



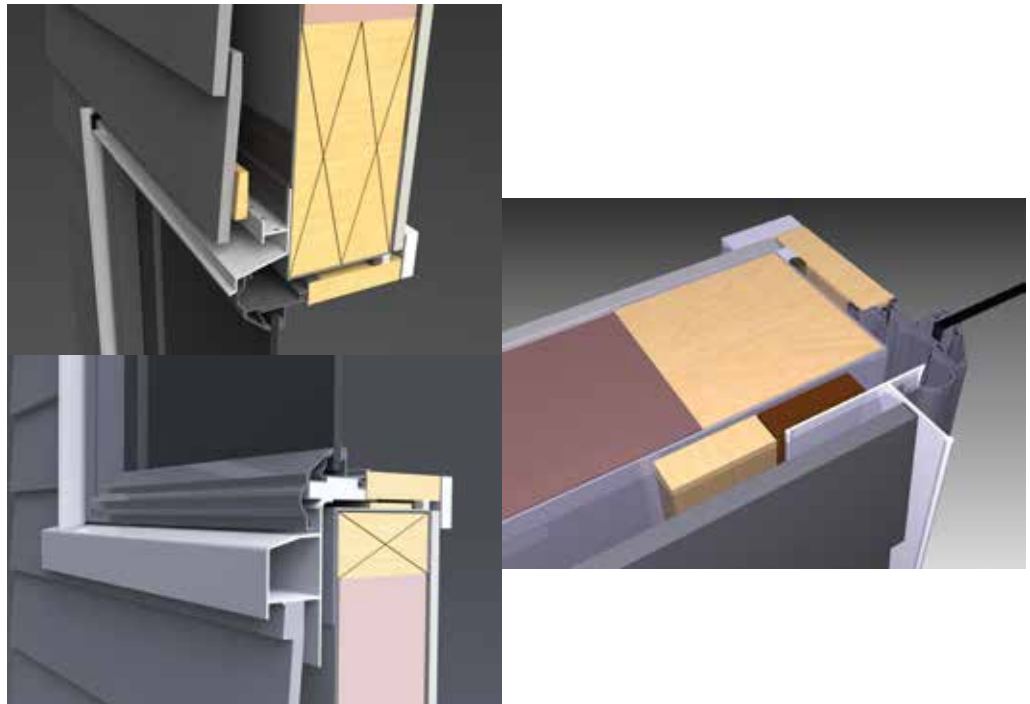
BRANZ Appraised
Appraisal No. 573 [2013]

FLASHMAN WINDOW AND DOOR FLASHING SYSTEM

Appraisal No. 573 [2013]

This Appraisal replaces BRANZ
Appraisal No. 573 [2007].

Amended 05 February 2016.



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 The Flashman Window and Door Flashing System is a complete window and door flashing system for use in cavity construction. The system consists of an extruded aluminium cavity closure head flashing, jamb and sill flashings and flashing accessories.
- 1.2 The Flashman sill flashing is also designed for use as a sill support bar for window joinery in cavity construction as an alternative to a WANZ support bar.

Scope

- 2.1 The Flashman Window and Door Flashing System has been appraised for use as a window and door joinery flashing system for use with wall cladding systems on buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
 - with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
 - with cavity-based weatherboard, fibre cement sheet, External Insulation and Finishing Systems (EIFS), stucco and plywood wall cladding systems complying with NZBC Acceptable Solution E2/AS1 or a valid BRANZ Appraisal that specifies a nominal 20 mm (minimum 18 mm) drained and vented cavity; and,
 - with cavity-based aerated concrete panel wall cladding systems covered by a valid BRANZ Appraisal that specifies a nominal 20 mm (minimum 18 mm) drained and vented cavity; and,
 - with brick veneer in accordance with NZBC Acceptable Solution E2/AS1; and,
 - situated in NZS 3604 Wind Zones up to, and including Extra High.
- 2.2 The Flashman Window and Door Flashing System has also been appraised for weathertightness when used on buildings subject to specific design up to an ultimate limit state (ULS) wind pressure of 2.5 kPa with cavity-based weatherboard, fibre cement sheet, EIFS, stucco, plywood and aerated concrete panel wall cladding systems that specify a nominal 20 mm (minimum 18 mm) drained and vented cavity. Weathertightness and structural design and detailing of these cladding installations [excluding the Flashman Window and Door Flashing System] is the responsibility of the designer and is outside the scope of this Appraisal.
- 2.3 The Flashman Window and Door Flashing System has been appraised for use as a window and door sill support system for windows within the following scope:
 - aluminium window and door joinery meeting the requirements of NZS 4211; and,
 - with a maximum insulated glazing unit (IGU) height of 2.4 m; and,
 - with an IGU consisting of two maximum 6 mm thick panes of glass.

- 2.4 The Flashman Window and Door Flashing System has been appraised for use with aluminium window and door joinery that is installed with vertical jambs and horizontal heads and sills. *[Note: The Appraisal of the Flashman Window and Door Flashing System relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone or wind pressure.]*
- 2.5 Installation of components and accessories supplied by Flashclad Limited must be carried out only by Flashclad Limited Regional Distributors.

Building Regulations

New Zealand Building Code [NZBC]

- 3.1 **In the opinion of BRANZ, the Flashman Window and Door Flashing System if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:**
- Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. The Flashman Window and Door Flashing System meets the requirements for loads arising from imposed gravity loads and creep [i.e. B1.3.3 [b] and [q]]. See Paragraphs 8.1 – 8.3.
- Clause B2 DURABILITY:** Performance B2.3.1 [b], 15 years and B2.3.2. The Flashman Window and Door Flashing System meets this requirement. See Paragraphs 9.1 and 9.2.
- Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. The Flashman Window and Door Flashing System meets this requirement. See Paragraphs 12.1 and 12.2.
- Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. The Flashman Window and Door Flashing System meets this requirement and will not present a health hazard to people.
- 3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

- 4.1 System components and accessories for the Flashman Window and Door Flashing System, which are supplied by Flashclad Limited are:

Flashman Window and Door Flashing System

- The Flashman Window and Door Flashing System consists of extruded aluminium head, jamb and sill flashing sections complete with machined aluminium end caps for the head and sill extrusions. The head, jamb and sill sections and end caps are manufactured from 6063 T5 aluminium alloy. The flashing sections are supplied to site cut to length and are powder coated.
- The Flashman head flashing incorporates a cavity vent strip which is punched with 5 mm diameter holes complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3.

Accessories

- **Mitre soaker** - folded from 0.55 mm Grade 5005 aluminium. The mitre soakers are supplied 140 mm long and are available in left and right hand orientations.
 - **Flashman back plate** - cut from 0.55 mm Grade 5005 aluminium.
- 4.2 Accessories used with the Flashman Window and Door Flashing System, which are supplied by the Regional Distributors are:
- **Flashman Window Sill packer [brick veneer cladding]** - 45 mm wide by 27 mm thick [for a 40 mm veneer cavity] or 45 mm wide by 37 mm thick [for a 50 mm veneer cavity] H3.1 treated timber.
 - **Flashman Window Sill packer [wall claddings with a nominal 18 mm cavity]** - 45 mm wide by 9 mm thick H3.1 treated plywood.
 - **Flashman Door Sill packer [concrete foundation]** - 45 mm wide by 18 mm thick H3.2 treated plywood.
 - **Cavity packer barrier strip** - 50 mm wide strip of polyethylene tape to separate the aluminium components and accessories from timber packers treated with copper based treatments in NZS 3604 defined Exposure Zone D.

- **Flashman Window Sill fixings [brick veneer cladding]** - 6 mm x 100 mm long [for 27 mm thick packers] or 6 mm x 110 mm long [for 37 mm thick packers] hot-dip galvanised coach screws.
 - **Flashman Window Sill fixings [wall claddings with a nominal 18 mm cavity]** - 14 gauge Hex S.T.H.C. hot-dip galvanised screws with 10 threads per 25 mm. Screw length to allow a minimum frame penetration of 65 mm.
 - **Flashman Door Sill fixings [concrete foundations]** - 75 mm x 6 mm hot-dip galvanised AnkaScrew™.
- 4.3 Accessories used with the Flashman Window and Door Flashing System, which are supplied by the building contractor are:
- **Flexible sill and jamb flashing tape** - flexible flashing tapes complying with NZBC Acceptable Solution E2/AS1, Paragraph 4.3.11, or flexible flashing tapes covered by a valid BRANZ Appraisal for use around window and door joinery openings.
 - **Window and door trim cavity air seal** - air seals complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.6, or self-expanding, moisture cure polyurethane foam air seals covered by a valid BRANZ Appraisal for use around window and door penetrations.
 - **Cavity battens** - nominal 50 mm wide by 25 mm thick [minimum finished size of 45 mm wide by 18 mm thick] timber treated to Hazard Class H3.1, or cavity battens covered by a valid BRANZ Appraisal for use as a cavity batten system behind wall claddings.
 - **Cavity batten fixings** - 40 x 2.5 mm flat head hot-dipped galvanised nails, or minimum 50 x 2.87 mm hot-dip galvanised gun nails.
 - **Flexible sealant** - sealant complying with NZBC Acceptable Solution E2/AS1, or sealant covered by a valid BRANZ Appraisal.

Handling and Storage

- 5.1 Handling and storage of all materials supplied by Flashclad Limited or the Regional Distributor, whether on site or off site, is under the control of the Regional Distributor. Flashman Window and Door Flashing System components must be stacked flat, off the ground and supported on a level platform. They must be kept dry either by storing under cover or by providing waterproof covers to the stack. Care must be taken to avoid damage to powder coated surfaces.
- 5.2 Handling and storage of all materials supplied by the building contractor, whether on or off site, are under the control of the building contractor. Materials must be handled and stored in accordance with the relevant manufacturer's instructions.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Flashman Window and Door Flashing System. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

Framing

Timber Framing

- 7.1 Cavity battens will be required at the side of the Flashman Jamb Flashing for the support and fixing of the selected cladding.

General

- 7.2 The Flashman Window and Door Flashing System can be used as an alternative to the head, jamb and sill flashing systems specified within NZBC Acceptable Solution E2/AS1, Paragraphs 9.3.10, 9.4.7, 9.5.4.2, 9.7.6 [b], 9.8.8.2 and 9.9.9.
- 7.3 Where a proprietary cladding manufacturer specifies a window and door flashing system as part of their system, permission must be obtained from the cladding manufacturer before the window and door flashing system is substituted with the Flashman Window and Door Flashing System.

- 7.4 Punchings in the cavity closure head flashing provide a minimum ventilation opening area of 1000 mm² per lineal metre of wall in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3 [b].
- 7.5 Where the Flashman Window and Door Flashing System is used with other cladding systems not covered by this Appraisal [refer to Paragraph 2.1], designers must detail the junction between the Flashman Window and Door Flashing System and the cladding to meet their own requirements and the performance requirements of the NZBC. Details not included within the Technical Literature have not been assessed and are outside the scope of this Appraisal

Structure

- 8.1 The Flashman Window and Door Flashing System is suitable for use as a sill support for window and door joinery that has a maximum IGU height of 2.4 m, where the IGU consists of two maximum 6 mm thick panes of glass. When using the Flashman sill, a WANZ support bar is not required.
- 8.2 The Flashman sill flashing must be fixed to the wall frame or floor structure at maximum 600 mm centres.
- 8.3 Where a rigid wall underlay is specified as part of the wall cladding system, the length of the selected sill flashing fixing must be increased by a minimum of the thickness of the rigid sheathing to maintain the support strength of the sill flashing.

Durability

Serviceable Life

- 9.1 The Flashman Window and Door Flashing System is expected to have a serviceable life ranging from 15 to 50 years provided the system is maintained in accordance with this Appraisal. Refer to Table 1.

Table 1: Expected Serviceable Life of the Flashman Window and Door Flashing System (as limited by expected fixing durability)

NZS 3604 Exposure Zone	Fixing Type	Expected Serviceable Life [years]
Zone B	AS 3566 Class 4 screws	25
	Grade 304 Stainless Steel screws	50
Zone C	AS 3566 Class 4 screws	20
	Grade 304 Stainless Steel screws	25-40
Zone D	AS 3566 Class 4 screws	N/A
	Grade 304 Stainless Steel screws	15

- 9.2 On exposure to the environment, the powder coating will gradually lose gloss unless the manufacturer's maintenance requirements are met, and coloured coatings will slowly fade. A faster reduction in appearance and a reduction in serviceable life can be anticipated in severe industrial, geothermal, and marine exposures.
- 9.3 Microclimatic conditions, including geothermal hot spots, industrial contamination and corrosive atmospheres, and contamination from agricultural chemicals or fertilisers can convert mildly corrosive atmosphere into aggressive environments. The use of the Flashman Window and Door Flashing System in areas subject to microclimatic conditions requires specific design in accordance with NZS 3604, Paragraph 4.2.4, and is outside the scope of this Appraisal.

Maintenance

- 10.1 Regular maintenance is required for Flashman Window and Door Flashing System installations to continue to meet the NZBC durability performance provisions and to maximise their serviceable life.

- 10.2 The Flashman Window and Door Flashing System must be washed down with water and a mild detergent every six months to remove grime, dirt and organic growth, to maximise the life and appearance of the flashings. Repainting of the powder coating may be considered necessary at some stage during the life of the cladding in order to restore the appearance and integrity of the system. Repainting must be carried out in accordance with the paint manufacturer's instructions for treatment of aged powder coated aluminium. Annual inspections must be made to ensure that all aspects of the cladding system, including flashings and any sealed joints remain in a weathertight condition. Any damaged areas, or areas showing signs of deterioration which would allow water ingress, must be repaired immediately. Sealant and the like must be repaired in accordance with the sealant manufacturer's instructions.

Prevention of Fire Occurring

- 11.1 The Flashman Window and Door Flashing System is considered non-combustible and need not be separated from flues and chimneys. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated from fireplaces, heating appliances, flues and chimneys in accordance with the requirements of NZBC Acceptable Solutions C/AS1 to C/AS6, Paragraph 7.5.9 for the protection of combustible materials.

External Moisture

- 12.1 The Flashman Window and Door Flashing System, when installed in accordance with this Appraisal and the Technical Literature prevents the penetration of moisture that could cause undue dampness or damage to building elements.
- 12.2 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for all joints, penetrations and junctions. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature. Weathertightness details that are developed by the designer are outside the scope of this Appraisal and are the responsibility of the designer for compliance with the NZBC.

Installation Information

Installation Skill Level Requirements

- 13.1 Installation and finishing of components and accessories supplied by Flashclad Limited and its licensed Regional Distributors must be completed by installers, trained by Flashclad Limited Regional Distributors.
- 13.2 Installation of the accessories supplied by the building contractor must be completed by Licensed Building Practitioners with the relevant Licence Class, in accordance with instructions given within the Flashman Window and Door Flashing System Technical Literature and this Appraisal.

System Installation

Building Underlay and Flexible Sill and Jamb Tape Installation

- 14.1 The selected building underlay and flexible sill and jamb tape system must be installed by the building contractor in accordance with the underlay and tape manufacturer's instructions prior to the installation of the cavity packers, cavity battens and the rest of the Flashman Window and Door Flashing System.

Cavity Battens and Sill Packers

- 14.2 Cavity battens must be installed by the building contractor over the building underlay to the wall framing. The battens must be fixed in place with 40 x 2.5 mm hot-dipped galvanised flat head nails or minimum 50 x 2.87 mm hot-dip galvanised gun nails at maximum 800 mm centres.
- 14.3 Flashman sill packers must be installed by the approved installer at maximum 600 mm centres at the sills of windows and doors in accordance with the instructions given within the Technical Literature to support the Flashman sill flashing. The selected sill fixing must be installed through the Flashman sill flashing and flashing packer into the wall or floor structure behind.

Aluminium Joinery Installation

14.4 Aluminium joinery must be installed by the building contractor in accordance with the Technical Literature, incorporating the mitre soakers at the window corners. The joinery must be installed plumb and level and a 7.5-10 mm nominal gap must be left between the joinery reveal and the wall framing so an airseal in accordance with Acceptable Solution E2/AS1, Paragraph 9.1.6 can be installed after the joinery has been secured in place.

Flashman Window and Door Flashing System Installation

14.5 The Flashman head, jamb and sill flashing components are fabricated to precisely fit each window and door and must be installed in accordance with the Technical Literature by Flashclad Limited Regional Distributors.

14.6 If the building is located within NZS 3604 defined Exposure Zone D and cavity packers and battens treated with copper based treatments have been used, the cavity packer barrier strip must be stapled to the face of timber cavity battens prior to the installation of the Flashman system to isolate the treated batten and the aluminium flashings.

Finishing

14.7 The Flashman Window and Door Flashing System is pre-finished and does not require painting at the completion of installation.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

15.1 The following testing on the Flashman Window and Door Flashing System has been completed by BRANZ:

- BRANZ expert opinion on NZBC E2 code compliance for the Flashman Window and Door Flashing System was based on testing and evaluation of all details within the scope and as stated within this Appraisal. The Flashman Window and Door Flashing System was tested to NZBC Verification Method E2/VM1 to verify the systems performance in NZS 3604 Wind Zones up to, and including Extra High and specific design wind pressures up to an ultimate limit state [ULS] of 2.5 kPa. The testing assessed the performance of the window head, jamb and sill details, for weatherboard, EIFS, fibre cement and stucco plaster systems. In addition to the weathertightness test, the details contained within the Technical Literature have been reviewed, and an opinion has been given by BRANZ technical experts that the system will meet the performance levels of NZBC Acceptable Solution E2/AS1 for drained cavity claddings.

Other Investigations

- 16.1 Structural and durability opinions have been provided by BRANZ technical experts.
- 16.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 16.3 The Technical Literature for the Flashman Window and Door Flashing System has been examined by BRANZ and found to be satisfactory.

Quality

- 17.1 The manufacture of the Flashman Window and Door Flashing System has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory. BRANZ also undertakes an ongoing review of product quality on an inwards goods basis.
- 17.2 The quality of materials, components and accessories supplied by Flashclad Limited is the responsibility of the Flashclad Limited Regional Distributor.
- 17.3 Quality on site is the responsibility of the Flashclad Limited Regional Distributor.

- 17.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and joinery, building underlays, flashing tapes, airseals, mitre soakers, cavity battens and cladding system in accordance with the instructions of the designer.
- 17.5 Building owners are responsible for the maintenance of the Flashman Window and Door Flashing System and cladding system in accordance with the instructions of Flashclad Limited and the designer.

Sources of Information

- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4211: 2008 Specification for performance of windows.
- Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 [Amendment 6, 14 February 2014].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, 05 February 2016.

This Appraisal has been amended to update the Appraisal Holder contact details and to update the Appraisal text.



In the opinion of BRANZ, the **Flashman Window and Door Flashing System** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Flashclad Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the Technical Literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. **Flashclad Limited**:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by **Flashclad Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Flashclad Limited** or any third party.

For BRANZ



Pieter Burghout

Chief Executive

Date of Issue:

24 April 2013