



# **VertiClad Specification and Installation Guide**

**Cavity Fix over Flexible Building Wrap  
and Rigid Air Barrier**

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## **Introduction**

JSC VertiClad is a vertical weatherboard cavity cladding system installed on a structural timber frame.

It is intended for use as an exterior cladding. The JSC VertiClad system consists of Western Red Cedar (*Thuja Plicata*) weatherboards, finished with a suitable oil stain or paint, H3.2 treated timber castellated cavity battens, flashings and accessories. Weatherboards are profiled to JSC's specifications and to NZS 3617 and BRANZ BU 411.

### **To be read in conjunction with JSC Codemark Certificate GM-CM300841-RevA and JSC technical information for VertiClad on a 20mm and 45mm cavity.**

This document covers the installation – within the scope and limitations of JSC technical information - of JSC Western Red Cedar (WRC) VertiClad weatherboards, fixed vertically over:

- JSC 40mm x 20mm castellated cavity battens
- JSC 45mm x 45mm castellated cavity battens
- JSC 70mm x 45mm castellated cavity battens

Up to date information: When specifying or installing JSC products, ensure that you have the current manual. If unsure or for additional information, contact us on [tech@jsctimber.co.nz](mailto:tech@jsctimber.co.nz) or 0800 572 688

## **General**

### **Sizes, Grades**

JSC VertiClad weatherboards are available in 18.5mm, 22mm, 28mm or 39mm thickness and in a variety of cover widths.

A random length supply of weatherboards range from .9m to 5.1m with select lengths and longer lengths available on request.

Band-Sawn face (BSF) recommended when staining, Dressed Face (DF) (check with coating manufacturer for sanding requirements) - and other custom options available.

Weatherboards are usually supplied as PC1 grade, with PC2 and sound tight knot grades (STK) available. Any loose or bark encased knots or natural timber defects should be removed during installation. All grades may require some docking.

### **Sustainability**

JSC Western Red Cedar is purchased under recognized environmental schemes, harvested from responsibly managed forests of British Columbia, Canada. Documentation is available on request.

## **Products and Accessories**

JSC VertiClad Western Red Cedar Weatherboard, machined to manufacturers' profiles. Profile range available from: [www.jsctimber.co.nz](http://www.jsctimber.co.nz) with custom profiles available on application.

### **Cavity Battens**

JSC-U Radiata Pine H3.2 treated timber universal cavity batten. Castellated on both faces with an 18 degree slope to provide drainage and ventilation and can be used horizontally and vertically

- 20 x 45 mm – for 20mm cavity

- Also available
- 45 x 45 mm – JSC-V used vertically and JSC-H used horizontally (refer to cavity notes).
- 75 x 45 mm – JSC-V used vertically and JSC-H used horizontally for structural fixing

(refer to cavity notes)

### Timber accessories components

#### Internal Corner Moulding

- J41                    19 x 19mm
- J44                    28 x 28mm

#### External Corner Mouldings:

- J42                    19 x 42mm
- J45                    28 x 51mm
- APJC4                42 x 42mm
- APJC5                39 x 69mm

#### Western Red Cedar Fascia Boards:

- To JSC Timber profiles as detailed.

#### Nail Fixings:

- **Oil/Stain Finish**  
Annular grooved 316 Stainless Steel or Silicon Bronze to NZBC E2/AS1 Table 24. Check material compatibility as per NZBC E2/AS 1 table 21 and 22. Rose, Pentagon or Flat Head.
- **Paint Finish**  
Annular grooved 316 Stainless Steel or Silicon Bronze to NZBC E2/AS1 Table 24. Check material compatibility as per NZBC E2/AS1 table 21 and 22. Jolt Head, Countersunk or Rose Head. Punched, primed and filled where applicable.

#### Flashings & Accessories

Specified to suit and to comply with E2/AS1 clause 2.2, Section 4, and table 7.

Windows to comply with NZS4211 and all flashings in accordance with E2/AS1.

#### Cavity Closure/Vermin proofing

Use cavity closer/vermin proofing compliant to E2/AS1 9.1.8.3 at the cavity base to JSC Timber fixing details.

Length and width to suit cavity. Install cavity closer/vermin-proofing at base of walls, open horizontal (or raking) junctions, over openings (windows, power meters etc).

Openings in cavity closer must be unobstructed in order to maintain drainage and ventilation within the cavity

### Handling & Storage

JSC Timber products will be delivered dry, unmarked and undamaged from freight and handling (grade characteristics excluded). Do not sign or accept delivery if this is not the case. Contact JSC immediately if you have any concerns.

Store weatherboards and battens on site in a cool, dry place out of direct sunlight, laid flat on timber bearers above ground. Fillet if long delays are anticipated. Keep covered until you are ready to install. Protect edges and ends where possible.

## **Coating**

### **JSC CedarShield**

#### **Oil/Stain Finish**

In-line factory coating options include both oil and water based coating systems from Resene, Watty, Dryden, WOCA, Dulux, CD50 and Cabots.

When a dark colour stain is to be applied, consideration should be given to using a weatherboard with an effective cover of 115mm or narrower, vertical grain boards and/or thicker boards which will all give added stability and be less prone to movement. This is particularly relevant to apply a high reflective coating to North and West elevations. For more information, please contact us at [tech@jsctimber.co.nz](mailto:tech@jsctimber.co.nz) or refer to our Dark Colour statement available at [www.jsctimber.co.nz](http://www.jsctimber.co.nz).

#### **Paint Finish**

Boards must be primed on all four sides with all cut ends and bare timber surfaces primed during installation. Nails are to be punched and holes to be primed without delay. Fill holes with a suitable filler. Filled holes to be primed and sanded once dry.

Two top coats should be applied as per coating manufacturers' instructions.

Most profiles can be machined as a paint profile (2mm radius edges) on request.

During installation all end grain and cut edges are to be sealed with suitable coating prior to installation and manufacturer's coating schedules adhered to.

Once installed cladding must be cleaned and inspected for damage annually. JSC maintenance schedule available on request from [specifications@jsctimber.co.nz](mailto:specifications@jsctimber.co.nz)

## **Maintenance**

Responsibility is on the building owner to clean and maintain their JSC Weatherboards. This includes an annual inspection and regular clean with a soft brush, warm water and detergent. Repairs to damaged areas or areas where signs of deterioration are evident, must be repaired immediately and recoating should be at intervals of approx. 2-3 years in accordance with JSC installation details and coating manufacturers' guidelines. More exposed Northern and Western faces will require more frequent recoating. Maintenance guidelines available at [www.jsctimber.co.nz](http://www.jsctimber.co.nz) or [tech@jsctimber.co.nz](mailto:tech@jsctimber.co.nz)

Installer to ensure owner has Maintenance Schedule Guidelines as required by JSC Timber and coating manufacturer. Also Refer to E2/AS1 - Maintenance - general 2.5 and regular maintenance 2.5.1.

## **Installation**

JSC VertiClad must be installed by a suitably qualified and experienced tradesperson. Where restricted Building Work (RBW) applies the installer shall be a Licensed Building Practitioner (LBP) or supervised by an LBP.

### **Moisture Management**

Immediately before installation, test the moisture content of the boards. Use a moisture meter to test 5% of boards, but not less than 10 boards, in the centre of the length. Do not start fixing until 90% of the values obtained are within the range in NZS 3602 table 4 - Allowable Moisture

Content (%), at time of installation. The JSC Castellated battens are supplied kiln dried. Ensure that at the time of cladding installation the batten moisture content is no greater than 20% mc.

### **Substrate**

Before installation ensure that the substrate is straight, true and within the framing tolerances of NZS 3604, section 2, table 2.1. Also refer to NZS 3604, sections 6 and 11 – for specific requirements relating to support for timber board cladding.

### **Building underlay**

NZBC compliant breather type, waterproof, to NZBC E2/AS1, table 23: "Properties of underlays and building wraps". Fixings to comply with E2/AS1, 9.1.8.5 "Wall framing behind cavities".

Alternatively, a building wrap with a Product Certificate (Codemark) or a BRANZ Appraisal are acceptable provided the conditions of use and scope are appropriate.

The building wrap can be restrained from bulging into the drained cavity by applying polypropylene tape at 300mm centres, Nogs/Dwangs shall be at max. 400mm centres as required per E2/AS1 9.1.7.1 Wall underlays, table 23.

## **Exterior cavity wall battens**

### **Specific requirements of Verticlad on JSC-45 & 75 x 45 Cavity System**

The JSC V 45 & 75 x 45 Cavity system allows the designer not only the added redundancy of a 45mm deep drained cavity, but also additional design options to create deeper window reveals etc.

The JSC castellated batten is outside the scope of E2/AS1, which is limited to a nominal 20mm thick cavity batten. The 20mm batten in E2/AS1 is a packer only, where as the JSC – 45 & 75 x 45 batten becomes a structural wall framing component.

The fastenings that secure the JSC – 45 & 75 x 45 batten must have adequate structural strength to support and transfer all applied loads back to the framing.

The following applies for framing:

- Vertical studs at a maximum spacing's of 600mm centres (maybe varied by specific design-wind load and stud height).
- Horizontal nogs at a maximum of 400mm centres.

With the following fixings:

In accordance with NZS3604

The following applies for JSC - 45 & 75 x 45 batten:

- JSC V 45 & 75 x 45 batten is installed horizontally at 400mm centres in line with the framing nog lines.
- Vertical battens at corners (internal and external) and picture framing all window and door openings.
- Nail to all studs and each intermediate nog (minimum).
- All accessory componentry including vermin proofing, cavity closures, back flashings and head flashing are custom fabricated.

With the following fixings:

- 3.15mm x 90mm galvanised gun nails
- Any alternative hand driven or power driven nail or screw that will provide a minimum of 0.55 kN and have embedment of no less than 35mm into the structural framing.

The following applies for JSC Verticlad:

- Install in accordance with JSC VertiClad installation requirements.

With the following fixings:

- Fixings as specified E2/AS1, Table 24 eg. 60mm x 2.8mm JH nails
- Any alternative nail or screw of equivalent diameter and length

*Note: Refer to E2/AS1 Durability table to ensure the correct fixing material is specified to meet the site exposure and climate zone.*

Fix JSC-U H3.2 castellated timber battens horizontally and vertically. Fix horizontal cavity battens to wall framing nogs. The battens are fixed, by the cladding fixings, which will penetrate the wall framing studs over the building underlay, ref: NZBC E2/AS1 9.1.8.5, Wall framing behind cavities.

- Install JSC-U CCA treated castellated batten with the 18 degree slope, sloping away from the wall underlay towards the back of the weatherboard ensuring water is shed away from the framing.
- Nail to nogs vertically @ maximum 480mm centres and horizontally @ maximum 400mm centres forming a horizontal drained cavity.
- Temporary fix battens with 50mm stainless steel clouts before being fixed into the framing with the cladding fixings. See E2/AS1 9.1.8.1 Limitations.
- Refer to specific requirements for 45mm thick JSC cavity battens.
- Seal the top of the cavity and install cavity closer/vermin-proofing at base of walls, open horizontal (or raking) junctions, over openings (windows, meters etc). Use cavity spacers where fixing is required between cavity battens. Refer to JSC Timber for fixing details and technical specification.
- To be drained and open to the exterior at the base of cavity. Refer to JSC Timber VertiClad System for specific fixing details and technical specifications.
- Except for bottom edge, ensure cavity battens are spaced 10mm from each other on ends/joins, internal and external corners and when parallel.
- Cavity battens to be installed over wall underlay or Rigid Air Barrier and shall comply with table 23 and fixed to wall framing.
- Alternative NZBC compliant cavity batten may be used in place of JSC-U battens.
- 45 x 45mm battens to be fixed to the wall with 90mm x 3.15mm hot dipped galvanized nails (see specific requirements of 45mm battens) except in zone D where stainless steel annular grooved are required. See NZS3604:2011 Section 4.
- If battens fixed over a nog, one nail per 300mm minimum.
- 45 x 70mm battens can span up to 600mm. However, the fixing method is the same as 45mm x 45mm battens.

Refer to NZBC E2/AS1 table 21 for Compatibility of materials in contact between CCA treated battens and flashings

For V/H and E/H wind zones (as defined NZS3604:2011) solid batten required down one side of corner to provide isolation between cavity.

### **Weatherboards and Set-out**

Using laser or mechanical devices set-out the overlap boards to ensure dimension to exposed face in line of weather is constant and that boards remain true. Use a string line or laser level to set out all nailing that will be visible in finished work. Align all nailing accurately in straight lines.

Adjust set-out to ensure there is a 2mm expansion gap between lapped boards. **Single face fix** weatherboards to every fixing point, with nail driven in with a slight (2°+) upward slope, 35mm from overlapping edge of weatherboard. **Nails to achieve a minimum 35mm embedment into the framing.** Line nails horizontally across the boards. Do not pin laps of weatherboards. Clinch nails optional.

External corners to be weatherproofed by the use of corrosion resistant back flashing and to be used behind the weatherboards at all external corners. Use JSC Timber external corner mould options.

Internal corners to be weatherproofed by the use of durable back flashings and to be behind the

weatherboards at all internal corners. The use of internal corner mould options includes JSC Timber J41 (19mmx19mm) or J44 (28mmx28mm). Refer to JSC Timber fixing details. In addition, all cut edges are to be sealed prior to installation and manufacturers coating schedules adhered.

### **Optional Clinch Nails**

If used, 40 x 2.0mm, annular grooved shank grade 316 stainless steel may be used to retain hidden lap tongues of rebated weatherboard profiles. Clinch nails are not a requirement of JSC or NZBC E2/AS1.

### **Nail fixings**

#### **Oiled/Stained finish**

Install level, true to line and face, to NZBC E2/AS1: 9.4 Timber weatherboards. Coat all cut edges before fixing with JSC Timber specified oil/stain product. **Single face fix 35mm** from edge of weatherboard. **Do not pin laps of weatherboards.** Pre-drill all fixings minimum 1.0mm smaller than nail gauge to ensure a snug fit and to minimise risk of moisture entry. A minimum 35mm embedment into the batten is required. Finish the nail heads flush onto and not into the board surface. Do not 'over drive' the nail head and crush the timber surface beneath and surrounding the nail.

Refer to E2/AS1, Table 24, Fixing selection for wall claddings, for dimensions and fixing details.

#### **Paint finish**

Install level, true to line and face, to NZBC E2/AS1: 9.4 Timber weatherboards. Dressed faced profiles to have a radius to outer edges and be pre-sanded prior to undercoating and priming.

Coat all cut edges before fixing with the correct undercoat and primer. Pre-drill all fixings minimum of 1mm smaller than nail gauge to ensure a snug fit and to minimize risk of moisture entry. Finish the jolt head nails 3mm below the surface and undercoat and prime prior to filling and sanding.

NOTE: All undercoat, primers, fillers and surface paints to be as specified by coating manufacturer. To ensure boards are well sealed, make sure all exposed ends are top coated twice, the same as face of boards.

Refer to E2/AS1, Table 24, Fixing selection for wall claddings, for dimensions and fixing details.

### **Flashings**

Material, grade and colour as detailed and scheduled and to NZBC E2/AS1: Table 21 compatibility of materials in contact and Table 22 Compatibility of materials subject to run-off. Ensure that materials used for flashings are compatible with the window frame materials and fixings and cladding materials and fixings.

### **Horizontal Control Joints**

In accordance to E2/AS1 9.1.9.4 a maximum of 10 meters in height or over two stories an inter-story junction is required.

### **Completion**

Ensure the work is complete with all flashings, finishing and trim properly installed ensuring the cladding system is completely weathertight.



### Contact Details

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Machined profiles, technical drawings and coated samples are available on request.