. Screws 4.2mm (8 Gauge).

(c) The fastener shall penetrate a minimum of 30 mm into structural framing, nogging, structural batten or structural substrate.

(d) Machine driven nails may substitute hand-driven nails with the same nail diameter and shank type. Where a smaller diameter or different shank type is proposed, the capacity of the machine nail shall be equivalent or better than the minimum nail specified.

(e) Where a spacer batten is used in cavity construction, the fastener shall be placed through the batten and fixed into the structural substrate.

(f) Uncoated copper or steel fixings shall not be used for Western Red Cedar. Silicon bronze, Monel metal, stainless steel, or hot-dipped galvanised are suitable.

(g) Fasteners shall not rely on the batten for structural support unless designed as a structural batten.

NOTE 1 When fastening into battens only, care is required to not penetrate the pliable membrane.

NOTE 2 Alternative fastener numbers and spacings are permitted, provided evidence of compliance is obtained.

Table 4.1: Minimum number of fastener fixings for various wind classifications timber profiled wall board cladding with timber substrate

Maximum wind classification or Ultimate Limit State design gust wind speed (m/s)	Maximum stud spacing (mm)	Cladding location	Minimum Face Cover Width (mm)											
			151-200			101-150			75-100			Less than75		
			Fastener type											
			Nail	Staple	Screw	Nail	Staple	Screw	Nail	Staple	Screw	Nail	Staple	Screw
N1 or 34 (Region A and B)	450	Within 1200 mm of edge	1	1	1	1	1	1	1	1	1	1	1	1
		General	1	1	1	1	1	1	1	1	1	1	1	1
	600	Within 1200 mm of edge	1	1	1	1	1	1	1	1	1	1	1	1
		General	1	1	1	1	1	1	1	1	1	1	1	1
N2 or 40 (Region A and B)	450	Within 1200 mm of edge	1	1	1	1	1	1	1	1	1	1	1	1
		General	1	1	1	1	1	1	1	1	1	1	1	1
	600	Within 1200 mm of edge	2	2	1	1	1	1	1	1	1	1	1	1
		General	1	1	1	1	1	1	1	1	1	1	1	1
N3 or 50 (Region A and B)	450	Within 1200 mm of edge	2	2	1	1	1	1	1	1	1	1	1	1
		General	1	1	1	1	1	1	1	1	1	1	1	1
	600	Within 1200 mm of edge	2	2	1	2	2	1	1	1	1	1	1	1
		General	2	2	1	1	1	1	1	1	1	1	1	1
C1 or 50 (Region C and D)	450	Within 1200 mm of edge	2	2	1	2	2	1	1	1	1	1	1	1
		General	2	2	1	1	1	1	1	1	1	1	1	1
	600	Within 1200 mm of edge	3	3	1	3	3	1	2	2	1	1	1	1
		General	2	2	1	2	2	1	1	1	1	1	1	1

4.3.3 Steel structure requirements

Timber profiled wall cladding board fixings and the supporting steel substrate shall comply with the following:

(a) Screws – minimum 4.2 mm diameter (No.8 Gauge).

(b) Steel framing members shall have a base metal thickness (BMT) not less than that required for a roof batten in the NASH standard.

(c) The fastener shall penetrate not less than two full screw threads through the steel structural framing or nogging.

(d) Where cavity construction is used, the fastener shall be placed through the batten and fixed into the structural framing or noggings.

(e) Uncoated copper or steel fixings shall not be used for Western Red Cedar, silicon bronze, Monel metal, stainless steel, or hot-dipped galvanised are suitable.

(a) When fixed into steel framing, fixings shall be hot-dipped galvanised (min 600 g/m^2) or shall be made from an alternative material of proven equivalent durability.

(f) Where a spacer batten is used in cavity construction, the fastener shall be placed through the batten and fixed into the structural substrate.

(g) Fasteners shall not rely on the batten for structural support unless designed as a structural batten.

(h) Where cavity construction is used, fasteners shall be longer to account for the cavity width to obtain minimum fastener depth.

(i) Where the building is located within 200 m of breaking surf, fixings shall be stainless steel.

NOTE 1 When fastening into battens only, care is required to not penetrate the pliable membrane.

NOTE 2 Alternative fastener numbers and spacings permitted, provided evidence of compliance is obtained.

NOTE 3 Check compatibility of steel fixings and supporting structure.

4.3.4 Secret fixing tongue and grooved timber profiled cladding

(a) Where a tongue and groove timber profiled cladding has a secret fastener fixing facility (see Figure 25), the cladding shall be fixed using a combined fastener and adhesive.

(b) The fasteners' minimum diameter and number of fasteners required per joint for the appropriate wind classification or wind speed shall be in accordance with Clauses 4.2 and 4.3, except for nail solutions only applicable up to a Wind Classification of N3, or 50m/s Ultimate Limit State design gust wind speed and a board width of 110 mm.

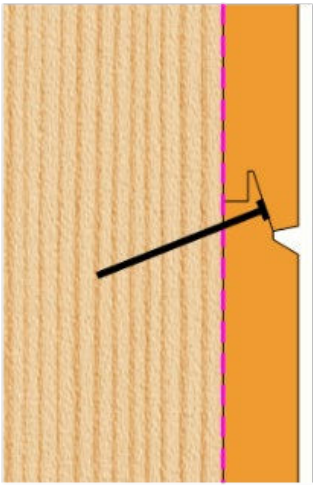


Figure 25: Secret nailed tongue and grooved in timber profiled wall board cladding fixed to a timber substrate

(c) The limit for nail fasteners is to accommodate only one fastener per joint. Larger nail sizes designed to first principles or screws may be used for higher wind speeds regions.

NOTE The adhesive is required to be durable for the intended application.

4.3.5 End-matched timber cladding

Timber cladding may be joined between spans where a machined tongue and grooved are milled into the profile, or a plastic or metal joiner is provided.

4.4 Hardboard wall cladding boards

4.4.1 General requirements

Hardboard wall cladding board, fixings and the supporting substrate shall comply with the following:

(a) Fasteners shall not be within:

a. Overlapping cladding boards with spline:

i. Top edge:15 mm minimum from the board edge

ii. Bottom edge - not applicable.

b. Overlapping cladding boards without spline:

i. Top edge: 12 mm minimum from the board edge

ii. Bottom edge: 12 mm minimum from the board edge

iii. End: 12 mm minimum from the board edge.

c. Rebated cladding boards – semi concealed:

i. Top edge: 15 mm minimum from the board edge

ii. Bottom edge: 30 mm minimum from the board edge.

iii. End: 12 mm minimum from the board edge.

d. Rebated cladding boards – traditional:

i. Top edge: not applicable.

ii. Bottom edge: 30 mm minimum from the board edge.

iii. End: 12 mm minimum from the board edge.

e. Shingle:

i. Top edge: 10 mm minimum from the board edge.

ii. Bottom edge: 30 mm minimum from the board edge.

iii. Board end: 12 mm minimum from the board edge.

(b) Fasteners shall be located at every stud or equivalent structural member.

(c) When butt-joining cladding boards, fasteners shall be installed on either side of the joint.

(d) Stud spacing shall be as per Tables 4.2 and 4.3.

(e) Fasteners with larger diameters may be used, where consideration of splitting the timber cladding and the substrate is given, i.e. pre-drilling the hole.

(f) The fixing methods are relevant for on and off-stud joining methods for timber frames.

(g) The spans of the cladding board shall be continuous spans of two spans or greater. Simply supported spans are not permitted.

NOTE Alternative fastener numbers and spacings are allowed as per manufacture's specifications, if evidence of compliance is provided.

4.4.2 Timber supporting substrate requirements

Hardboard wall cladding board fixings and the supporting timber substrate shall comply with the following:

(a) Stud spacing in accordance with Table 4.2.

(b) Nails into textured hardboard only

a. Hardwood substrate:

i. Machine driven nail minimum diameter of 2.0 mm, with lost head and plain shank stainless steel.

ii. Hand-driven minimum diameter of 2.5 mm, Class 4 or stainless steel flat head with a plain shank.

b. Softwood substrate:

i. Machine driven nail minimum diameter of 2.0 mm, with lost head and plain shank stainless steel.

ii. Hand-driven minimum diameter of 2.5 mm, Class 4 or stainless steel flat head with a plain shank.

(c) Screws minimum diameter of 4.2 mm (8 Gauge).

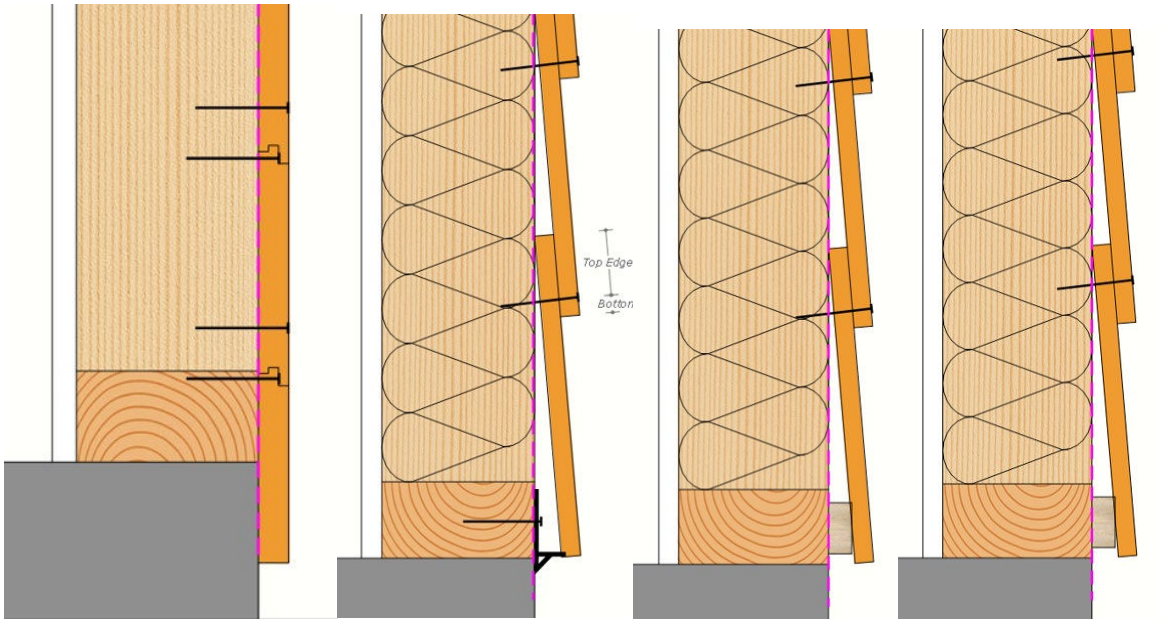
(d) The fastener shall penetrate a minimum of 30 mm into structural framing, nogging or structural batten.

(e) Where a spacer batten is used in cavity construction, the fastener shall be placed through the batten and fixed into the structural framing or noggings.

(f) Stainless steel fasteners shall be used for unpainted boards.
(g) Fasteners shall not rely on the batten for structural support unless it's a structural batten.
(h) Where cavity construction is used, fasteners shall be longer to account for the cavity batten to ensure minimum penetration is achieved.
(i) Nails shall be finished flush to the surface and not be punched and filled.
(j) When using recessed screws, they shall be countersunk a minimum of 2 mm below the board surface and filled with a high-quality, flexible paintable filler.

NOTE 1 When fastening into structural battens, do not penetrate the pliable membrane.

NOTE 2 Alternative fastener numbers and spacing are allowed as per manufacture's specifications if evidence of compliance is provided.



Interlocking **Overlapping with spline** **Overlapping** **Shingle**

Figure 26: Fasteners Edge distance in hardboard cladding boards

NOTE 1 Interlocking profile field fixing to be a minimum 20 mm and maximum of 50mm from the bottom edge.

NOTE 2 For overlapping profile fixing is to be a minimum of 12 mm form the bottom edge.

NOTE 3 For the shingle profile the fixing is to be a minimum of 30 mm from the bottom edge.

Table 4.2 Minimum stud spacing & nail patterns hardboard wall cladding boards – timber supporting substrate

				Maximum stud spacing (mm)	
Cladding type	**Fastener type**	**Nail pattern**	**Maximum wind Classification or Ultimate Limit State design gust wind speed (m/s)**	**General areas (mm)**	**Within 1200 mm of the building's corners**
Overlapping with and without Spline	Nail	Per Figure 27	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
Rebated cladding boards	Nail	Per Figure 27	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
Self-locking	Nail	Per Figure 27	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
	Nail		N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
	Countersunk Screw		N2 or 40 (Region A and B)	600	600
			N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	450
Shingles	Nail	Per Figure 27	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600

4.4.3 Steel supporting substrate requirements

Hardboard wall cladding board fixings and the supporting steel substrate shall comply with the following:

(b) Stud spacing in accordance with Table 4.3.

(c) Steel framing members shall have a base metal thickness (BMT) not less than that required for a metal roof batten and as specified in Table 4.3.

(d) Screws:

a. Steel frame 0.55 BMT – one screw with thread diameter minimum of 4.2 mm (8 Gauge) and stud spacing as per Table 4.3.

b. Steel frame 0.75 BMT – screw thread diameter minimum 4.8 mm to 6.8 mm (10 to 16 Gauge) and stud spacing as per Table 4.3.

(e) The fastener shall penetrate not less than two full screw threads through steel structural framing or nogging.

(f) Where thermally broken cavity construction is used, the fastener shall be placed through the batten and fixed into the structural framing.

(g) When fixed into steel framing members, fixings shall be hot-dipped galvanised (min 600 g/m^2) or shall be made from an alternative material of proven equivalent durability.

(h) Fasteners used with metal battens shall be coated to prevent corrosion due to electrolysis.

(i) Where a spacer batten is used in cavity construction, the fastener shall be placed through the batten and fixed into the structural framing or noggings.

(j) Fasteners shall not rely on the batten for structural support unless it is a structural batten.

(k) Where cavity construction is used, fasteners shall be longer to account for the cavity to ensure minimum penetration is achieved.

(l) Where the building is within 200 m of breaking surf, fixings shall be stainless steel.

NOTE Alternative fastener numbers and spacings are permitted, provided evidence of compliance is obtained.

Table 4.3 Maximum stud spacing hardboard wall cladding boards – steel supporting substrate

				Maximum stud or fastener spacing (mm)	
Cladding type	**Fastener type**	**Minimum base metal thickness of frame (mm)**	**Maximum wind Classification or Ultimate Limit State design gust wind speed (m/s)**	**General areas (mm)**	**Within 1200 mm of the building corners**
Overlapping with or without spline	Fibre cement Screw	0.55	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
Rebated cladding boards	Fibre cement Screw	0.55	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
Self-locking	Fibre Cement	0.55	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
	Countersunk coarse	0.75	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600
Shingles	Fibre cement Screw	0.55	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	600

4.5 Hardboard sheet wall cladding

4.5.1 General requirements

Hardboard sheet wall fixings and the supporting substrate shall comply with the following:

(a) Fasteners shall not be within 12 mm of board edges.

(b) Fasteners shall not be installed in the sheet grooves.

(c) Fasteners shall be fastened at 150 mm centres top and bottom of the panel and wall edges as per Table 4.4.

(d) Fasteners shall be installed based on board type (see Figure 27).

(e) When butt joining fasteners shall be installed on either side of the stud joint at 150 mm centres.

(f) Fasteners shall be installed at noggings.

NOTE Fasteners with a larger diameter may be used. Consider pre-drilling to prevent splitting timber cladding and the substrate.

4.5.2 Timber supporting substrate requirements

Hardboard sheet wall cladding fixings and the supporting substrate shall comply with the following:

(a) Spacing of fasteners in accordance with Table 4.4.

(b) Nails into textured hardboard only

a. Hardwood substrate:

i. Machine nail minimum diameter of 2.0 mm with lost head and plain shank Stainless Steel.

ii. Hand-driven minimum diameter of 2.5 mm Class 4 or stainless-steel flat head with a plain shank.

b. Softwood substrate:

i. Machine nail: minimum diameter of 2.0 mm with lost head and plain shank Stainless Steel.

ii. Hand-driven minimum diameter of 2.5 mm Class 4 or stainless-steel flat head with a plain shank.

(c) Screws – thread diameter – minimum diameter of 4.8 mm (10 Gauge).

(d) The fastener shall penetrate a minimum of 30 mm into structural framing, nogging or structural batten.

(e) Machine driven nails may substitute for hand-driven nails where the capacity is shown to be equivalent or better.

(f) Where a spacer batten is used in cavity construction, the fastener shall be placed. through the batten and fixed into the structural framing or noggings.

(g) Stainless steel fasteners shall be used for unpainted boards.

(h) Fasteners shall not rely on the batten for structural support unless designed accordingly.

(i) Where cavity construction is used, fasteners shall be longer to account for the cavity to ensure minimum penetration is achieved.

(j) When fastening into battens only, care is required not to penetrate the pliable membrane.

(k) Nails shall be finished flush to the surface and not be punched and filled. Punching will significantly reduce the holding capacity of the fastener.

(l) When using countersunk screws, these may be countersunk a minimum of 2 mm below the board surface and filled with a high-quality, compatible and paintable filler.

NOTE Alternative fastener numbers and spacings are permitted, provided evidence of compliance is obtained

Table 4.4 Minimum fastener and stud spacings hardboard sheet wall cladding – timber supporting substrate

				Maximum stud spacing (mm)	
Fastener	**Maximum fastener spacing at perimeter (mm)**	**Maximum fastener spacing at intermediate studs and noggings (mm)**	**Maximum wind Classification or Ultimate Limit State design gust wind speed (m/s)**	**General areas**	**Within 1200 mm of building corners**
Nail	150	300	N1 or 34 (Region A and B)	600	600
			N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	450
		150	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	Cladding face groove spacing 75 mm – 450, remainder at 600
Countersunk screw	150	300	N1 or 34 (Region A and B)	600	600
			N2 or 40 (Region A and B)	600	400
		150	N2 or 40 (Region A and B)	600	600
			N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	450

NOTE The above table is relevant for on and off stud joining methods for timber frames.

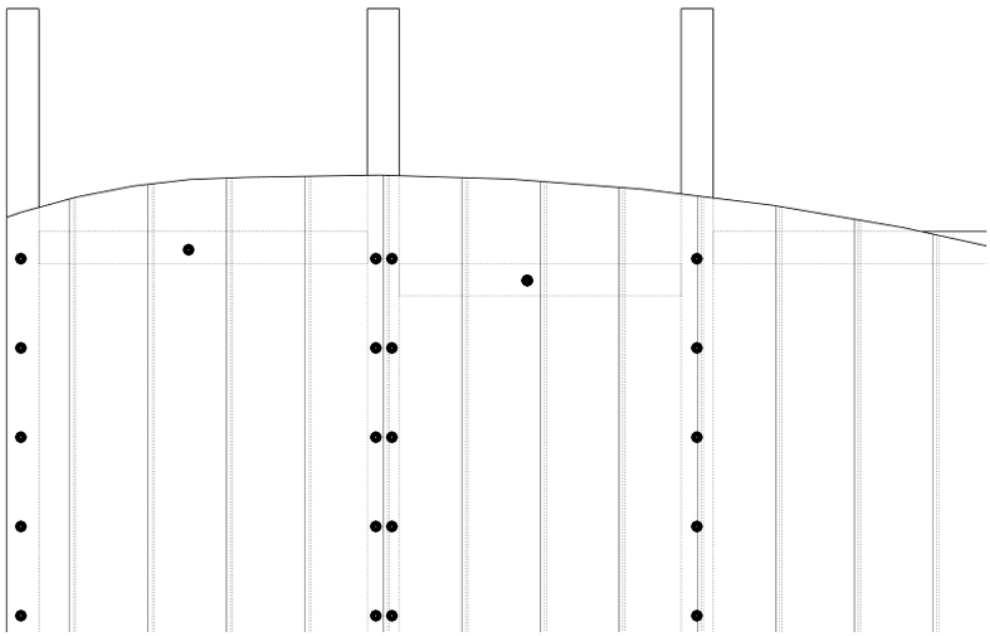


Figure 27a: Fasteners in hardboard sheets on stud butt join (unpainted)

NOTE For clarity, the primary water control layer is not shown.

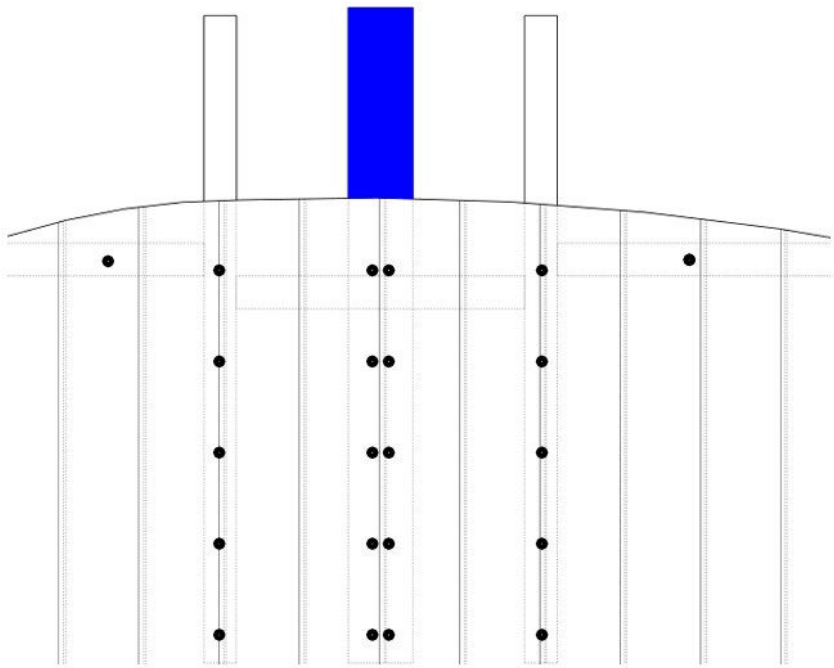


Figure 27b: Fasteners in hardboard sheets off-stud using a metal joiner

NOTE For clarity, the primary water control layer is not shown.

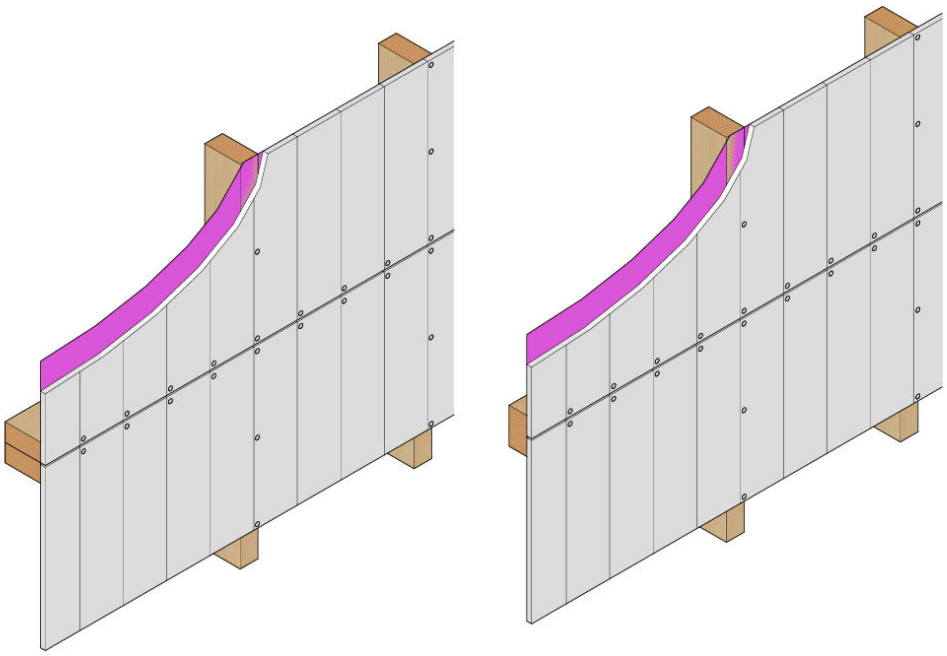


Figure 27c: Fasteners in hardboard sheets

4.5.3 Steel supporting substrate requirements

Hardboard sheet wall fixings and the supporting steel substrate shall comply with the following:

(a) Spacing of fasteners in accordance with Table 4.5.

(b) Steel framing members shall have a base metal thickness (BMT) not less than that required for a metal roof batten and as specified in Table 4.5.

(c) Screws:

a. Steel frame 0.55 BMT – one screw with thread minimum of diameter 4.2 mm (8 Gauge) and stud spacing as per Table 4.5.

b. Steel frame 0.75 BMT – screw thread minimum diameter of 4.8 mm to 6.8 mm (10 to 16 Gauge) and stud spacing as per Table 4.5.

(d) The fastener shall penetrate not less than two full screw threads through steel structural framing or nogging.

(e) Where thermally broken cavity construction is used, the fastener shall be placed through the batten and fixed into the structural framing.

(f) When fixed into steel framing members, fixings shall be hot-dipped galvanised (min 600 g/m^2) or shall be made from an alternative material of proven equivalent durability.

(g) Substitute hand-driven nails where the capacity is shown to be equivalent or better.

(h) Stainless steel fasteners shall be used for unpainted boards.

(i) Fasteners shall not rely on the batten for structural support unless designed accordingly.

(j) Where the building is within 200 m of breaking surf, fixings shall be stainless steel.

NOTE Alternative fastener numbers and spacings are allowed permitted, provided evidence of compliance is obtained.

Table 4.5 Minimum fastener and stud spacings hardboard sheet wall cladding – steel supporting substrate

				Maximum stud spacing (mm)	
Fastener	**Maximum fastener spacing at perimeter (mm)**	**Maximum fastener spacing at intermediate studs and noggings (mm)**	**Maximum wind Classification or Ultimate Limit State design gust wind speed (m/s)**	**General areas**	**Within 1200 mm of building corners**
Fibre cement screw	150	300	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	450
		150	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	Panel face groove spacing 75 mm – 450, remainder at 600
Countersunk coarse C3 screw	150	300	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	450
		150	N3 or 50 (Region A and B) C1 or 50 (Region C and D)	600	Panel face groove spacing 75 mm – 450, remainder at 600

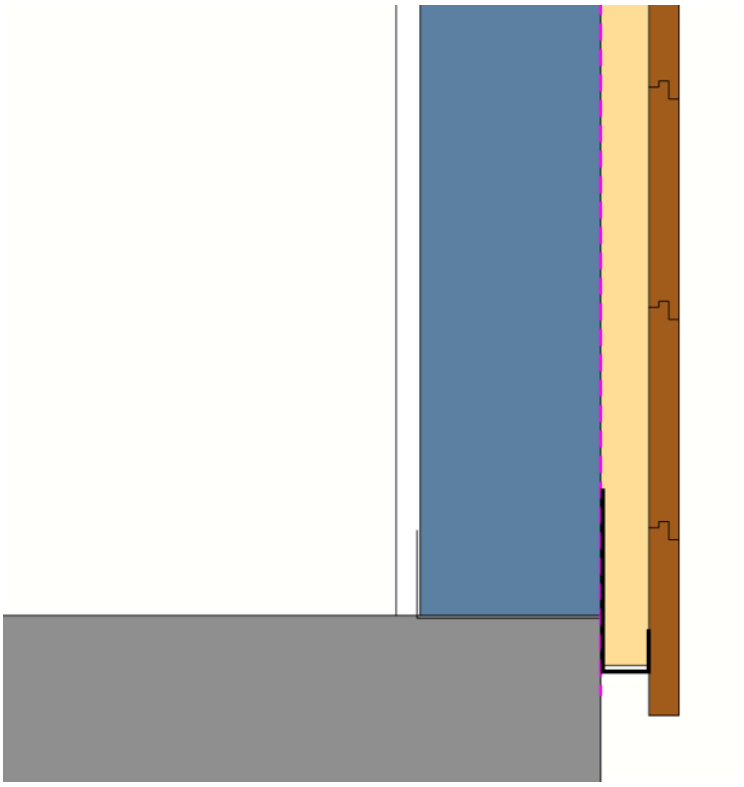


Figure 28: Fixing of hardboard sheets on a steel frame

4.5.4 End-matched timber profiled cladding

Hardboard cladding may be joined between spans where metal joiners are used.

4.6 Plywood wall cladding

4.6.1 General requirements

Plywood hardboard fixings and the supporting substrate installation shall comply with the following:

(a) All sheet edges shall be fully supported by substrate framing. Add noggings to wall framing where horizontal joins occur.

(b) Studs shall not exceed 600 mm centres.

(c) Single spans of plywood should not exceed 600 mm (e.g. below windows or balustrades).

(d) Be fixed in accordance with Clause 4.6.2.

(e) An extra stud is required at internal corners for ventilated cavities.

(f) All plywood sheets shall be installed vertically; that is, the direction of the face veneer grain is vertical.

4.6.2 Fasteners and fixing spacing of plywood cladding

Plywood fixings and the supporting substrate installation shall comply with the following:

(a) Spacing of fasteners in accordance with Table 4.6.

(b) The minimum fasteners diameter size is:

   a. Timber frame:

      i. Hand-driven 2.8 mm flat head nail.

      ii. Machine-driven 2.87 mm D Head.

   b. Steel frame 4.2 mm (8 Gauge).

(c) Wall cladding may be fixed through timber or metal battens attached to the wall frame with fasteners to penetrate not less than 30 mm into timber framing and shall penetrate not less than two full screw threads through steel structural framing or nogging for steel framing.

(d) Fixings shall be positioned a minimum of 7 mm from the edge of the sheet and not less than 50 mm from the edge of all corners.

(e) Where lapped joint plywood is used:

   a. The fastener shall not be placed in a lap and be a minimum of 7 mm away from the position the full plywood panel width occurs (see Figure 29).

   b. Fastener in bottom lap after the weather groove. No fastener is to be used within the weather groove.

(f) The fastener shall penetrate a minimum of 30 mm into structural framing, nogging or structural batten.

(g) Where a spacer batten is used in cavity construction, the fastener shall be placed through the batten and fixed into the structural framing or noggings.

(h) When fixed into steel framing members fixing shall be hot-dipped galvanised (min 600 g/m^2) or shall be made from an alternative material of proven equivalent durability.

(i) Where the building is within 200 m of breaking surf, fixings shall be stainless steel.

NOTE 1 Alternative fastener numbers and spacings are permitted, provided evidence of compliance is obtained.

NOTE 2 Fastener sizes are minimal. Large diameters that don't split the plywood could be used.

Table 4.6: Stud and fixing spacings for plywood wall cladding equal to or greater than 6.5 mm thick

Maximum Wind Zone or Ultimate Limit State Design gust wind speed (m/s)	Maximum stud spacing (mm)	Maximum nail spacing within 1.2 m of the external corners of the building (mm)	Maximum nail spacing elsewhere
N1 or 34 (Region A and B)	600	Body: 200, Edges: 100	Body: 200, Edges: 150
N2 or 40 (Region A and B)	600	Body: 200, Edges: 100	Body: 200, Edges: 150
N3 or 50 (Region A and B)	600	Body: 150, Edges: 100	Body: 200, Edges: 150

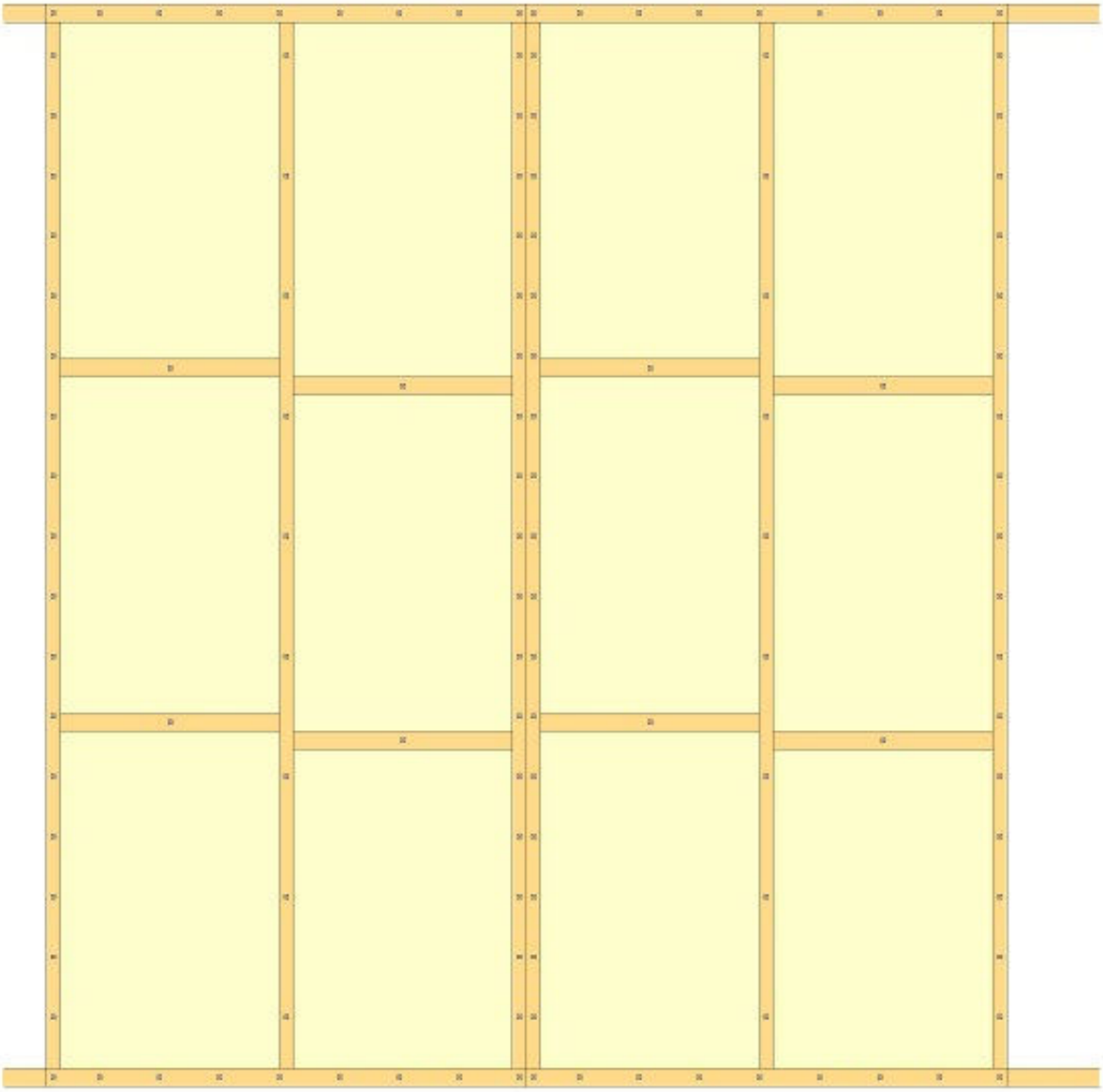


Figure 29: Plywood fixing spacing pattern

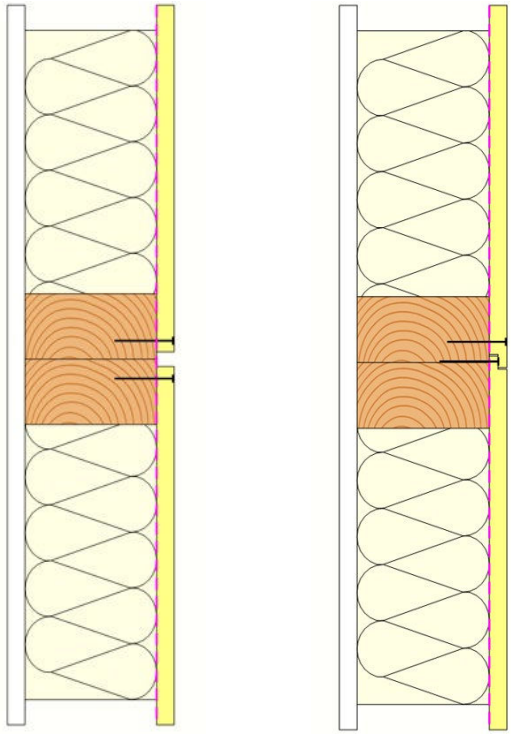


Figure 30: Vertical joint square edge plywood cladding & vertical joint lapped

NOTE 1 For vertical lapped joint a minimum 3mm expansion gap is required.

NOTE 2 For vertical lapped joint fixing is to be a minimum 7mm miniumum from joint.

NOTE 3 Do not nail top and lap.

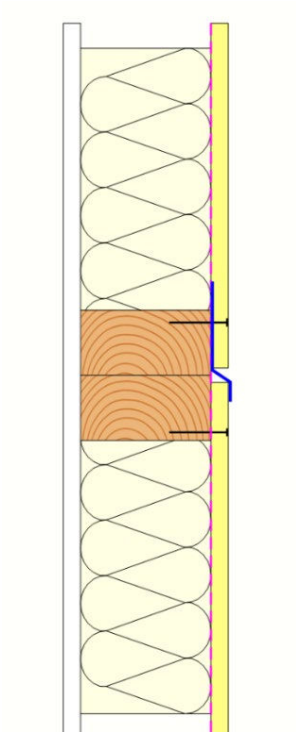


Figure 31: Horizontal joint plywood cladding

Bibliography

CSIRO, Water penetration testing to the Verification method V2.2.1 (weatherproofing), of the National Construction Code (NCC), on timber weatherboard cladding cavity systems, Report Number DTF1099, 2017

CSIRO, Water penetration testing to the Verification method V2.2.1 (weatherproofing), of the National Construction Code (NCC), on timber weatherboard direct fix cladding wall systems, Report Number DTF1098, 2017

Ministry of Business, Innovation & Employment, New Zeland, “External moisture – a guide to using the risk matrix, July 2013

Speckel, Hygrothermal Simulations, Timber Development Association, Ref 0098(04), Darren O’Dea 17/03/2023

Appendix A Hardboard cladding profiles & installation options (Informative)

A1.1 Overlapping hardboard cladding boards

Straight-cut hardboard cladding board with generally rounded edges installed by overlapping with different profiles and rebates.

Figure A1: Overlapping hardboard cladding board

A1.2 Rebated hardboard cladding boards

A rebated hardboard cladding board, with rounded edges installed by overlapping with different profiles and rebates.

Figure A2: Rebated hardboard cladding board

A1.3 Self-locking hardboard cladding boards

A rebated hardboard cladding board, with sharp edges installed by overlapping and the rebate locking to the next board. The board may contain grooves cut at nominal spacings.

Figure A3: Self-locking hardboard cladding board

A1.4 Shingle hardboard cladding boards

A hardboard cladding board profiled as overlapping shingles.

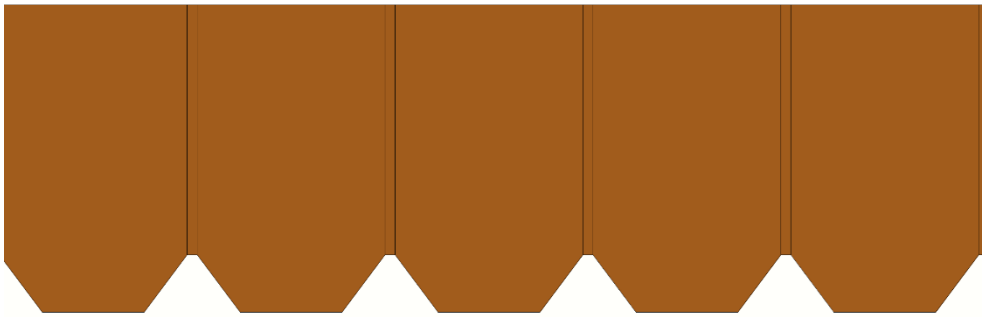


Figure A4: Shingle hardboard cladding board

A1.5 Hardboard cladding board with spline

An overlapping hardboard cladding board with an inserted spline to act as a concealed fastener.

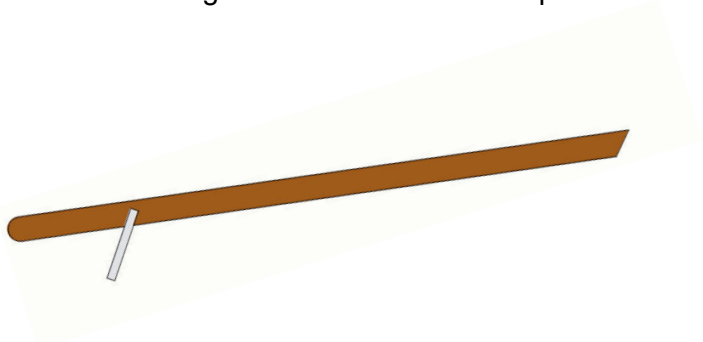


Figure A5: Hardboard cladding board with spline

A1.6 Hardboard sheet wall cladding

A cladding panel made from hardboard. The panel can vary in length and is generally 9.5 mm thick. The sheet contains grooves cut at nominal groove spacings.

Figure A 6: Hardboard sheet wall cladding

Appendix B Timber cladding profiles (Informative)

B1 Bevel (splayed)

Tapered or beveled timber, so that its upper edge is thinner than its lower and lapped in laying to cover the horizontal Joint between adjoining pieces.

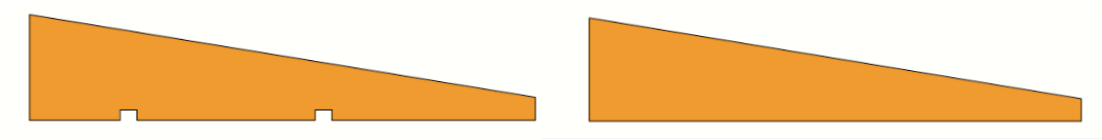


Figure B1: Bevel (splayed) profiled timber cladding boards

B2 Tongue and Groove

Profiled solid timber has a joint type in which one board features a groove (or slot), and the other side of the board has a tongue.

Figure B2: Tongue and Grooved profiled timber cladding boards

B3 Rebated

The upper edge of the board is thinner than the lower lead edge, and the lower edge is rebated so that it overlaps the top edge of the next board.

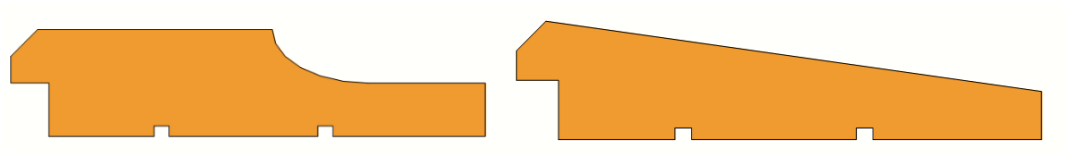


Figure B3: Rebated profiled timber cladding boards

B4 Outward-facing surface

The primary outward-facing surface profiles are:-

B4.1 Flat

Figure B4: Flat faced Rebated profiled timber cladding boards rusticated

B4.2 Shiplap

Figure B5: Shiplap-faced Tongue and Grooved profiled timber cladding boards

B4.3 Log Cabin - Round or flat, either single or double

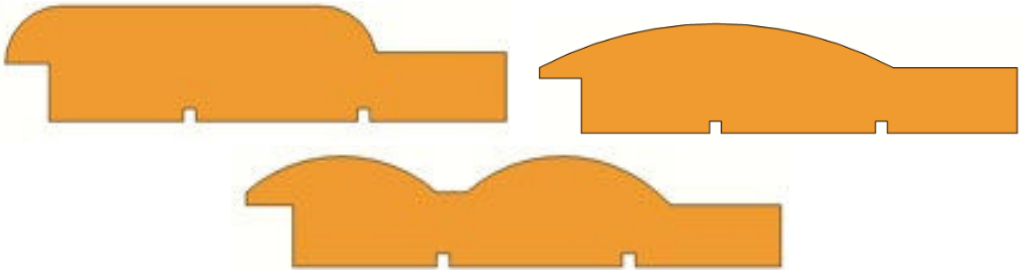


Figure B6: Log Cabin faced Rebated profiled timber cladding boards

B5 Open spaces between the cladding

Cladding which has gaps between the external cladding boards.

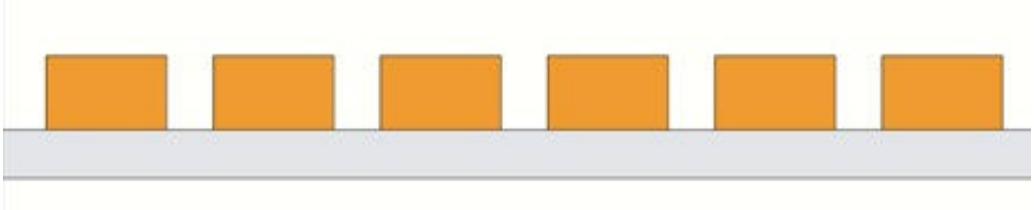
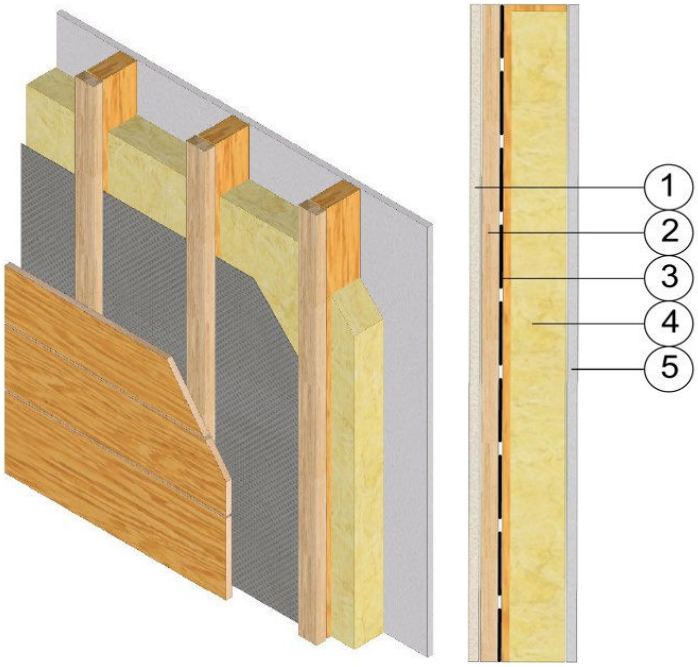


Figure B7: Open Faced Cladding

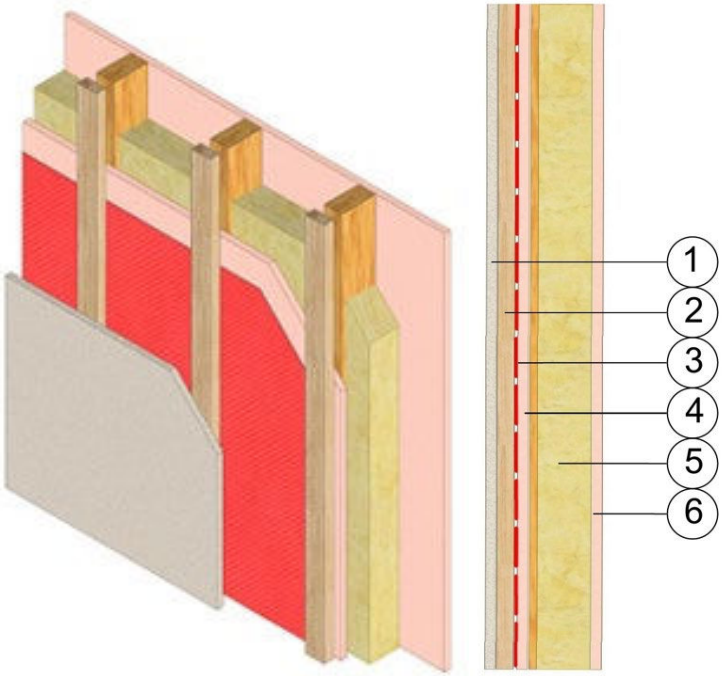
Appendix C Exterior cladding systems that meet the NCC condensation requirements (Informative)

The following timber cladding systems have been verified by modelling to meet the NCC condensation requirements. (Speckel, Hygrothermal Simulations see Bibliography).



1	Timber-profiled boards or panels
2	20 mm air space, slightly ventilated (8 ACH)
3	I.0 mm Class 4 pliable building membrane
4	Timber framing and 90 mm glasswool
5	10 mm plasterboard

Figure: C1 Cavity construction light weight timber framing housing or non-fire rated exterior wall, Climate Zones 2, 5, 6 and 7



1 Timber-profiled boards or panels
2 20 mm air space, slightly ventilated (8 ACH) and vertical battens
3 I.0 mm Class 4 pliable building membrane
4 16 mm fire-protective plasterboard
5 Timber framing and 90 mm glasswool
6 10 mm plasterboard

Figure: C2 Cavity construction light weight timber framing low-rise fire-rated exterior wall (FRL 60), Climate Zones 2, 5, 6 and 7

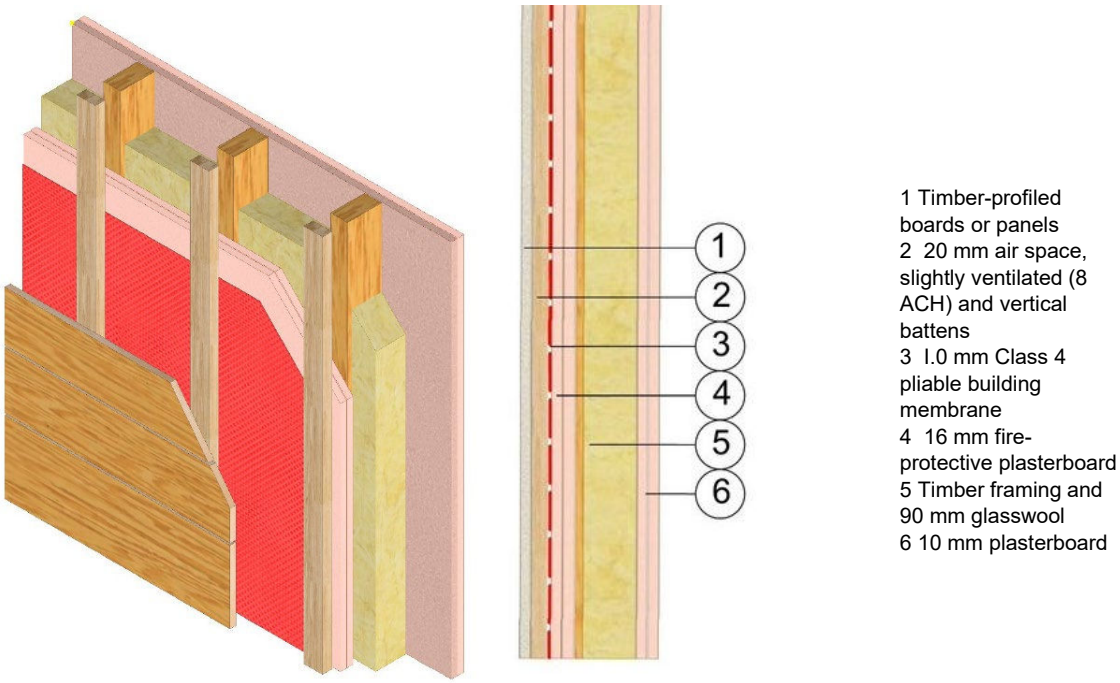


Figure: C3 Cavity construction light weight timber framing mid-rise fire rated exterior wall (FRL 90), Climate Zones 2, 5, 6 and 7

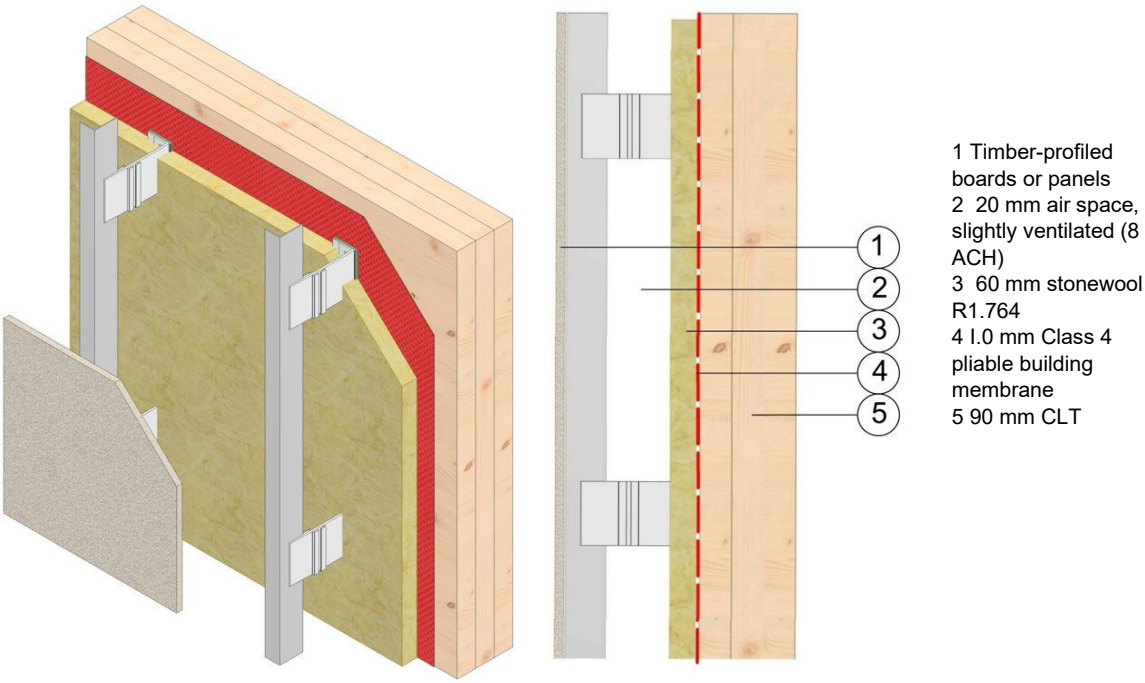
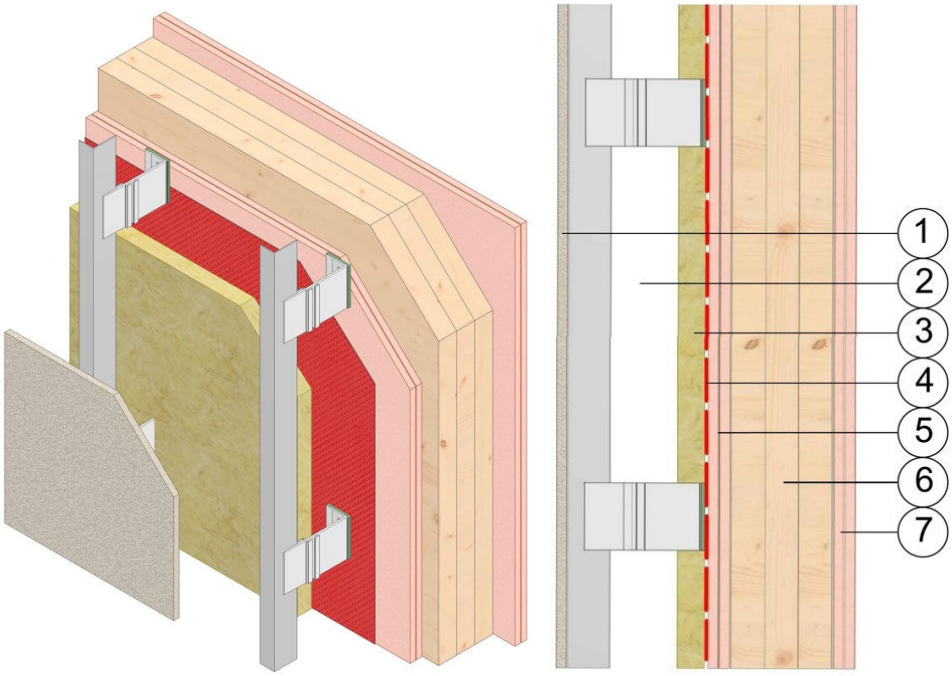


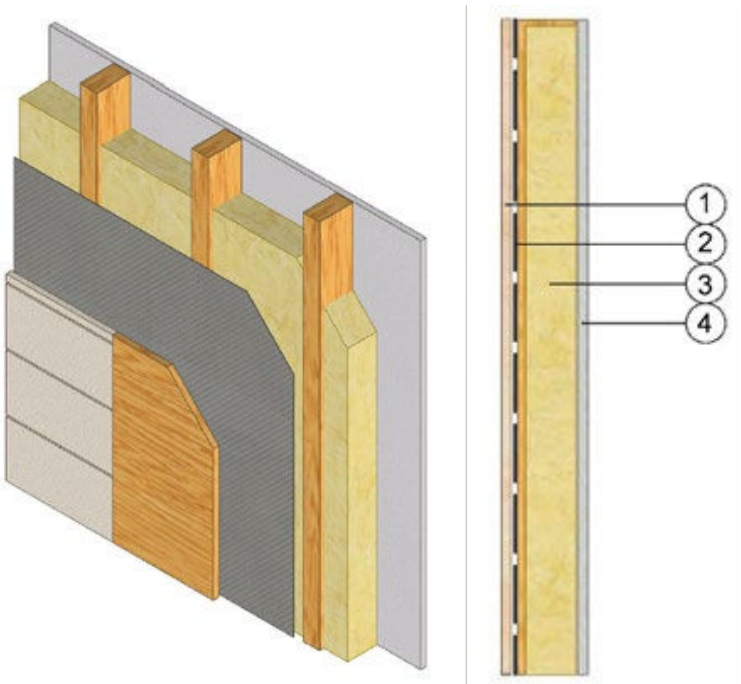
Figure: C4 Cavity construction mass timber framing housing or non-fire rated exterior wall, Climate Zones 2, 5, 6 and 7



1 Timber-profiled boards or panels
2 20 mm air space, slightly ventilated (8 ACH)
3 60 mm stonewool R1.764
4 I.0 mm Class 4 pliable building membrane
5 2 x 13 mm fire-protective plasterboard
6 90 mm CLT
7 2 x 13 mm fire-protective plasterboard

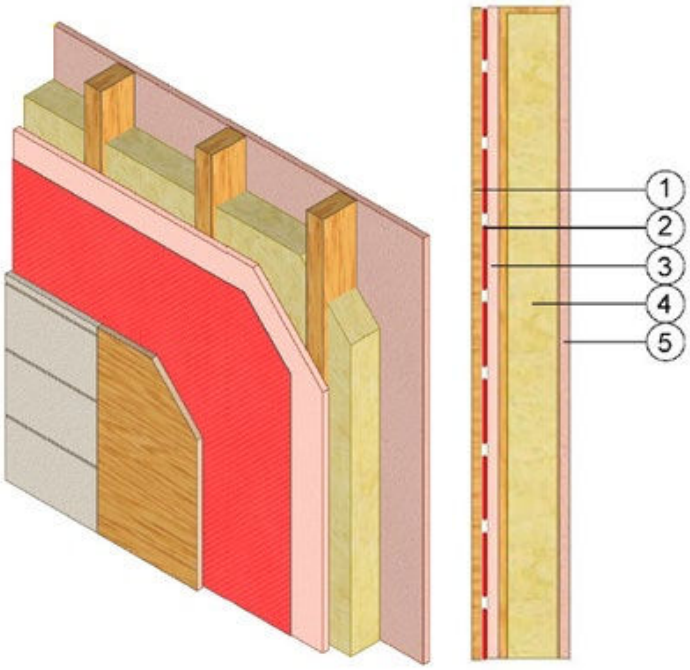
Figure: C5 Cavity construction mass timber framing mid-rise fire rated exterior wall (FRL 90), Climate Zones 2, 5, 6 and 7

NOTE Where additional plasterboard or difference thickness is required within the system for increased fire resistance, the addition of the plasterboard is not likely to detriment the system's performance.



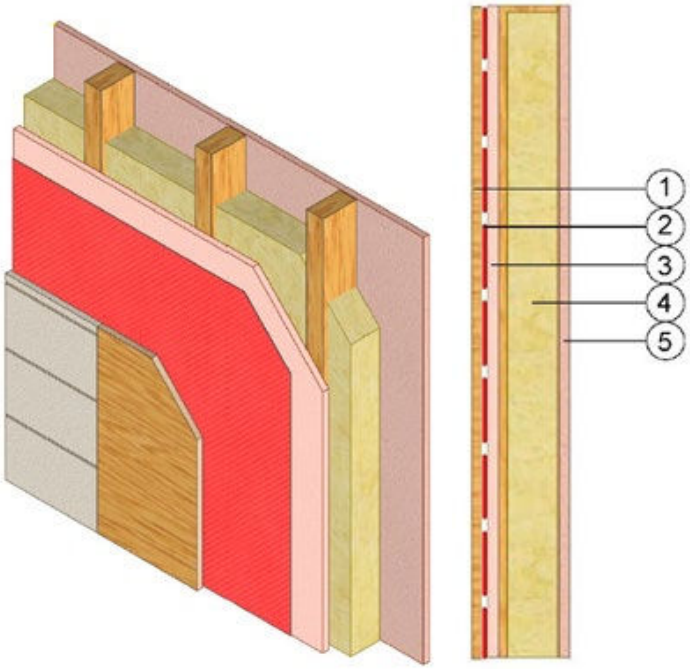
1 Timber-profiled boards or panels
2 I.0 mm Class 4 pliable building membrane
3 Timber framing and 90 mm glasswool
4 10 mm Plasterboard

Figure: C6 Direct fix construction light weight timber framing housing or non-fire rated exterior wall, Climate Zones 2, 5, 6 and 7



1 Timber-profiled boards or panels
2 I.0 mm Class 4 pliable building membrane
3 16 mm fire-protective plasterboard
4 Timber framing and 90 mm glasswool
5 16 mm fire-protective plasterboard

Figure: C7 Direct fix construction light weight timber framing low-rise fire rated exterior wall (FRL 60), Climate Zones 2, 5, 6 and 7



1 Timber-profiled boards or panels
2 I.0 mm Class 4 pliable building membrane
3 2 x 13 mm fire-protective plasterboard
4 Timber framing and 90 mm glasswool
5 2 x 13 mm fire-protective plasterboard

Figure: C8 Direct fix construction light weight timber framing mid-rise fire rated exterior wall (FRL 90), Climate Zones 2, 5, 6 and 7

Appendix D Building practices (Informative)

This appendix provides information on practices for the storage, and installation, of timber cladding systems.

D1 Receiving cladding

Upon receipt of the cladding, inspecting the parcel of cladding is recommended to ensure that the product is the correct profile or panel, species and quantity ordered. If the cladding is delivered damaged, it should not be installed. Contact the supplier as soon as practicable.

It is recommended that the cladding be installed as quickly as possible after receiving it to prevent the risk of variation in the product's moisture content, which may lead to warping in the boards and panels or variation in size.

D2 Site storage

As far as possible, plan the delivery of timber elements to minimise the time they are stored on-site. Timber elements should be stored in a well-ventilated and drained sheltered location, protected from direct exposure to the weather (see Figure D1). The timber elements should be kept off the ground using bearers (gluts/dunnage) at least 150 mm from well-drained and even ground. The ground should be well-drained and free of obstacles, debris, and vegetation so that water does not settle. Place a waterproof membrane directly on the ground or construct a gravel pad if the ground is continuously wet.

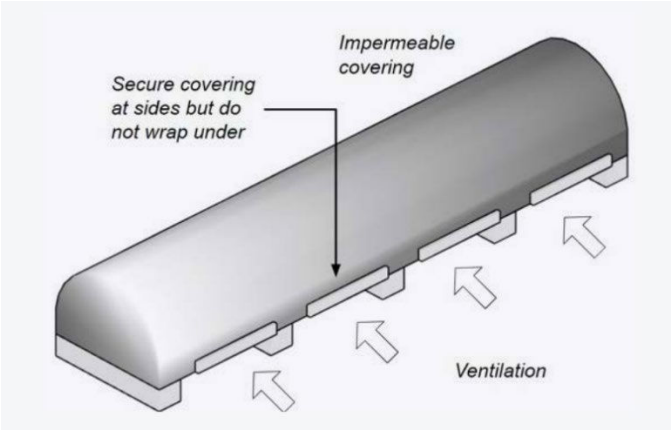


Figure: D1: Storage of timber on site

The timber elements should be covered with suitable covering or tarpaulins if sheltered storage is unavailable. The cover should be placed to preclude moisture whilst maintaining good air circulation in and around the timber. Do not tuck the wrap or trap under the stack of timber. If the wrap or trap is damaged, make it good with tape or remove it and protect it with a new impermeable covering or tarpaulins.

A vapour-permeable wrap is recommended when free air movement is not possible under a trap or wrap. Impermeable wraps without adequate ventilation may cause condensation. This situation often occurs when factory-wrapped timber elements are stored on construction sites.

D3 Preparation

Before installing the cladding, check that the board or panel's width is equal to or close (+/- 3 mm) to the specified width. A significant difference would indicate that the moisture content of the boards or panel is unusually high or low and that fixing should not proceed until the moisture content of the boards is within an acceptable range.

At the time of fixing, the moisture content of the substrate should not exceed 15%. This maximum moisture content should avoid problems caused by timber movement, shrinkage, and condensation, and ensure the satisfactory application of paints and stains.

Remove all dirt, dust or any contaminants from the board surface. Fill any defects or damage with an approved filler, including punched nail holes. Sand any uneven surfaces. Recoat bare timber areas exposed through cutting or notching with an approved treatment re-sealer.

To avoid the primer paint coat from being seen after the topcoat has been applied, it is recommended that the primer be colour-matched to the topcoat. For pre-prime boards in zones where overlap in the cladding profile occurs, the pre-primed boards should have a topcoat applied to zones of overlap prior to fixing to the substrate.

D4 Wall straightening and corrections

The wall to be covered in cladding should generally be flat. Significant differences in the evenness between two or several adjacent battens will warp the wall cladding, and the resulting ripples may be visible depending on the light. Significant ripples could also seriously constrain the fastening systems used to hold the cladding in place. Corrections are recommended when the amplitude of the ripples is greater than 5 mm for one batten compared to two adjacent battens.

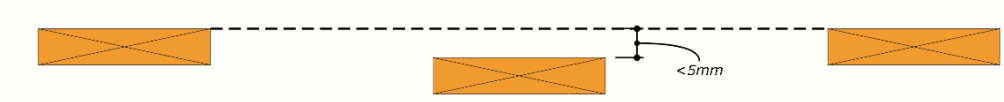


Figure D2: Substrate maximum out of alignment

D5 Capillary groove in windows and door

If using timber windows and doors, it is important that the groove underneath the sills, which prevents water from entering the cavity by capillary action, is clear of the external cladding. (see Figure D3). If fixing cladding over a cavity, the additional width of the cavity should be considered in window and door sizing.

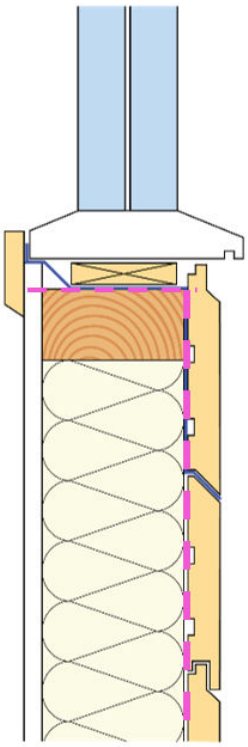


Figure D3: Capillary grove under timber windowsills kept clear of cladding

D6 Adhesives and sealants

Any adhesive or sealant used to assist in the fixing of cladding should be exterior rated. The adhesive manufacturer's instructions for use should be observed for optimum results.

First, apply beads of exterior-rated adhesive to framing (or battens) sufficient for the installation of five (5) boards at any one time. Locate the first board and nail. Observing concealed fixing procedures, nail the following boards, taking care to drive or punch the nails so as not to obstruct fitting the next board.

Secret fasting at an oblique angle in a position to conceal the fixing under the overlapping edge of the following board. Adhesives are not recommended for hardboard cladding products.

D7 Plywood

When laying up on framing, start at framing corners and work across the wall.

Where cuts are made into enveloped preservative-treated cladding panels, the cut edges should be coated with a brush on timber preservatives. Cut edges should be placed at the top of the sheet to avoid rain drips soaking into cut end grains.

Priming the bottom edges and the back (rear) of the sheets to a height of 150 mm is recommended. Fastening into battens that are not installed over studs or noggings may puncture the building wrap.

D8 Profiled timber cladding

The recommended method of fixing is with only one fastener at each batten or stud crossing to secure the board to the battens or studs. With most profiles, the fastener is driven through the lower quarter of the width of the board. However, for some profiles, the fastener is driven through the central region of the width of the board. For most profiles, it is important that only one fastener be used at each batten or stud so that each board can expand or shrink in width individually during seasonal weather changes. The next board is fixed similarly, and the second board's lower edge holds the first board's upper edge in place. The fastener in one board should not penetrate the adjacent board.

Where machine nailing is used, care should be taken to ensure that excess pressure does not distort the boards and that nails are not countersunk greater than 3 mm. Cladding should be fastened wherever possible so that the boards are free to shrink and swell individually.

Cladding should be fixed at centres measured along the board at not more than 650 mm. The fastener at the butt should be pre-drilled. Unseasoned sawn weatherboards should have a minimum lap of 30 mm.

D9 Durability of metal fasteners and battens

Corrosion of metal fasteners needs to be considered in terms of the fastener's exposure type. Most timber connections and fasteners have an 'exposed' portion (exposed to the atmosphere) and an 'embedded' portion (embedded in the timber). The moisture content of the timber will dictate corrosion of the embedded portion of the fastener, the timber's natural 'pH', the availability of oxygen and any electrolytic action that may be facilitated via other influences such as a preservative treatment of the timber, e.g. a copper-based preservative treatment.

All of the above factors dictate corrosion of the 'exposed' portion of the fastener but can also be influenced by air-borne contaminants such as salt deposition and, in industrial areas, other chemicals.

The following are different environments with differing corrosion behaviour.

(a) Sea Spray Zone - Less than 1km from a surf coast or 100 m from bayside areas.

(b) Coastal Zone - 1km to 10km from a surf coast or 100 m to 1 km from bayside areas.

(c) Industrial Zone - Close proximity to industrial complexes where corrosive gases may be emitted, e.g. Port Pirie and Newcastle.

(d) Special Hazard Zone - The environment within a building may also adversely affect the durability of connectors. For example, enclosed swimming pools, fertiliser sheds, tanneries, chemical plants, piggeries, poultry sheds, and similar structures may cause rapid corrosion of galvanised metal products and may also impact stainless steel. Corrosion in these buildings should require special attention and is beyond the scope of this Standard.

(e) Low Hazard Zone - Generally, locations that are not described by the above.

(f) Section 2 of this Standard describes suitable materials for timber cladding systems and their product standard.

D10 Preservative treated timber and fasteners

In the presence of moisture, copper-based timber preservatives such as CCA, ACQ and Copper Azole may cause increased corrosion of metal fasteners. In these situations, galvanised metal connectors require additional coatings such as epoxy paint or epoxy coated (fusion coated) to isolate the zinc in galvanising from the copper in the timber treatment; alternatively, stainless steel should be used.

LOSP timber preservatives have a negligible effect on corrosion rates, and no special additional corrosion considerations are required for LOSP preservative treated timber.