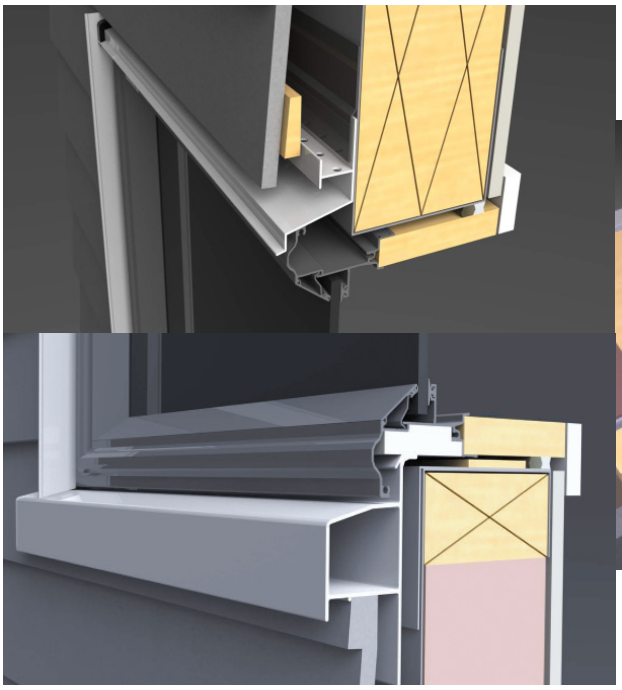
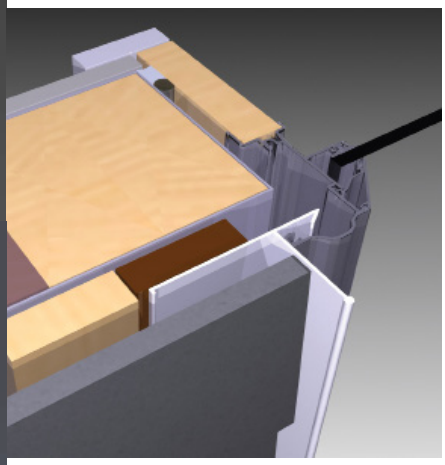
BRANZ Appraised
Appraisal No. 573 [2021]

FLASHMAN WINDOW AND DOOR FLASHING SYSTEM





Appraisal No. 573 (2021)

This Appraisal replaces BRANZ Appraisal No. 573 (2013)

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.

Scope

Timber Framing

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; or,
- 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 or CodeMark 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.

Steel Framing

2.2 The Flashman Window and Door Flashing System has also 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 NASH Building Envelope Solutions Paragraph 1.1 for steel-framed buildings; and,
- with a risk score of 0-20, calculated in accordance with NASH Building Envelope Solutions; and,
- with cavity-based weatherboard, fibre cement sheet, EIFS, stucco and plywood wall cladding systems complying with NASH Building Envelope Solutions; or a valid BRANZ Appraisal or CodeMark 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 NASH Building Envelope Solutions; and,
- situated in NASH Standard Part 2 Wind Zones up to, and including Extra High.

Specific Design

2.3 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.

General

2.4 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.

2.5 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.]*

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 9.1-9.3.

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.

Technical Specification

4.1 System components and accessories for the Flashman Window and Door Flashing System, which are supplied by Flashclad NZ 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 or NASH Building Envelope Solutions, Paragraph 9.1.9.3 [b].

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 g 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 NASH Building Envelope Solutions, Paragraph 4.2.10, 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 NASH Building Envelope Solutions 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-dip 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 NASH Building Envelope Solutions, or sealant covered by a valid BRANZ Appraisal.

Handling and Storage

5.1 Handling and storage of all materials supplied by Flashclad NZ 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-site 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, or NASH Building Envelope Solutions, Paragraph 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 1,000 mm^2 per lineal metre of wall in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3 (b) or NASH Building Envelope Solutions, Paragraph 9.1.9.3 (a).

7.5 Where the Flashman Window and Door Flashing System is used with other cladding systems not covered by this Appraisal (refer to Paragraphs 2.1 and 2.2), 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 Flashing, a joinery 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 wall underlay 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	Grade 304 Stainless Steel screws	50
Zone C	Grade 304 Stainless Steel screws	25-40
Zone D	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 and C/AS2, 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 NZ Limited and its licensed Regional Distributors must be completed by installers, trained by Flashclad NZ 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-dip 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 air seal in accordance with Acceptable Solution E2/AS1, Paragraph 9.1.6 or NASH Building Envelope Solutions, 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 NZ 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 Window and Door Flashing 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:

- 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 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.

Other Investigations

16.1 Structural and durability opinions have been provided by BRANZ technical experts.

16.2 An opinion on NZBC E2 code compliance for the Flashclad Weatherboard Cavity Cladding Systems, including evaluation of all details within the scope of this Appraisal, has been completed by BRANZ.

16.3 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

16.4 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 been examined by BRANZ, including methods adopted for quality control. Details regarding the composition of the materials used were obtained by BRANZ and found to be satisfactory.

17.2 The quality of materials, components and accessories supplied by Flashclad NZ Limited is the responsibility of the Flashclad NZ Limited Regional Distributor.

17.3 Quality on-site is the responsibility of the Flashclad NZ 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, air seals, 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 NZ Limited and the designer.

Sources of Information

- NASH Standard Part Two: 2019 Light Steel Framed Buildings
- NASH Building Envelope Solutions: 2019
- 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.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

BRANZ

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 NZ 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 NZ 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 NZ 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 NZ Limited or any third party.

For BRANZ

Chelydra Percy
Chief Executive

Date of Issue:
03 June 2021