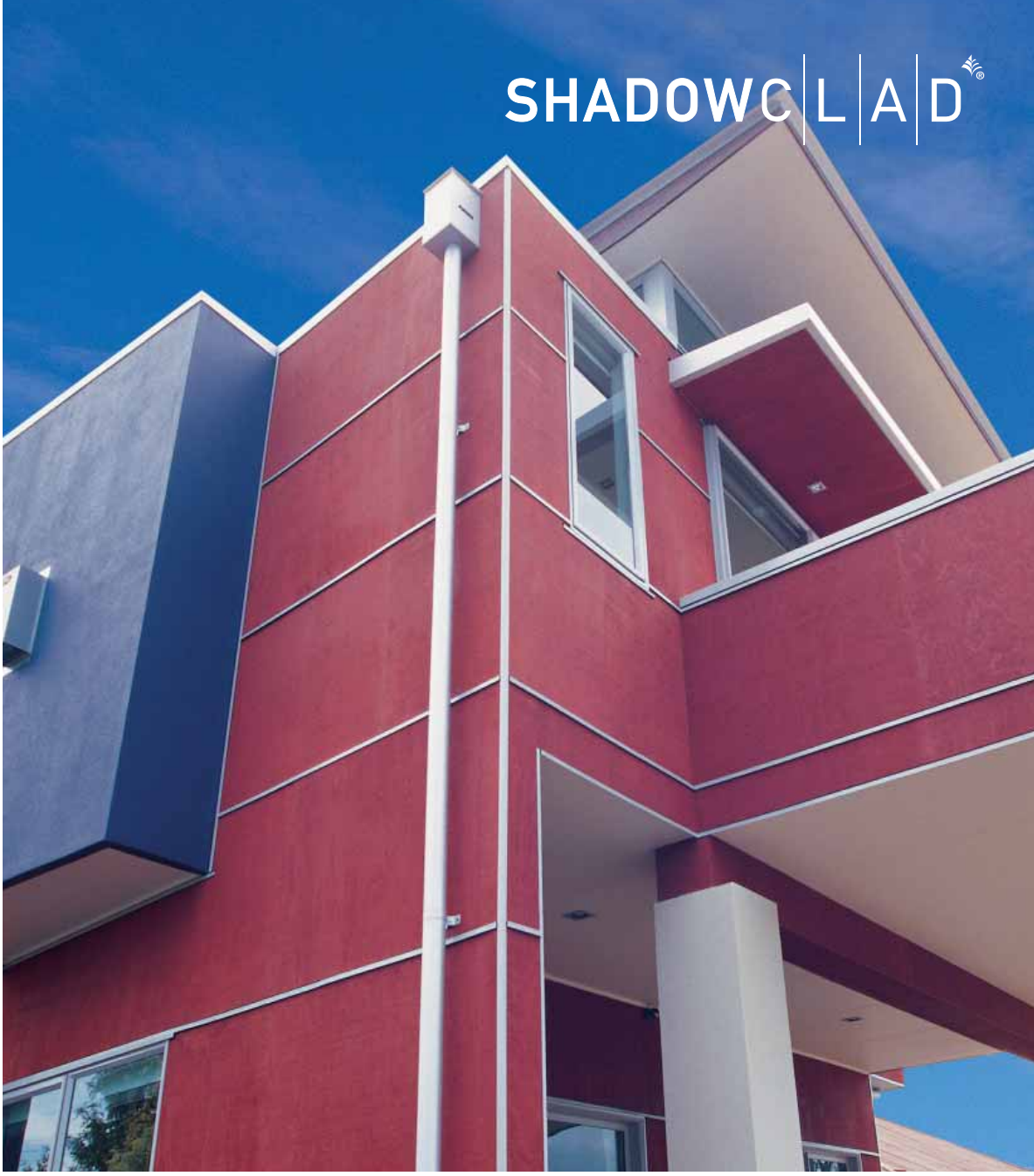
SHADOWCLAD®



SHADOWCLADFLASHINGS.

August 2005

CONTENTS

1.0 APPLICATION & SCOPE

1.1 Application

Shadowclad® aluminium flashings have been designed specifically for use with Shadowclad®. Some of the flashings can also be used with other cladding materials subject to confirming material compatibility and fitness for purpose.

Flashings should be specified based on their

- profile design to ensure weathertightness to meet the requirements of the New Zealand Building Code E2 – External Moisture
- durability to meet the requirements of the New Zealand Building Code B2 – Durability
- aesthetics to compliment the cladding material for a quality look and feel
- consideration of surrounding materials to ensure compatibility
- the environment where the building is located

Intended applications for each flashing are shown on pages 3 to 5.

1.2 Product identification

Shadowclad® flashings are extruded from 6060-T5 alloy and have a minimum gauge of 1.4mm. The range includes internal and external angles, horizontal and inter-storey 'Z' flashings and a cavity base closure to prevent vermin from gaining entry to the cavity behind the cladding. All horizontally installed flashings come in 3.6m lengths and vertically installed angles are available in 2.44m, 2.745m and 3.05m lengths to match Shadowclad® sheet length options.

Table 1 - Flashing descriptions

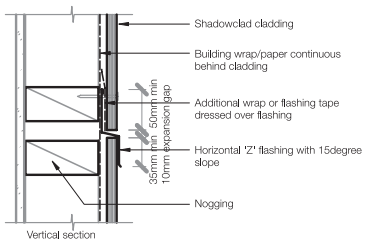
Description	Length	Finish	Barcode
Internal 90˚ angle	2.44m	Natural anodised*	9418265000016
Internal 90˚ angle	2.745m	Natural anodised*	9418265000023
Internal 90˚ angle	3.05m	Natural anodised*	9418265000030
Internal 'W' 90˚ angle	2.44m	Natural anodised*	9418265000047
Internal 'W' 90˚ angle	2.745m	Natural anodised*	9418265000054
Internal 'W' 90˚ angle	3.05m	Natural anodised*	9418265000061
External 90˚ box angle	2.44m	Mill finish**	9418265000078
External 90˚ box angle	2.745m	Mill finish**	9418265000085
External 90˚ box angle	3.05m	Mill finish**	9418265000092
External 90˚ box angle	2.44m	Natural anodised***	9418265000108
External 90˚ box angle	2.745m	Natural anodised***	9418265000115
External 90˚ box angle	3.05m	Natural anodised***	9418265000122
Horizontal 'Z' flashing	3.6m	Mill finish**	9418265000139
Horizontal 'Z' flashing	3.6m	Natural anodised***	9418265000146
Inter-storey junction 'Z' flashing	3.6m	Mill finish**	9418265000153
Inter-storey junction 'Z' flashing	3.6m	Natural anodised***	9418265000160
Cavity base closure	3.6m	Natural anodised*	9418265000009

* Anodised protective flash coat for non-exposed use behind cladding.
** Mill finish - to be pre-treated to AS3715 and powder coated in specified colour prior to installation.
*** Anodised for exposed applications.

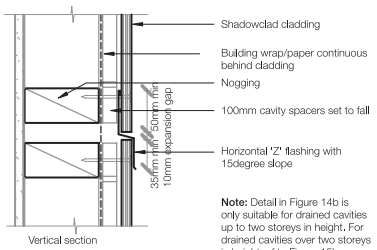
FLASHING DETAILS AND CROSS SECTIONS

Horizontal 'Z' flashing

Direct fix
Horizontal joint



Cavity
Horizontal joint



Note: Detail in Figure 14b is only suitable for drained cavities up to two storeys in height. For drained cavities over two storeys in height ref to Figure 15b

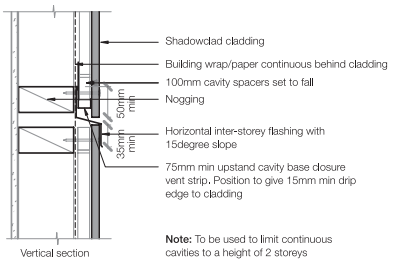
Shadowclad® flashing details shown and other suggested details are available in the Shadowclad® Specification & Installation manual and as downloadable DWG, DXF, MOD and PDF files from the TECHNICAL INFO section at www.shadowclad.co.nz.

FLASHING DETAILS AND CROSS SECTIONS

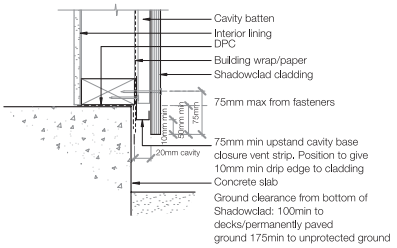
Inter-storey junction 'Z' flashing

Cavity base closure

Cavity
Mid Floor Level
(Horizontal joint: General inter-storey junction)

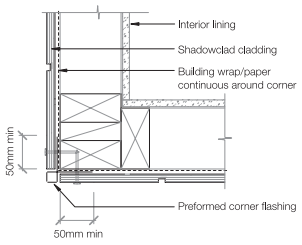


Cavity
Overhangs and ground clearance

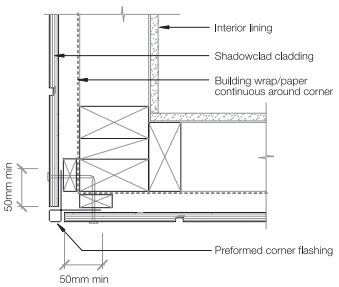


External 90˚ box angle

Direct fix
External corner with preformed flashing



Cavity
External corner with preformed flashing

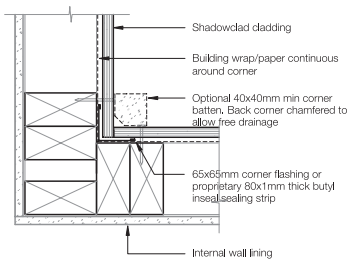


Shadowclad® flashing details shown and other suggested details are available in the Shadowclad® Specification & Installation manual and as downloadable DWG, DXF, MOD and PDF files from the TECHNICAL INFO section at .

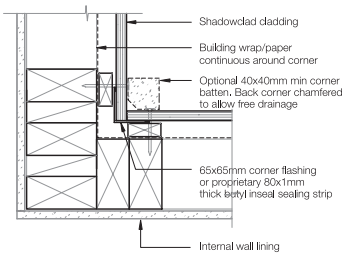
FLASHING DETAILS AND CROSS SECTIONS

Internal 90˚ angle

Direct fix
Internal corner

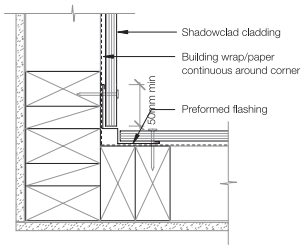


Cavity
Internal

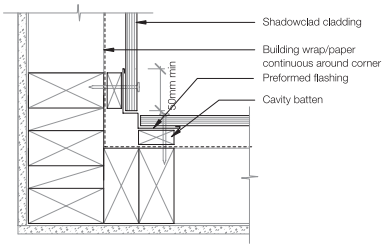


Internal 'W' 90˚ angle

Direct fix
Internal corner with preformed flashing



Cavity
Internal corner with preformed flashing



Shadowclad® flashing details shown and other suggested details are available in the Shadowclad® Specification & Installation manual and as downloadable DWG, DXF, MOD and PDF files from the TECHNICAL INFO section at www.shadowclad.co.nz.

1.3 Finishes

Concealed flashings (i.e. both internal angles and the cavity base closure) have an anodised coating factory applied to provide additional protection in non-exposed applications.

The external 90° box angle and horizontal and inter-storey 'Z' flashings are available with a factory applied anodised coating, ready for use in exposed applications or mill finish ready for powdercoating to the desired colour prior to installation. Powdercoaters must chromate pre-treat mill finish flashings to AS3715 before powdercoating to the desired colour. Refer to www.wanz.org.nz or the Yellow Pages for local powdercoaters.

1.4 Code Compliance

Shadowclad® flashing dimensions meet or exceed those specified in Acceptable Solution 'E2/AS1 – External Moisture' (Third Edition). Those that provide additional peace of mind by exceeding those specifications include:

i/ 50mm upstands on horizontal 'Z' flashing and inter-storey junction 'Z' flashing

ii/ 65 x 65mm internal 90° angle to enable at least 50mm back cover to each Shadowclad® sheet, irrespective of which way the sheets are lapped into the corner.

Shadowclad® aluminium flashings have been BRANZ weathertightness tested to the requirements of E2/VM1 of the NZBC, with no leakage detected from the details forming part of the Class 1 test. Contact CHH Woodproducts for a copy of BRANZ report DC0942 (Issue date 11/02/05).

The durability requirements for flashings under the NZ Building Code (as set out in paragraph 4.2.1 of Acceptable Solution 'E2/AS1 - External Moisture' (Third Edition) are:

A) 50 years, where flashings are:

i/ completely hidden behind claddings such as masonry veneer, or

ii/ not accessible,

B) 15 years, where flashings are:

i/ exposed, or

ii/ accessible.

Table 20 in Acceptable Solution 'E2/AS1 – External Moisture' lists aluminium as a suitable flashing material to achieve 50 year durability in all NZS3604 exposure zones, including sea spray zones, whether concealed or exposed to the weather.

NOTE: Shadowclad® flashings are manufactured from 6060-T5 alloy with a minimum thickness of 1.4mm. 6060-T5 alloy is an extrusion grade alloy with good corrosion resistance, typically used for architectural extrusions such as glazing bars and window frames. In comparison, paragraph 4.3.2 of Acceptable Solution E2/AS1 – External Moisture sets out the requirements for uncoated aluminium flashings as having a minimum thickness of 0.7mm and grade 5000 series in accordance with AS/NZS1734.

IMPORTANT: Before specifying flashings made from other materials, it is important to ensure the required durability level will be achieved.

2.0 DESIGN

2.1 Responsibility

The Specifier for the project must ensure that the details in the specification are appropriate for the intended application and that additional detailing is provided for specific design or any areas that fall outside the scope and specifications of this literature.

2.2 Other flashings

Window joinery flashings should be sourced from the joinery fabricator in accordance with Acceptable Solution 'E2/AS1 – External Moisture' or an Alternative Solution such as the Window Association of New Zealand Window Installation System available at www.wanz.org.nz.

2.3 Surrounding materials

A number of materials commonly encountered in building construction must be considered for their corrosion influence on aluminium. These fall into three main categories, iron and steel, non-ferrous metals and non-metals.

A) Iron & Steel
In contact with structural steel, aluminium suffers attack when an electrolyte such as sea water or condensed moisture in an industrial area is present. Several treatments can be applied to the steel such as metal spraying, galvanising, zinc or cadmium plating or painting with zinc rich paints.

B) Non-ferrous metals
Contact with copper and its alloys must be avoided and chromium or cadmium plating is a satisfactory means to prevent this. Timber or plywood treated with copper based preservatives, such as CCA, must be isolated from aluminium. Note: Shadowclad® is treated with LOSP.

C) Non-metals
Aluminium alloys used for building purposes have good corrosion resistance to concretes, mortars, plasters and fibre cement products. However, when freshly mixed some of these materials release traces of alkaline products which may be sufficient to stain aluminium. Splashing of these products onto aluminium, while not sufficiently corrosive to affect strength, does produce an unsightly, stained appearance. Contact with stone or brickwork, particularly when more open-grained and wet, can have a similar effect. Some separation by spacers at the joints should be effected.

Damp or unseasoned timber can cause corrosion and must therefore be primed with zinc chromate undercoat and sealed with a suitable protective paint. Plastics and rubber are virtually without action on aluminium in most conditions of service. Adhesives used to bond aluminium should not contain in excess of 0.1% chlorides.

2.4 Detail drawings

Shadowclad® flashing details shown on pages 3 to 5 and other suggested details are available in the Shadowclad® Specification & Installation manual and as downloadable DWG, DXF, MOD and PDF files from the TECHNICAL INFO section at www.shadowclad.co.nz.

3.0 INSTALLATION

As per Paragraph 4.5 of Acceptable Solution ‘E2/AS1 – External Moisture’ flashings should have expansion joints where necessary to provide adequate allowance for thermal expansion. Note, a length of aluminium flashing 6 metres long will expand over 4mm when the temperature rises 30˚C. Specifically, Acceptable Solution ‘E2/AS1 – External Moisture’ requires

- expansion joints to be provided for joined aluminium flashings with a combined length exceeding 8 metres.
- where both ends of a flashing are constrained, allowance should be made for expansion.

Fix cavity base closures to bottom plates through the upstand with 40 x 2.5mm hot dipped galvanised flat head nails at 300mm centres. The cavity base closure should be positioned to allow a minimum drip edge to the wall cladding of 10mm at the base of walls and 15mm above window head flashings. Refer to details on page 4.

Internal and external angles and ‘Z’ flashings can be nominally fixed with hot dipped galvanised flat head nails and then permanently fixed by the Shadowclad® fasteners penetrating the flashing wings/upstands. Refer to details on pages 3 to 5.

‘Z’ flashings may be lapped or butt-joined using UV-resistant flexible flashing tape and neutral cure silicone sealant to create a weathertight joint. Flexible flashing tapes should also be used to create weathertight joints where horizontal and vertical flashings meet. In accordance with Acceptable Solution ‘E2/AS1 – External Moisture’ flexible flashing tape should comply with Parts 3.2 and 4 of ICBO Acceptance Criteria AC148, and shall be compatible with adjacent building wrap or roof underlay. Where flexible flashing tapes will be exposed (e.g. when used to seal behind butt-joined horizontal flashings), ensure the flashing tape is UV stable (NB many of the aluminium coated flashing tapes are suitable in these situations).

4.0 MAINTENANCE

Aluminium has a natural beauty and lustre. For this reason and because aluminium is so well proven in service, it is now by far the most common material for exterior work such as windows, doors, curtain walls and shop fronts as well as flashings.

Standard maintenance of exposed anodised or powdercoated aluminium flashings should include periodic cleaning on a similar basis to which the glass in windows is cleaned, with six months being the longest cleaning interval. In industrial or marine locations particular attention should be paid to regular maintenance due to the harsher atmosphere.

- Clean with a dilute solution of mild liquid detergent. Avoid excessively hot solutions.
- Use a soft bristle brush. Do not use abrasive tools or cleaners on the coating. After cleaning, rinse thoroughly with fresh water.
- Do not use strong solvent type cleaners. Where the use of solvent is required, such as cleaning paint spills, use nothing other than Methylated Spirit. Ensure contact time is as short as possible, and rinse the solvent cleaner thoroughly from the surface with copious amounts of drinking quality water.

5.0 HEALTH & SAFETY

Shadowclad® should be installed and used as per the Material Safety Data Sheet (MSDS), downloadable from the TECHNICAL INFO page at www.shadowclad.co.nz or available on request from CHH Woodproducts.

Always wear safety glasses when cutting aluminium flashings.

6.0 STORAGE & HANDLING

Should a shipment of aluminium flashings arrive in a wet condition, they should be immediately thoroughly dried before storing. Drying may be by evaporation in air or by means of dry air currents. Very wet metal should first be wiped down.

When cold metal is brought into a warm environment it should be left undisturbed, in its pack until the aluminium has been brought up to room temperature. This may take 36 to 48 hours.

When storing aluminium avoid contact with other metals which may cause scratches or other marks. The use of shelving or racks faced with dried wood is recommended. Aluminium should also be kept away from caustics, nitrates, phosphates and some acids. When large quantities of metal are used continuously the oldest stock should be used first.

7.0 LIMITATIONS

The information contained in this document is current as at August 2005 and is based on data available to Carter Holt Harvey at the time of going to print.

This publication replaces all previous Carter Holt Harvey literature relating to Shadowclad® flashings and should be read in conjunction with the current 'Shadowclad® UNLIMITED POSSIBILITIES' brochure, Shadowclad® Specification & Installation' manual and the Material Safety Data Sheet. Carter Holt Harvey reserves the right to change the information contained in this document without prior notice. It is important that you call 0800 326 759 to confirm that you have the most up to date information available.

Carter Holt Harvey has used its reasonable endeavours to ensure the accuracy and reliability of the information contained in this document and, to the extent permitted by law, will not be liable for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information.

8.0 REFERENCES

- Shadowclad® UNLIMITED POSSIBILITIES brochure
- Shadowclad® Specification & Installation manual
- New Zealand Building Code
- NZS3604:1999 “Timber Framed Buildings”
- Acceptable Solution ‘E2/AS1 – External Moisture’
- Acceptable Solution ‘B2/AS1 – Durability’
- Window Association of New Zealand (WANZ)
- Shadowclad® Material Safety Data Sheet
- BRANZ Weathertightness Test to E2/VM1 (DC0942)

SHADOWCLAD®

Shadowclad® aluminium flashings provide significant benefits for the designer, the builder and the client when correctly installed:

- Superior aesthetics
- BRANZ weathertightness tested
- Durable
- Available anodised or mill finish for powdercoating
- Vertical flashings available in all three Shadowclad® sheet lengths
- Available from your building merchant

CBI Reference 4223

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