

## Nu-Wall Aluminium Cladding – Installation Reference

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### Introduction

This installation reference offers guidelines for the application of Nu-Wall over new timber frame constructions, or for re-cladding of existing structures. Nu-Wall can also be installed over steel framing and other substrates, including over-cladding. While not all are covered in this document and referenced drawings, assistance is available with detailing of such specifications.

This document is designed to be used in conjunction with published specification drawings, copies of which are available upon request; alternatively they may be downloaded in PDF format from the website – [www.nu-wall.co.nz](http://www.nu-wall.co.nz). For best results and a weather-tight outcome, please study the details carefully with particular attention to procedures at details such as corners and around window and door penetrations. Nu-Wall is essentially a weatherboard product; the only fabrication required prior to installation being cutting to length and some longitudinal ripping of the extruded sections. As such, installation should be well within the capabilities of a competent builder.

Please refer to the document “Nu-Wall Aluminium Cladding – General Information” for advice on the selection and care of the product’s pre-finished surface.

### Preparation

Before starting any installation check the following:

That all components are stored safely and securely off the ground in dry conditions and away from potential damage or theft. It is easier to protect the pre-finished products than to repair or replace them.

Ensure all safety equipment is at hand; e.g. eye- and ear-protection, and that you follow established safe practice with access equipment.

Ensure that you are fitting the cladding over a building wrap complying with NZBC Acceptable Solution E2/AS1, Table 23, or a breather-type membrane covered by a valid BRANZ Appraisal for use as wall wrap. The building wrap must have a minimum 100 grams per square metre water absorbency for direct fixed installations. There is no absorbency requirement for building wraps used behind Nu-Wall weatherboards when they are installed over a drained and vented cavity. Building Wrap must be installed horizontally and be continuous around corners. The wrap must be lapped 75 mm minimum at horizontal joints and 150 mm minimum over studs at vertical joints.

All buildings must have barriers to airflow in the form of interior linings with all joints stopped, or alternatively, unlined gables and walls must incorporate a rigid sheathing or an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. Where rigid sheathings are used, the fixing length must be increased by a minimum of the thickness of the sheathing.

### Handling and storage

Nu-Wall weatherboards and accessories must be stacked flat, off the ground and supported on a level platform. They must be kept dry either by storing under cover or providing waterproof covers to the stack. Care must be taken to avoid damage to powder coated surfaces. Weatherboards must always be carried on edge.

Cavity battens and other accessories must be stored so they are kept clean, dry and undamaged. All accessories must be used within the maximum storage period recommended by the manufacturer.

### Layout

Where drawings and/or other information have been supplied, indicating the layout and utilisation of boards and offcuts, these will have been prepared from scale drawings, necessitating certain judgements regarding dimensions. Such drawings or sketches should be viewed as a guide only; dimensions should be verified by measuring on-site.

### Tools

The following should suffice for most situations –

- Hammer and appropriate nail punch.
- Level or dumpy level.
- Chalk line.
- Hacksaw, and preferably a jigsaw (though for large projects, also a drop-saw with appropriate blade).
- Mastic gun and tinsnips.
- Electric drill with square drive & 5mm drill bits.

### Building regulations

The Nu-Wall cladding systems if designed, used and installed in accordance with the statements and conditions of this literature and the supporting BRANZ Appraisal, will meet the following provisions of the New Zealand Building Code:

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- Clause B1 Structure
- Clause B2 Durability
- Clause E2 External Moisture
- Clause F2 Hazardous Building Materials

### Structure and framing

Timber framing must comply with NZS 3604 for buildings or parts of buildings within the scope limitations of NZS 3604. Buildings or parts of buildings outside the scope of NZS 3604 must be to a specific design in accordance with NZS 3603 and NZS 4203. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604. In all cases studs must be at maximum 600 mm centres. Dwangs must be fitted flush between the studs at maximum 800 mm centres, except for Nu-Wall weatherboards installed in a vertical orientation where the dwangs must be installed at maximum 600 mm centres.

Steel framing must be to a specific design meeting the requirements of the NZBC. The minimum framing specification is 'C' section studs and noggs of overall section size of 75 mm web and 32 mm flange. Steel thickness must be minimum 0.55 mm. In all cases, studs must be at maximum 600 mm centres. Dwangs must be fitted flush between the studs at maximum 800 mm centres except for Nu-Wall weatherboards installed in a vertical orientation where the dwangs must be installed at maximum 600 mm centres.

### Fixing requirements

The Nu-Wall Universal Fixing Bracket, used as specified, has been verified for Wind Zones up to and including Very High on structures within the scope of NZS3604. Projects which are outside of this scope would be the subject of specific design, possibly requiring an increased fixing density; this should have been specified during the design process.

### Inter-storey junctions

Inter-storey drained joints must be provided for walls over two storeys in height in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4(b).

### Installation (horizontal direct-fixed)

#### Recommended fixing sequence

Fix any supplementary flashings required, such as at junctions with other cladding materials etc.  
Clips for all corners and vertical joints.  
Jamb flashing base / J-mould at cladding junctions.

Starter strip between vertical jointer and corner clips.  
Nu-Wall boards up to the bottom of windows.  
Sill flashing and sill/jamb drainage soakers.  
Jamb flashing base to window & door jambs.  
Nu-Wall boards to top of windows and doors.  
Jamb flashing cap to window and door jambs.  
Then, after installation of joinery –

Head/jamb drainage soakers  
Head flashing (along with any board cut to accommodate the window head).  
See drawings NW-H010 – H014 for guidance.  
Remaining Nu-Wall boards.  
Second part of all two part jointers and trims.

Note: Some jobs may not include all of the above steps.

#### Fitting the initial fixing sections

Please refer to specification drawings NW-P001 – P011 for identification of these sections and their application.

Note that vertical joints should be placed to give the best aesthetic result and at the same time make good practical use of the boards to minimise waste. It may be necessary to introduce more noggings to fully support the joint.

#### The starter strip

Refer to drawings NW-H001 – H004. Establish the lowest point from which the cladding is to start and ensure that the Starter Strip can extend below the bottom plate by the minimum 50mm required by the NZ Building Code. The Starter Strip will permit this dimension to be increased up to a maximum of 105mm, and at this stage it may be possible to set the starting position to facilitate alignment of a full board width with window sill or head levels. It should, however, be noted that this is more likely to be feasible if some planning of these dimensions was included during the design stage. For more information regarding compatible levels, please see the separate document "Nu-Wall Aluminium Cladding – compatible window opening dimensions". Mark out the position of the starter strip to a precise level line that can extend right around the structure - this is vital as there is no subsequent adjustment available between boards.

If there is more than one starting level on your project, work from the lowest point up to the next level to try and get a joint in the boards to coincide with the higher starting level. Varying the position of starter strips, as described above, may also help with this. If this is not achievable and it is necessary to start with a longitudinally-ripped board, then the Nu-Wall base channel should be employed. The starter strip (or base

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channel) should be fixed to the bottom plate under the building paper as depicted in the drawing. Leave short gaps in the starter strip, sufficient to allow vertical joints and corner clips to come to the same bottom level. This detail is depicted in the isometric drawing NW-H004. Fit the initial side of the corners and vertical joints to the framing, having first tacked in place any supplementary flashing material. Leave the second part of the two piece trims to be clipped in place after all of the boards have been installed.

**Installing the Nu-Wall boards**

Cut the boards to length allowing 1.0mm per metre of length for expansion; e.g. in an example of a span of 3.0m to be clad, boards would be cut to 2997mm. Fit the first board into the starter strip ensuring it is fully "home" and check for level. As per drawing NW-H001, the boards are generally fixed using a Nu-Wall Universal Fixing Bracket at every stud (maximum 600mm centres). Ensure that the bracket engages correctly with the fixing fin of the board and that the board is held firmly with no downward pressure exerted upon it – this is important to eliminate distortion or cupping. Continue to check for level as boards are fitted. Ensure that a foam insert seal is installed behind the board at all points where a board meets a vertical detail. See drawings NW-H004 – H007 & NW-H009 for guidance.

**Installation (horizontal over cavity)**

The Nu-Wall Cavity System must incorporate a PVC or aluminium vent strip, punched with 3-5 mm holes or slots complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3. The vent strip must provide a minimum ventilation opening area of 1000 mm<sup>2</sup> per lineal metre of wall.

Nominal 50 mm wide by 25 mm thick (minimum finished size of 45 mm wide by 18 mm thick) cavity battens must be installed over the building wrap to the wall framing at maximum 600 mm centres where the studs are at maximum 600 mm centres or at 400 mm centres where the studs are at 400 mm centres. The battens must be fixed in place with 40 x 2.5 mm hot-dipped galvanised flat head nails at maximum 800 mm centres. When the cavity battens are installed at greater than 450 mm centres, the building wrap must be supported between the battens to prevent the wrap bulging into the cavity space when bulk insulation is installed in the wall frame cavity.

See Note 1 at the end of this document regarding use of treated timber battens.

**Recommended fixing sequence**

Prior to construction of the drainage cavity, the joinery head flashings should be fitted – see drawings NW-H012C – H016C for guidance.

Using staples or similar, tack the Barrier strip (MDPE or similar) in place over all treated timber battens where contact will occur with the cladding or other extruded aluminium sections.

Fix any supplementary flashings required, such as at junctions with other cladding materials etc.

Clips for all corners and vertical joints.

Jamb flashing base / J-mould at cladding junctions.

Starter strip between vertical jointer and corner clips.

Nu-Wall boards up to the bottom of windows.

Sill/jamb drainage soakers.

Jamb flashing base to window & door jambs and sill.

Nu-Wall boards to top of windows and doors.

Jamb flashing cap to window & door jambs and sill.

Then, after installation of joinery –

Head/jamb drainage soakers.

Starter Strip or Base Channel above window heads (along with any board cut to accommodate the window head). See drawings NW-H012C – H016C for guidance.

Remaining Nu-Wall boards.

Second part of all two part jointers and trims.

Note: Some jobs may not include all of the above steps.

**Fitting the initial fixing sections**

Please refer to specification drawings NW-P001 – P011 for identification of these sections and their application.

Note that vertical joints should be placed to give the best aesthetic result and at the same time make good practical use of the boards to minimise waste. It may be necessary to introduce more noggings to fully support the joint.

**The starter strip**

Refer to drawings NW-H002C – H006C. Establish the lowest point from which the cladding is to start and ensure that the Starter Strip can extend below the bottom plate by the minimum 50mm required by the NZ Building Code. The Starter Strip will permit this dimension to be increased up to a maximum of 105mm, and at this stage it may be possible to set the starting position to facilitate alignment of a full board width with window sill or head levels. It should, however, be noted that this is more likely to be feasible if some planning of these dimensions was included during the design stage. For more information

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regarding compatible levels, please see the separate document “Nu-Wall Aluminium Cladding – compatible window opening dimensions”. Mark out the position of the starter strip to a precise level line that can extend right around the structure - this is vital as there is no subsequent adjustment available between boards.

If there is more than one starting level on your project, work from the lowest point up to the next level to try and get a joint in the boards to coincide with the higher starting level. Varying the position of starter strips, as described above, may also help with this. If this is not achievable and it is necessary to start with a longitudinally-ripped board, then the Nu-Wall base channel should be employed. The starter strip (or base channel) should be fixed to the bottom plate under the building paper as depicted in the drawing. Leave short gaps in the starter strip, sufficient to allow vertical joints and corner clips to come to the same bottom level. This detail is depicted in the isometric drawing NW-H006C. Fit the initial side of the corners and vertical joints to the framing, having first tacked in place any supplementary flashing material. Leave the second part of the two piece trims to be clipped in place after all of the boards have been installed.

### Installing the Nu-Wall boards

Cut the boards to length allowing 1.0mm per metre of length for expansion; e.g in an example of a span of 3.0m to be clad, boards would be cut to 2997mm. Fit the first board into the starter strip ensuring it is fully “home” and check for level. As per drawing NW-H003C, the boards are generally fixed using a Nu-Wall Universal Fixing Bracket at every stud (maximum 600mm centres). Ensure that the bracket engages correctly with the fixing fin of the board and that the board is held firmly with no downward pressure exerted upon it – this is important to eliminate distortion or cupping. Continue to check for level as boards are fitted. Ensure that a foam insert seal is installed behind the board at all points where a board meets a vertical detail. See drawings NW-H006 – H009C & NW-H011C for guidance.

### Installation (vertical direct-fixed)

#### Recommended fixing sequence

Ensure that nogs have been installed at 600mm spacing wherever the Nu-Wall cladding is to be installed in order to enable compliance with fixing specifications.

Fix any supplementary flashings required, such as at junctions with other cladding materials etc.

Clips for all corners and vertical joints.  
Jamb flashing base to door jambs.  
Jamb flashing base / J-mould at cladding junctions.  
Base channel between vertical jointer and corner clips.  
Drainage soaker strip to head/jamb/sill.  
Jamb flashing base to window jambs.  
Jamb flashing cap  
Then, after installation of joinery –

Head flashing.  
Nu-Wall boards.  
Second piece of all two part jointers and trims.

Some jobs may not include all of the above steps.

### Fitting the initial fixing sections

Please refer to specification drawings NW-P001 – P011 for identification of these sections and their application.

### The base channel

Refer to drawings NW-V001 – V004. Establish the lowest point from which the cladding is to start and ensure that the base channel can extend below the bottom plate by the minimum 50mm required by the NZ Building Code. Mark out the position of the base channel to a precise level line that can extend right around the structure. The base channel should be fixed to the bottom plate under the building paper as depicted in the drawing. Leave short gaps in the base channel, sufficient to allow vertical joints and corner clips to come to the same bottom level. This detail is depicted in the isometric drawing NW-V004. Fit the initial side of the corners and vertical joints to the framing, having first tacked in place any supplementary flashing material. Leave the second part of the two piece trims to be clipped in place after all of the boards have been installed.

### Installing the Nu-Wall boards

For ease of installation and the best finished result, set out each wall or span to be clad before commencing to cut or fix boards. Plan wherever possible for the full, maximum thickness of the cladding to occur wherever there is a vertical break, such as a corner, window or door jamb, or junction with another cladding material. This will be more challenging with some Nu-Wall profiles than others, however achievement of this will result in a tidy appearance and will facilitate sealing between the cladding face and the capping sections. Ensure that the specified foam sealant tape is installed behind the board at all points where a board meets a vertical detail. See drawings NW-V004 – V006 & NW-V009 for guidance.

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Fixing is generally as for horizontal application, using the Nu-Wall Universal Fixing Bracket at maximum 600mm vertical centres.

### Cutting aluminium

Nu-Wall is no more difficult to cut than timber weatherboards. A jigsaw or even hacksaw is satisfactory for limited cutting, however for larger projects a power saw, fitted with a purpose-made tungsten carbide blade, having a minimum of 60 teeth, negative rake, should be employed. Your saw doctor can supply this blade, along with a suitable lubricant. Use of timber cutting blades with Nu-Wall is not recommended.

### Key Points

- Maintain safe work practices.
- Keep pre-finished product protected from damage and secure from theft.
- Determine the specific fixing sequence for your job prior to commencement.
- When handling and cutting, take care to ensure no damage occurs to the pre-finished surface. Return off-cuts to storage – they may be required for use elsewhere on the job.
- Ensure starter strip or base channel is fitted to a precise level line around the building, or work from an accurate datum if levels vary.
- Maintain 1mm per metre expansion gaps.
- Continue to check boards for level and fix correctly to avoid distortion or cupping.
- Follow good trade practices and general principles relating to cladding and weather-tightness.
- Nu-Wall installation information supplied in this document and referenced drawings cannot cover every conceivable situation and our free-phone line – 0800 NUWALL - is available should you require assistance with any detail specification.
- Responsibility for final weather-tightness and compliance with all local or national regulations lies with the builder / installer.

### NOTES:

1. Paragraph 9.6.9.2 of “Acceptable Solution E2/AS1” states a requirement for appropriate separation to be provided between metal cladding and timber battens which have been treated with a compound of Copper. Timber battens which have been treated with LOSP (Light Organic Solvent Preservation) may not contain Copper compounds, thereby removing

the necessity for such separation. If any doubt exists regarding the specific timber treatment used, separation should be provided.