



vertical



## Cedarscreen Vertical Shiplap Weatherboards 45mm Structural Cavity Batten System

Vertical weatherboarding has undergone something of a transformation in recent years. In the 1950s architects looked to translate the aesthetic of the Modernist Movement in America into a New Zealand context. Long lazy gable roofs and simple glazed walls, were combined with simple claddings to create a housing style that was not only fresh and sophisticated, but was readily accessible to an increasingly discerning New Zealand clientele.

### Introduction

Today's technically advanced cladding systems and enhanced profiling and machining methods, mean that vertical weatherboarding can be manipulated to exploit the full range of possibilities that timber provides. From the cool clean lines of narrow profiled boards with crisply profiled joints, through to random depth and width weatherboards that evoke images of the richly textured environment that many of our buildings find themselves in.



### General

The Rosenfeld Kidson Cedarscreen Vertical 45mm is an innovative new system for vertical shiplap weatherboard external wall cladding utilising a 45mm structural cavity batten. The system is used for residential and light commercial building types.

The primary benefit of this system is that the cladding is only required to be fixed to the batten alone and the face fixings do not penetrate beyond the batten, helping to maintain the integrity of the building envelope and air seal. The batten can span studs without the need of additional nogs/dwangs. The 45mm cavity also allows for improved drainage and ventilation.

Rosenfeld Kidson cavity battens are treated to H3.2 and the first to use the 'environmentally preferable' MCQ treatment.

The Cedarscreen Vertical 45mm cavity system comprises of vertical shiplap weatherboards (factory finished to all sides with a migrating wood oil), horizontal and vertical H3.2 MCQ treated structural cavity battens, stainless steel cavity batten fixings, stainless steel or silicon bronze cladding fixings and powder-coated aluminium flashings.

# Cedar Screen Vertical Weatherboards 45mm Structural Cavity Batten System Continued

## Scope

The Cedarscreen Vertical 45mm system has been tested as an externally fixed vertical wall cladding system to comply with and is limited to the following:

- NZBC Acceptable Solution (E2/AS1/VM1, Paragraph 1.1)
- Testing included Amendment 5 of E2/AS1, including Extra High
- Specific wind pressure up to a maximum ultimate limit state (ULS) 2.5 kPa (2500 Pa)
- Risk score of 0-20 (E2/AS1 tables 1, 2 and 3)
- Timber framing to comply with NZBC NZS 3604
- NZS 3604 Wind Zones
- Material, products and processes contained within the building scope of NZS 3604
- Tested for use with aluminium windows and door joinery to comply with NZS 4211

### New Zealand Building Code (NZBC) performance requirements:

The Cedarscreen Vertical 45mm system if designed and installed as per the Rosenfeld Kidson installation brochures and construction details, will meet the provisions listed below.

- Clause B1 Structure: Performance B1.3.1, B1.3.2 and B1.3.4 and B1.3.3 (a), (h), (j) and (q)
- Clause B2 Durability: B2.3.1 (b) 15 years and B2.3.2.
- Clause E2 External Moisture: E2.3.2.
- Clause F2 Hazardous Building Materials: Performance F2.3.1

## Compliance

Cedarscreen Vertical is tested fully in accordance with E2/AS1/VM1 External Moisture Verification Method Testing Building Facades and NZS 4284:2008 Testing Building Facades Specific Design. Testing was carried out at an IANZ accredited facility in accordance with Clause 1.0 E2/AS1. The test process included cladding junctions with windows, doors, soffit, penetrations, internal and external corners.

## Available cavity battens

- Horizontal CS-H 45x45mm structural cavity batten
- Horizontal CS-H 65x45mm structural cavity batten
- Vertical CS-V 45x42mm structural cavity batten
- Vertical CS-V 65x42mm structural cavity batten.

## Species

### Western Red Cedar:

Western Red Cedar (*Thuja plicata*) weatherboards are compliant for above ground use in accordance with New Zealand Standard NZS 3602: 2003 Timber and Wood-based Products for use in Building and when fixed above ground exceeds the minimum 15-year durability requirement.

### Maintenance:

Maintenance shall be carried out as necessary to achieve the required durability of materials, components and junctions. The extent of the nature of necessary maintenance is dependent on:

- Type of cladding and components used.
- Position of cladding and components on the building.

- Geographical location, (recoating with stain or WoodOil will be required more frequently on more exposed northern and western faces).
- Manufacturer cleaning and recoating schedules.

Regular maintenance is essential to ensure the performance requirements of the NZBC are met and to maximise serviceability of the system.

Annual inspection of the cladding material must be made to ensure that all aspects of the cladding system, including flashings and joints remain weatherproof. Any damaged areas or areas showing signs of deterioration, which could allow water ingress must be repaired immediately.

Regular cleaning (at least annually) of the stain or WoodOil coating is required to remove dirt or grime and fungal growth. Dirt and grime may be removed with the use of a soft brush, warm water and a light detergent cleaner.

# Cedar Screen Vertical Weatherboards 45mm Structural Cavity Batten System Continued

Recoating with either a stain or WoodOil will be required throughout the life of the cladding system. Check manufacturers product specific recoating requirements, as these may vary from product to product.

Rosenfeld Kidson recommends the use of Dryden WoodOil with all our exterior weatherboard systems. Recoating must be carried out approximately every 2-3 years in accordance with the Dryden manufacturer instruction.

Note: some stains or film forming cedar coatings may require annual maintenance. Refer to individual suppliers maintenance guides for appropriate product specifications.

Ensure ends of weatherboards and cut or exposed edges are recoated during any general maintenance.

### Sustainability:

Western Red Cedar is also favoured by conservationists as the forests of British Columbia, from where our cedar is sourced, are well-managed and certified as such. All our producers carry certification under SFI, CSA, FSC or PEFC. Please refer to the following site for more information regarding this: <http://www.realcedar.com/why-real-cedar/certification/>

### Sizes & Grades:

Our weatherboards are available in 19mm, 28mm and 39mm thicknesses and cover widths range from 58mm up to 203mm.

The standard weatherboard length range is 1.83m to 4.88m, averaging 3.35m. Selected and longer lengths are available on request.

- For use as vertical shiplap or board and batten Rosenfeld Kidson PC1 grade Western Red Cedar is recommended. Any defects or knots should be removed prior to installation. Weatherboards shall be continuous in length between each storey height.
- It is good practice to pre-order weatherboards in the required selected length spread. On-site measuring should confirm the length spread required.

## Manufacturing

### Profile range:

- Standard profile range RK49 to 60.
- Architectural profile range RKA 500 to 516.

Profiles are manufactured to meet the requirements of E2/AS1 (Acceptable Solution). This is achieved with compliance to Clauses 9.4.1 and 9.4.1.1 of E2/AS1 and Clause 9.4.1.2 E2/AS1 vertical shiplap weatherboards. Profiles shall be as given in NZS 3617 or Branz Bulletin 411.

### Accessories:

#### Fascia:

Western Red Cedar fascia.

RK69 135x18.5mm, supplied in lengths 3.9m and longer.

RK70 180x18.5mm, supplied in lengths 3.9m and longer.

RK71 135x28mm, supplied in lengths 3.9m and longer.

RK72 180x28mm, supplied in lengths 3.9m and longer.

RK73 230x28mm, supplied in lengths 3.9m and longer.

#### Internal and external corners:

**External:** Western Red Cedar RK42 42x42mm (19mm), RK93 65x65mm, RK94 90x90mm, RK95 90x90mm, RK97 45x45mm, supplied in lengths 2.4m and longer.

**External:** Western Red Cedar cover boards RK91 and RK92, 18.5mm thick boards in widths of 69mm and 90mm, supplied in lengths 2.4m and longer.

**Internal:** Western Red Cedar internal corner mould RK41 19x19mm and RK98 shiplap internal corner profile, supplied in lengths 2.4m and longer.

### Mouldings:

Western Red Cedar eaves mould RK32 40x27mm, supplied in lengths 2.4m and longer.

Western Red Cedar bevelled cornice RK7 30x18x10mm, supplied in lengths 2.4m and longer.

### Scriber:

Western Red Cedar scribes RK12 40x17mm and RK13 40x10mm supplied in selected lengths.

### Finish:

- BSF Band Sawn Face.
- DF Dressed Face or DFS Dressed Faced Sanded (it is recommended dressed face weatherboards are sanded prior to applying coating products).

### Moisture Content:

Western Red Cedar panels are delivered to site air-dried to between 16% and 18% moisture content.

### FactoryOil:

This is a specifically designed spray process for applying WoodOil to our weatherboards. Dryden WoodOil is applied prior to delivery to all faces of the weatherboard profile. This uniquely formulated product will increase the durability and performance of the cladding during its in service life. Factory coating to all faces not only enhances the visual

# Cedar Screen Vertical Weatherboards 45mm Structural Cavity Batten System Continued

effect of Cedar but when maintained to manufacturer specifications, it also greatly reduces moisture penetration, limiting excessive hygroscopic movement.

#### At time of order:

- Check dressed faced weatherboards are face sanded, if being factory oiled.
- Sign off profile confirmation check sheet.
- Sign off colour confirmation check sheet.
- Check pre-order of a minimum 4ltr of Dryden WoodOil for sealing cut or exposed edges.

#### Handling & Storage:

Care should be taken to protect Western Red Cedar from the elements. All plastic wrapping, timber gluts, packers and strapping should remain intact until stored in a suitable location.

Packets of vertical weatherboards should be stored a minimum 100mm clear from the ground at all times. Storage should be in a dry enclosed location where temperature and humidity are kept relatively stable i.e. dry, dust free and free from sub trade contamination.

## Framing

#### Framing:

- All framing must comply with NZS 3604.

#### Wall Underlays:

- Must comply with Table 23 and Clauses 9.1.5 – 9.1.7 E2/AS1.
- Flexible flashing tape as per Clause 4.3.1.1 E2/AS1.

#### Flexible Wall Underlays:

- Flexible wall underlays shall be in accordance with Table 23 E2/AS1.
- Flexible wall underlays shall be fixed in accordance with Clause 9.1.7.1 E2/AS1.
- Be run horizontally.
- Have upper sheets lapped over lower sheets to ensure that direction of lap will allow water to be shed outside of the wall underlay.
- Be lapped not less than 75mm at horizontal joints.
- Be lapped not less than 150mm over studs and vertical joints - see manufacturer specifications for taped joint options.
- Flexible wall underlay as per Clause 9.1.5 shall be cut and dressed into all sides of openings as per figure 72A and 72B E2/AS1.
- Flexible flashing tape shall be applied to head and sill framing as shown in figure 72A and 72B E2/AS1. Flexible tape shall comply with parts 3.2 and 4 of ICOB Acceptable Criteria AC 148 and be compliant with the wall underlay.
- Extend 35mm below bottom plate or bearer.
- Be restrained from bulging - use polypropylene tape at 300mm centres tape shall be fixed horizontally and drawn taut refer Clause 9.1.8.5 E2/AS1.

#### Rigid Wall Underlays:

- Are required in Extra High wind zones refer to Table 3 and Table 23 E2/AS1.
- Where walls are not lined such as gable ends, attics spaces an air barrier compliant to Table 23 E2/AS1 shall be fixed to framing prior to installation of cavity battens. For attached garages, underlays to Clause 9.1.3.4 E2/AS1.
- Rigid wall underlays shall be fixed in accordance with Clause 9.1.7.2 E2/AS1.
- Be a minimum 6mm fibre cement sheet or 7mm H3.2 plywood sheet.
- Be installed with sheet edges fixed over solid framing.
- Be over-fixed with a flexible wall underlay from Table 23 and installed as in Clause 9.1.7.1 E2/AS1. Note: some proprietary systems may not require the addition of a flexible underlay.
- Flexible wall underlay as per Clause 9.1.5 shall be cut and dressed into all sides of openings as per figure 72A and 72B E2/AS1.
- Flexible flashing tape shall be applied to head and sill framing as shown in figure 72A and 72B E2/AS1. Flexible tape shall comply with parts 3.2 and 4 of ICOB Acceptable Criteria AC 148 and be compliant with the wall underlay.
- Be finished flush with the underside of bottom plate or bearer.

#### Air Seals: As per Clause 9.1.6 E2/AS1.

- Windows, doors and other penetration openings shall be provided with flexible air seals to minimise the risk of airflow carrying water into the building wall.

# Cedar Screen Vertical Weatherboards

## 45mm Structural Cavity Batten System Continued

### Ground Clearance:

As per Clause 9.1.3 and Table 18 E2/AS1.

- At ground level the base of the cladding material shall overlap the concrete slab a minimum 50mm (Note: direct fixed only wall cladding shall be offset horizontally 6mm to avoid capillary action). The bottom edge of the cladding material shall finish 100mm above a paved surface or 175mm above an unpaved surface.

### Penetrations:

As per Clauses 9.1.9, 9.1.9.1, 9.1.9.2, 9.1.9.3 and figure 68 E2/AS1. Or visit [www.vanluk.co.nz](http://www.vanluk.co.nz) for pipe and cable cavity flashings.

### Drained Cavities:

As per Clause 9.1.8 E2/AS1.

Structural Cavity Batten options:

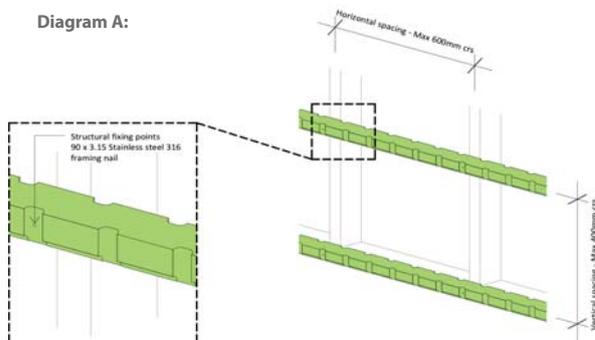
CS-H 45x45mm and 45x65mm horizontal cavity batten.

- Cavity battens are treated with MCQ treatment to H3.2.
- 15 degree slope to the top of the cavity batten.
- 6x6mm drip edge to the lower face of the cavity batten.
- Cavity battens are nominally 45x45mm.
- Castellation dimensions are 25x6mm, internal corners are radiused to strengthen the section.

### Requirements:

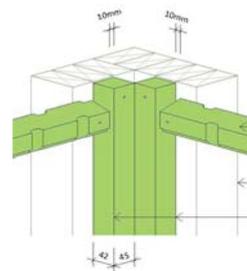
- Treatment to meet the requirements of NZS 3640
- Be installed over wall underlay, either flexible or rigid compliant with Table 23 E2/AS1.
- Be compliant with B2/AS1.
- Cavity battens are to be fixed horizontally at maximum 400mm centres with studs spacing between 400mm or to a maximum 600mm centres.
- CS-H structural cavity battens are fixed directly to the framing with 90x3.15 stainless steel nails at each fixing point.

Diagram A:



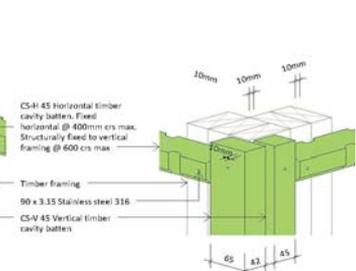
- Sloped edges are to be fixed directing moisture back towards the cladding.
  - Battens shall be fixed vertically to jambs 10mm in from the framing edge. Horizontal battens shall be fixed 10mm below the sill framing edge or below the sill support bar.
  - Additional CS-H structural 45x65mm cavity battens may be required to support the weatherboard fixing below the sill support bar.
  - Vertical battens shall be fixed at internal and external corners, allow a 10mm gap between all vertical and horizontal battens. Fix with 90x3.30 Stainless steel nails at each fixing.
- CS-V structural 45x42mm vertical corner and jamb batten.
  - CS-V structural 65x42mm vertical corner batten.

Diagram B



Internal Corner Detail

Diagram C



External Corner Detail

- Be drained and open to the exterior at the bottom of the cavity.
- Vermin proofing: as per Clause 9.1.8.3 E2/AS1.
- Cavity closer to be used in drained cavities at the base of the wall lining and above window heads and inter storey flashings.
- Cavity closure shall provide a minimum ventilation area of 1000mm<sup>2</sup> per metre length as per figure 66 E2/AS1.
- Be positioned to allow a drip edge to the wall cladding of 10mm at the base of walls and 15mm above window and door head flashings..

### Flashings:

As per Clause 4.0 E2/AS1.

- Flashing material selection shall comply with Table 20 E2/AS1 and meet the compatibility of Tables 21 and 22 E2/AS1. Flashings shall have a minimum 50mm cover and have hem folded edges as per Clause 4.5.2 E2/AS1.
- Ensure material thicknesses are as per the requirements of Clause 4.0 E2/AS1 prior to ordering.
- Internal and external back flashings refer figure 79 and Clause 9.4.4.5 E2/AS1.
- Aluminium flashings to be powder coated to all faces and edges.

# Cedar Screen Vertical Weatherboards 45mm Structural Cavity Batten System Continued

## Fixings:

Fixing recommendations are based on principals set out in Table 24 E2/AS1.

### 45x45mm structural cavity batten:

- Structural cavity batten – use 90x3.30mm stainless steel 316 nails.
- Rosenfeld Kidson flat, rose or pentagon head annular grooved nails 60x3.2mm, stainless steel 316 or silicon bronze.

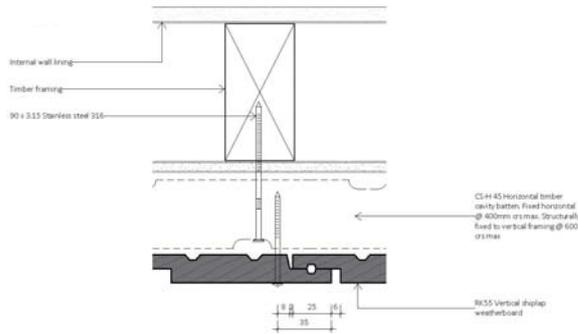


Diagram D

## Windows & Doors:

The weatherboard system relies on the joinery meeting the requirements of NZS 4211 for the relevant Building Wind Zone or wind pressure.

- Shall be in accordance with Clauses 9.4.6 to 9.4.7 E2/AS1.
- Window profiles to be selected to achieve cover shown in details.
- Wall underlays to wall openings as per Clause 9.1.5 E2/AS1.

- Sill support bar required conforming to EM6 and Clause 9.1.10.5 refer figure 72B E2/AS1.
- For Very High and Extra High wind zones seal head flashing to window flange as per figure 71b E2/AS1.

## Head Flashing:

- Head flashings shall be fixed with a minimum 35mm cover flashing upstand with additional flexible underlay or tape overlapped over the flashing upstand.
- Extra High wind zones require a minimum 75mm cover flashing to head flashing upstand.
- Ensure head flashings have a minimum 15 degree fall with a 5mm gap between head flashing and weatherboard refer figure 83 E2/AS1.
- Head flashings shall be fixed with stop-ends to suit the cavity depth, head flashing shall extend to provide 30mm cover or if scribes are used the flashing shall extend 20mm past the finished scribe refer figure 83(c) E2/AS1.
- Window sill joiner cover shall be a minimum 8mm at the sill and 10mm minimum at jambs. Jambs shall be scribed or apply foam bond breaker and continuous protective sealant the full length of the jamb line refer figure 83 E2/AS1.

Air seals as per Clause 9.1.6 E2/AS1.

- Ensure an air seal is provided with a flexible air seal to minimise the risk of airflows carrying water into the building wall. The air seal shall be provided between the reveal or frame and the wrapped opening as per figure 81 E2/AS1. Be installed over a closed cell polyethylene foam (PEF) backing rod.
- And (i) self-expanding polyurethane foam or (ii) sealant complying with clause 9.1.6 (a) and (b) E2/AS1.
- Temporary packers shall be removed after fixing.

## Fixing Vertical Weatherboards

### Limitations

Cedarscreen Vertical must only be installed by a registered LBP (Licenced Building Practitioner).

Fixing methods shall be in accordance with Clause 9.4 E2/AS1.

- Check weatherboards are factory oiled on all surfaces including weather grooves prior to deliver.
- Ensure on-site provisions are appropriate allowing for good storage and working space.
- Ensure all timber products are free from sub-trade and climatic contamination during the building process.

### Fixing Process:

Start the fixing process from either an internal or external corner, the layout of the vertical shiplap weatherboards should be configured against the prevailing wind. Establish an accurate measurement between the starting corner and finishing point working out an even board set out taking into account all associated junctions including window jambs. This will ensure full width boards are allowed for and trimmed into window jamb to head junctions.

- Jamb to head and sill junctions, ensure weatherboards are full width and continuous in length.
- Ensure vertical weatherboards are continuous in length between inter storey heights (maximum height 2 storey).

# Cedar Screen Vertical Weatherboards 45mm Structural Cavity Batten System Continued

- Check weatherboard length spread and use appropriately to suit each cladding face.
- Cut weatherboards to length ensuring a minimum 50mm overhang of the bottom plate.
- Apply WoodOil to all cut or exposed edges prior to installation.
- Weatherboards shall be pre-drilled prior to fixing with a single fixing to each fixing point.

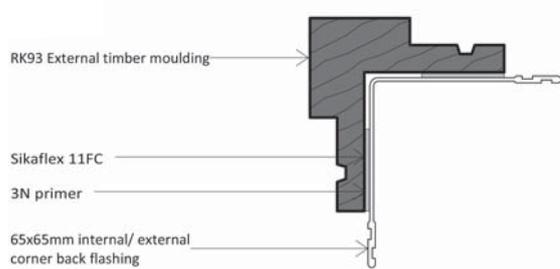
### Corners:

- Internal corners shall be weatherproofed with hem folded 50x50mm or 65x65mm back flashings using the RK41 or RK98 internal corner moulds.
- External corners shall be weatherproofed with hem folded 50x50mm, 65x65mm and 90x90mm back flashing using the RK42, 93, 94 or 95 external corner moulds.

RK93, 94, 95, 97 and 98 profiles are designed to be adhesive fixed with extra fixing given by the lapped shiplap joint. These profiles are ship-lapped to increase the weatherproofing of the cladding junction.

Adhesive fixing: Refer to Sika bond method statement for use of 3N primer and Sikaflex 11FC with Western Red Cedar.

Diagram E:



### Fixings:

Weatherboards shall be fixed to the CS-H structural cavity batten as per the below recommendations that are based on principals set out in Table 24 E2/AS1.

- Fixings shall be hand driven.
- Locate nails 10mm in from the shiplap.
- A minimum of 35mm fixing penetration into framing is required.
- Vertical weatherboards shall be fixed to structural cavity battens at a maximum 400mm centres.
- CS-H 45x45mm cavity battens are fixed structurally to framing; weatherboards are then fixed directly to the structural cavity batten as shown in diagram D.
- Weatherboards shall be lapped to provide 25mm effective cover with a minimum 2mm gap at the overlap between boards.
- Ensure the 6x3mm weathergrooves are lined up to form a 6x6mm weathergroove.

### Windows & Doors:

- Ensure head flashing stop-ends are in place prior to nailing weatherboards.
- Jambs shall be scribed with the RK12 profile or weathered with a foam bond breaker with a continuous protective sealant bead along the jamb line refer figure 83 (c) E2/AS1.
- Scribes are to be sealed to weatherboards.

### Finishing:

- Apply the finishing coat of WoodOil. Use Dryden WoodOil as per manufacturer specifications.

Recommended coverage rates for onsite application of Dryden WoodOil. (These are indicative rates and coverage may vary depending on site conditions).

- Recommended coverage rate for BSF 8-10 m<sup>2</sup> per ltr.
- Recommended coverage rate for DF 10-12 m<sup>2</sup> per ltr.

Dryden WoodOil is deep, migrating oil that not only adds colour but enhances the timber's natural properties, protecting surface fibres and stabilising the timber's cell structure. To ensure an optimum performance level is achieved your cladding should be annually cleaned and maintained in accordance with Dryden manufacturer maintenance schedules.