

# Standing Seam Roofing

## General

This section relates to the supply and fixing of ARCHITECTURAL ENVELOPES Standing Seam Roofing, complete with accessories.

### 1.1 RELATED WORK

- 1.1.1 Refer to 4161 UNDERLAYS, FOIL AND DPC for underlays, foils and DPC. Refer to 7411 RAINWATER SPOUTING SYSTEMS for rainwater disposal.

### 1.2 ABBREVIATIONS AND DEFINITIONS

- 1.2.1 Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.
- 1.2.2 The following abbreviations apply specifically to this section:
- BMT Base metal thickness
  - NZMRM New Zealand Metal Roofing Manufacturers Inc
  - LBP Licensed Building Practitioner

## Document

### 1.3 DOCUMENTS

- 1.3.1 Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:
- NZBC C/AS1-AS7 Protection from fire
  - NZBC E2/AS1 External moisture
  - NZBC G12/AS1 Water Supplies
  - AS/NZS 1170.2 Structural design actions - Wind actions
  - AS 1397 Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
  - AS/NZS 2728 Prefinished/pre-painted sheet metal products for interior/exterior building applications - Performance requirements
  - NZS 3604 Timber-framed buildings
  - NZMRM COP NZ Metal Roof and Wall Cladding Code of Practice.

### 1.4 MANUFACTURER/SUPPLIER DOCUMENTS

- 1.4.1 Manufacturer's and supplier's documents relating to this part of the work: Architectural Envelopes Ltd. literature, including: Product Guide Product Technical Statements Design Solutions.
- NZ Steel: Specifiers and Builders Guide

- NZ Steel: Installers Guide
- Ecoply: Structural Plywood Properties & Application Manual

Manufacturer/supplier contact details Company: Architectural Envelopes Ltd. Web:  
[www.architecturalenvelopes.co.nz](http://www.architecturalenvelopes.co.nz) Email: [bruce@architecturalenvelopes.nz](mailto:bruce@architecturalenvelopes.nz) Telephone: 021  
578739

Warranties: A sample roofing warranty showing terms and conditions, and information on maintenance requirements is available from Architectural Envelopes Ltd. Ph 021 578739 or on website [www.architecturalenvelopes.co.nz](http://www.architecturalenvelopes.co.nz).

### 1.5 WARRANTY - MANUFACTURER/SUPPLIER

- 1.5.1 Provide a material manufacturer/supplier warranty: 15 years (minimum) For Perforation 10 years (minimum) For Coatings - Provide this warranty on the, Architectural Envelopes Ltd. standard, Warranty Plus warranty form. - Commence the warranty from the date of installation.

### 1.6 WARRANTY - INSTALLER/APPLICATOR

- 1.6.1 Provide an installer/applicator warranty: 5 years for workmanship.
- 1.6.2 Provide this warranty on the installer/applicator standard form. - Commence the warranty from the date of installation.
- 1.6.3 Include a copy of the, Architectural Envelopes Ltd. maintenance requirements with the warranty. Refer to the general section 1237 WARRANTIES for additional requirements.

## Requirements

### 1.7 QUALIFICATIONS

- 1.7.1 Roofers to be ARCHITECTURAL ENVELOPES recommended Installers

### 1.8 NO SUBSTITUTIONS

- 1.8.1 Substitutions are not permitted to any specified ARCHITECTURAL ENVELOPES products, or associated components and products.

Performance

### 1.9 FIXINGS, WIND

- 1.9.1 Use the fixings appropriate for the design loads of this site as required by NZS 3604 and AS/NZS 1170.2. Allow for specific loadings at corners and the periphery of the roof, where localised pressure factors apply. Contact Architectural Envelopes Ltd. for advice.

### 1.10 SPREAD OF FIRE

- 1.10.1 To NZBC C/AS1-AS7, 5.8.2 a) Exterior Surface Finishes.

### 1.11 DRINKING WATER

- 1.11.1 Roofing for collecting potable water to NZBC G12/AS1.

### 1.12 CO-ORDINATE

- 1.12.1 Co-ordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access and completion of the roof. Ensure that all necessary members are positioned so that flashings can be fastened at both edges through the roof profile or cladding to the primary structure.

### 1.13 PERFORMANCE

- 1.13.1 Install roofing material and associated flashings and accessories to form a weather tight and durable system.

## 2. PRODUCTS / MATERIALS

### 2.1 PLYWOOD SUBSTRATE

- 2.1.1 15mm minimum plywood sarking (such as Ecoply Roofing Grade F11, DD finish ply) and to NZMRM CoP 11.4.2, Substrate. Refer to ARCHITECTURAL ENVELOPES Product Technical Statement and Ecoply: Structural Plywood Properties & Application Manual for technical information. Or 15mm Multiboard eXBound MGO substrate. See Architectural Envelopes for details.

### 2.2 ROOF UNDERLAY

- 2.2.1 Refer to 4161 UNDERLAYS, FOIL AND DPC. Breather, absorbent type underlays to NZS 2295.

### 2.3 ALUMINIUM/ZINC ALLOY COATED STEEL, UNPAINTED

- 2.3.1 Formability G300 steel sheet coated to AS 1397. Coating class: AZ 150.

### 2.4 PRE-FINISHED ALUMINIUM/ZINC ALLOY COATED STEEL

- 2.4.1 Formability G300 steel sheet coated to AS/NZS 2728. Coating class: AZ 150

### 2.5 PRE-FINISHED HOT-DIPPED ALUMINIUM/ZINC/MAGNESIUM COATED STEEL

- 2.5.1 Formability steel sheet, G300 for roll forming.

### 2.6 ALUMINIUM 5005 or 5052

- 2.6.1 Alloy H34 or H36 temper to suit application.

### 2.7 STAINLESS STEEL

- 2.7.1 Strip grade 445M2.

### 2.8 COPPER

- 2.8.1 Half-hardened commercial finished.

### 2.9 ZINC

- 2.9.1 Natural or pre-weathered zinc. Refer to SELECTIONS for surface finish.

### 2.10 ARCHITECTURAL ENVELOPES PROFILES

- 2.10.1 Refer to SELECTIONS for profile and pan widths.

### 2.11 FLASHINGS GENERALLY

- 2.11.1 To E2/AS1, 4.0, Flashings. Formable grade 0.55mm BMT for galvanized, aluminium/zinc-coated and pre-painted steel, and 0.90mm for aluminium (or 0.7mm for small aluminium flashings) to the same standards as the profiled sheets, notched where across profile. Where flashings are required but are not detailed, design to ARCHITECTURAL ENVELOPES's approved recommendations and designs.

## Components

### 2.12 FASTENERS GENERALLY

- 2.12.1 Minimum Class 4 and durability not less than the roofing material being fixed. Fastener material to be compatible with the material being fastened.

### 2.13 FIXING CLIPS

- 2.13.1 Galvanized steel (thermoplastic powder coated or stainless steel for aluminium, copper or zinc) to suit the material and profile of the rigid sheet and location as required by ARCHITECTURAL ENVELOPES. Fix to steel with 25mm x 2.5mm anular groove stainless steel nails.

## 2.14 FIXING SCREWS

- 2.14.1 Appropriate nails to the roofing material, clip type and the supporting structure, as required by the roofing manufacturer and with a minimum Category 5 durability and not less than the material being fixed.

## 2.15 RIVETS

- 2.15.1 Sealed aluminium, minimum diameter 4mm, for use with zinc coated, zinc/aluminium coated or aluminium roofing.

## Accessories

### 2.16 SEALANT

- 2.16.1 Neutral curing silicone or MS polymer sealant as required by ARCHITECTURAL ENVELOPES and used as directed. For VM Zinc use only Sikaflex 11FC.

## 3. EXECUTION

Conditions

### 3.1 INSPECTION

- 3.1.1 Inspect the roof framing and supporting structure to ensure that it is complete and fully braced ready for roofing and free from any misalignments or protrusions that could adversely affect the roofing.

### 3.2 FRAMING TIMBER MOISTURE

- 3.2.1 For transverse flashings the framing moisture content to be a maximum of 18%. Transverse flashings can be temporarily tacked in place and final fixing done when moisture content is acceptable.

### 3.3 STORAGE

- 3.3.1 Take delivery of and accept packs of roofing undamaged on delivery. Reject all damaged material. Stack roofing and accessories on clean, level areas of the site and protect from mechanical damage, wind damage and contamination. Loosely cover dry sheeting, with any wet sheeting fillet or cross stack to allow air to circulate. Remove strippable protective film, if applied, prior to prolonged exposure to sunlight.

### 3.4 HANDLING

- 3.4.1 Avoid distortion and contact with damaging substances, including cement. Do not drag sheets across each other and other materials. Protect edges and surface finishes from damage. Use soft, flat soled shoes when fixing and for all other work on the roof.

### 3.5 SEPARATION

- 3.5.1 Place isolators between dissimilar metals and separate roofing from treated timber and cement based materials. Do not use unpainted lead sheet or copper in contact with or allow water run-off onto galvanized or Zinalume® materials.

### 3.6 PLYWOOD SUBSTRATE

- 3.6.1 Install plywood substrate in accordance with CHH's: "Ecoply: Structural Plywood Properties & Application Manual."

## Application

### 3.7 SET-OUT

- 3.7.1 Carefully set out the planned layout before fixing commences, to ensure true lines and the correct relationship to module, grid and roof features. Check during fixing to eliminate creep or spread.

### 3.8 END LAPS

- 3.8.1 Install in continuous lengths without end laps. Where end laps are necessary, install in accordance with the relevant ARCHITECTURAL ENVELOPES Roofing design details.

### 3.9 LAY ROOF UNDERLAY

- 3.9.1 Fit and lap roofing underlay where specified over the plywood substrate. Lay underlay horizontally or vertically with a 150mm side lap, over sailing the spouting and/or gutters by 10mm.

### 3.10 AVOID DAMAGE

- 3.10.1 Take care to avoid damaging pre-finished roofing both during fixing. Wear only soft-soled shoes on the finished surface.

### 3.11 MARKING AND CUTTING PROFILED METAL ROOFING

- 3.11.1 Use ink pen, chalk line or coloured pencil for marking roof sheets prior to cutting. Do not use black lead pencil for marking aluminium/zinc- based products. Cut by shear only, using nibblers or hand snips. Remove all cutting and drilling debris from the roof as soon as possible, ensuring that it does not contaminate gutters or lower surfaces.

### 3.12 INSTALLING PROFILED METAL ROOFING

- 3.12.1 Install and fix in accordance with NZ Steel's Installers Guide, NZMRM CoP and to ARCHITECTURAL ENVELOPES current product literature. Use only screws as required by the roofing manufacturer. Fixings and accessories to be colour matched before installation.
- 3.12.2 Fix sheets in place into 15mm plywood substrate (such as Ecoply Roofing Grade F11, DD finish ply), with breather type roof underlay, using ARCHITECTURAL ENVELOPES clips secured with 2 - 8g 25mm x 2.5mm annular groove stainless steel nails, (clips and screws to be of compatible material to that of roofing). Clips to be fastened to ply at typically 330mm centres using a combination of ARCHITECTURAL ENVELOPES fixed and sliding clips for Single Lock profiles. Layout of fixed and sliding clips is dependent on roof design. Consult ARCHITECTURAL ENVELOPES for recommended fixing centres and layout. Make provision for due allowance for dynamic local wind pressures on building and thermal movement in sheet.
- 3.12.4 Plywood substrate to be installed in accordance with Ecoply: Structural Plywood Properties & Application Manual.

### 3.13 FIXINGS

- 3.13.1 Refer to the roofing manufacturer's literature for fixing details, taking care in the higher wind uplift areas at ridges, edges and verges.

### 3.14 VALLEYS

- 3.14.1 Form valleys as detailed and required by ARCHITECTURAL ENVELOPES, ensuring the valleys provide a weathertight and neat appearance.

### 3.15 INSTALL FLASHINGS AND CAPPINGS

- 3.15.1 Flash neatly to all penetrations and openings through cladding using secret clip systems avoiding visible fastenings. Flashing design and installation to ARCHITECTURAL ENVELOPES Recommended Solutions.

### 3.16 FLASHING PENETRATIONS

- 3.16.1 Flash all penetrations through the roof. Fit pipe flashings with a proprietary collar flashing through pan of ARCHITECTURAL ENVELOPES profile only. Other penetrations flash as detailed and to provide a weathertight installation. Ensure that flashings are set to avoid any ponding of water.

### 3.17 USE OF SEALANTS

- 3.17.1 Select and use sealants only as recommended by the roofing manufacturer. Apply sealant in two narrow beads transversely across flashing intersections, close to the two edges. Avoid exposing sealant on outside surfaces.

### 3.18 REMOVE FILINGS

- 3.18.1 Remove metal filings from roofing surfaces at least daily.

### 3.19 PENETRATIONS AND JUNCTIONS

- 3.19.1 Check that adjoining walls and parapets are prepared ready for the installation of the roofing. Confirm that openings have been prepared ready for the installation of skylights and other penetrations through the roof. Required work includes the following: - underlay turned up at wall and parapet lines - underlay finished and dressed off to all openings, ready for the installation of skylights and other penetrations - roofing installation neatly finished to all sides of openings and to all wall and parapet junctions - installation of flashings (those required to be installed prior to installation of penetrating elements and/or wall linings).

## Completion

### 3.20 REPLACE

- 3.20.1 Replace damaged or marked elements. Do not attempt to repair coatings by applying colour match paint to pre-finished surfaces.

### 3.21 LEAVE

- 3.21.1 Leave this work complete with all necessary flashings, under cloaks, valleys, ridges and hips all properly installed as the work proceeds so the finished roof is completely weathertight.

### 3.22 REMOVE

- 3.22.1 Remove trade rubbish and unused materials from the roof and surrounds daily during the work. Sweep down at the end of each day, and clean out spouting, gutters and rainwater pipes on completion of the roof. Remove debris, unused materials and elements from the site. Remove any protective strippable film as soon as possible. Do not leave product exposed with strippable film for more than one week.

## 4. SELECTIONS

For further details on selections go to [www.architecturalenvelopes.co.nz](http://www.architecturalenvelopes.co.nz), Substitutions, are not permitted to the following, unless stated otherwise.

## Coating System

### 4.1 COATING SYSTEM - EXPOSURE ZONE B-C (CAT 1-3)

- 4.1.1 Project Exposure Zone B-C to NZS 3604, C 1-3 to ISO 9223.

Profile/location: ~

Base material: ~

Coating system: ~

Coating colour: ~

#### 4.2 COATING SYSTEM - EXPOSURE ZONE D (CAT 4)

4.2.1 Project Exposure Zone D to NZS 3604, C 4 to ISO 9223.

Profile/location: ~

Base material: ~

Coating system: ~

Coating colour: ~

#### 4.3 COATING SYSTEM - EXPOSURE ZONE E (CAT 5)

4.3.1 Project Exposure Zone E to NZBC E2/AS1, C 5 (C5I & C5M) to ISO 9223.

Profile/location: ~

Base material: ~

Coating system: ~

Coating colour: ~

## Roofing

#### 4.6 ARCHITECTURAL ENVELOPES – SLSS SINGLE LOCK STANDING SEAM

4.6.1 BMT/material: 0.55mm

Pan width: 300mm to 515mm

Clips: AE Fixed and Sliding Clips

Substrate: Plywood

Clip Fixing:

## Accessories

#### 4.7 FLASHINGS - GENERALLY

4.7.1 BMT/material:

Coating system: To match roofing

Coating colour: To match roofing

#### 4.8 DEKTITE PIPE FLASHINGS

4.8.1 Brand/Type: Dektite