BRANZ Appraised
Appraisal No. 800 [2020]

FLASHCLAD HORIZONTAL WEATHERBOARD CAVITY CLADDING SYSTEM

Appraisal No. 800 (2020)

This Appraisal replaces BRANZ Appraisal No. 800 (2013)

BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

1.1 The Flashclad Horizontal Weatherboard Cavity Cladding System is a cavity-based, interlocking powder coated aluminium weatherboard system. It is designed to be used as an external wall cladding system for residential and commercial type buildings where domestic construction techniques are used.

1.2 The system includes horizontally fixed BEVELBORD, DUALBORD and EUROBORD weatherboards, internal and external corner flashings, starter strips, cladding jointers, joinery flashings and accessories.

Scope

Timber Framing:

2.1 The Flashclad Horizontal Weatherboard Cavity Cladding System has been appraised as an external wall cladding for timber framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber framed buildings; and
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- situated in NZS 3604 Wind Zones up to, and including Extra High.

Steel Framing

2.2 The Flashclad Horizontal Weatherboard Cavity Cladding System has also been appraised as an external wall cladding for steel framed 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,
- situated in NASH Standard Part 2 Wind Zones up to, and including Extra High.

Specific Design

2.3 The Flashclad Horizontal Weatherboard Cavity Cladding System is also appraised for weathertightness and structural wind loading when used as an external wall cladding system for buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber framed buildings or NZBC Acceptable Solution E2/AS4, NASH Building Envelope Solutions Paragraph 1.1 for steel framed buildings; and,
- constructed with framing subject to specific engineering design; and,
- situated in specific design wind pressures up to a maximum design differential ultimate limit state (ULS) of 2.5 kPa.

General

2.4 The Flashclad Horizontal Weatherboard Cavity Cladding System must only be installed horizontally on vertical, flat surfaces.

2.5 The Flashclad Horizontal Weatherboard Cavity Cladding System is 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 Flashclad Horizontal Weatherboard Cavity Cladding System relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone or design wind pressure.]*

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, the Flashclad Horizontal Weatherboard Cavity Cladding 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 Flashclad Horizontal Weatherboard Cavity Cladding System meets the requirements for loads arising from self-weight, wind and impact [i.e. B1.3.3 (a), (h) and (j)]. See Paragraphs 9.1 - 9.4.

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years and B2.3.2. The Flashclad Horizontal Weatherboard Cavity Cladding System meets these requirements. See Paragraphs 10.1 - 10.3.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. The Flashclad Horizontal Weatherboard Cavity Cladding System meets this requirement. See Paragraphs 14.1 - 14.5.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. The Flashclad Horizontal Weatherboard Cavity Cladding System meets this requirement and will not present a health hazard to people.

Technical Specification

4.1 System components and accessories for the Flashclad Horizontal Weatherboard Cavity Cladding System, which are supplied by Flashclad NZ Limited are:

BEVELBORD, DUALBORD and EUROBORD Weatherboards

- **BEVELBORD weatherboards** are produced in a bevelback weatherboard profile with a smooth face. When installed, the cladding is effectively 19 mm thick. BEVELBORD weatherboards are available 165 mm wide (135 mm cover) and are supplied 5.8 m long.
- **DUALBORD weatherboards** are produced with a flat face and negative joint detail. When installed, the cladding is effectively 19 mm thick. DUALBORD weatherboards are available 203 mm wide (170 mm cover) and are supplied 5.8 m long.
- **EUROBORD weatherboards** are produced with a flat face and an interlocking, hidden joint detail. When installed, the cladding is effectively 19 mm thick. EUROBORD weatherboards are available 265 mm wide (230 mm cover) and are supplied 5.8 m long.
- **BEVELBORD, DUALBORD and EUROBORD weatherboards** are manufactured from 6063 T5 grade aluminium alloy. The boards are extruded, powder coated on the exposed faces then cut to length.

Accessories

- **Flashclad Combination Cavity Closure/Base Starter** - an extruded aluminium profile punched with 5 mm diameter punched holes in the bottom face to provide ventilation for the wall cavity and prevent the ingress of vermin. It is also used to locate and secure the bottom of the first course of weatherboards. The Base Starter is powder coated and is available in 5.8 m lengths.
- **EUROBORD Horizontal Cavity Base Starter** - an extruded aluminium profile used to locate and secure the bottom of the first course of weatherboards. The Base Starter is powder coated and is available in 5.8 m lengths.

- **Internal and external corner flashings** - extruded aluminium profiles used as the junction between BEVELBORD, DUALBORD and EUROBORD weatherboards at internal (90°) and external (90°) corners. The extrusions are powder coated and are available in 5.8 m lengths.
- **Cover moulding** - an extruded aluminium profile used to cap the cut edges of ripped BEVELBORD, DUALBORD and EUROBORD weatherboards. The moulding is powder coated and is available in 5.8 m lengths.
- **Flashman Cladding Junction** - extruded aluminium flashing for use when butting lengths of BEVELBORD, DUALBORD and EUROBORD weatherboard to other cladding types. The junction is powder coated and is available in 5.8 m lengths.
- **Cladding Jointer** – two part extruded aluminium for use when jointing lengths of BEVELBORD, DUALBORD and EUROBORD weatherboard. The jointer is powder coated and is available in 5.8 m lengths.
- **Soffit Dado** - extruded aluminium profile for finishing the BEVELBORD and DUALBORD weatherboards at the soffit lining. The soffit dado is powder coated and is available in 5.8 m lengths.
- **EUROBORD Horizontal Soffit Dado** - extruded aluminium profile for finishing the EUROBORD weatherboards at the soffit lining. The soffit dado is powder coated and is available in 5.8 m lengths.
- **Sill Bead** - extruded aluminium profile for finishing the BEVELBORD, DUALBORD and EUROBORD weatherboards at the Flashman window sill and meter box bases. The sill bead is powder coated and is available in 5.8 m lengths.
- **Head Trim** - extruded aluminium profiles for finishing the BEVELBORD, DUALBORD and EUROBORD weatherboards at window and door heads and above meter boxes. The adjustable head trim is powder coated and is available in 5.8 m lengths.
- **Separation strip (for timber cavity battens)** - 50 mm wide PVC adhesive tape. The tape is 80 microns thick and supplied in rolls 50 m long.
- **Flashman window and door flashing system** - a range of extruded aluminium profiles and accessories for flashing around window and door joinery penetrations. The Flashman system components and accessories are detailed within and covered by BRANZ Appraisal No. 573 (2020).
- **BEVELBORD and DUALBORD weatherboard fixings (timber frame)** - 65 mm long, Grade 304 stainless steel hex head self-drilling screws with a thread diameter of 6.2 mm.
- **EUROBORD weatherboard fixings (timber frame)** - 65 mm long, Grade 304 stainless steel hex head self-drilling screws with a thread diameter of 6.2 mm.
- **BEVELBORD, DUALBORD and EUROBORD weatherboard, cavity batten and thermal break fixings (steel frame)** - Grade 304 stainless steel hex head self drilling screws with a thread diameter of 6.2 mm. The screw length must allow a minimum 10 mm penetration through the steel frame.

4.2 Accessories used with the Flashclad Horizontal Weatherboard Cavity Cladding System, which are supplied and installed by the building contractor, are:

- **Flexible wall underlay** - building paper complying with NZBC Acceptable Solution E2/AS1, Table 23 or NASH Building Envelope Solutions, Table 23, or breather-type membranes covered by a valid BRANZ Appraisal for use as wall underlays.
- **Flexible wall underlay support** - polypropylene strap, 75 mm galvanised mesh, galvanised wire, or additional vertical battens for securing the flexible wall underlay in place and preventing bulging of the bulk insulation into the drainage cavity. *(Note: mesh and wire galvanising must comply with AS/NZS 4534.)*
- **Rigid wall underlay** - plywood or fibre cement sheet complying with NZBC Acceptable Solution E2/AS1 , Table 23 or NASH Building Envelope Solutions, Table 23, or rigid sheathing covered by a valid BRANZ Appraisal for use as a rigid air barrier system.
- **Flexible sill and jamb flashing tape** - flexible flashing tapes complying with either 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.

- **Thermal break (steel frame)** – expanded polystyrene (EPS) 10 mm thick minimum with a minimum R value of R0.25 in accordance with the requirements of NZBC Acceptable Solution E3/AS1, Paragraph 1.1.4 (d).
- **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.
- **Cavity batten temporary fixings** - 40 x 2.5 mm flat head hot-dipped galvanised nails or 50 x 2.87 mm hot-dipped galvanised gun nails (timber frame), or self-drilling 6 gauge hot-dip galvanised class 4 screws (steel frame).
- **Inter-storey joint flashing** - folded from aluminium sheet and powder coated to match the weatherboard.
- **Window and door trim cavity air seal** - air seals complying with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Paragraph 9.1.6, or self-expanding, moisture cure polyurethane foam air seals covered by a valid BRANZ Appraisal for use around window, door and other wall penetrations.

Handling and Storage

5.1 Handling and storage of all materials supplied by Flashclad NZ Limited, whether on site or off site, is under the control of the Flashclad regional distributor. BEVELBORD, DUALBORD and EUROBORD weatherboards must be stacked flat, off the ground and supported on a level platform. Care must be taken to avoid damage to powder coated surfaces. Weatherboards must always be carried on edge.

5.2 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.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Flashclad Horizontal Weatherboard Cavity Cladding 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 Treatment

7.1 Timber wall framing behind the Flashclad Horizontal Weatherboard Cavity Cladding System must be treated as required by NZBC Acceptable Solution B2/AS1.

Timber Framing

7.2 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 AS/NZS 1170. 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, with dwangs fitted flush between the studs at maximum 800 mm centres.

7.3 Additional framing will be required at soffits and internal corners for the support and fixing of BEVELBORD, DUALBORD and EUROBORD weatherboards.

Steel Framing

7.4 Steel framing must comply with NASH Standard Part Two for buildings or parts of buildings within the scope limitations of NASH Standard Part Two. Buildings or parts of buildings outside the scope of NASH Standard Part Two must be to a specific design. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NASH Standard Part Two.

7.5 The minimum framing specification is 'C' section studs and dwangs of overall section size of 75 mm web and 32 mm flange. Steel thickness must be minimum 0.75 mm.

7.6 In all cases studs must be at maximum 600 mm centres, with dwangs fitted flush between the studs at maximum 800 mm centres.

General

8.1 Punchings in the Combination Cavity Closure/Base Starter and EUROBORD Horizontal Cavity Base Starter provide a minimum ventilation opening area of 1000 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 [b].

8.2 The ground clearance to finished floor levels as set out in NZS 3604 must be adhered to at all times. At ground level, paved surfaces such as footpaths must be kept clear of the bottom edge of the cladding system by a minimum of 100 mm, and unpaved surfaces by 175 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Table 18 or NASH Building Envelope Solutions, Table 18.

8.3 At deck or low pitch roof/wall junctions, the bottom edge of the BEVELBORD, DUALBORD and EUROBORD weatherboards must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Paragraph 9.1.3.

8.4 All external walls of buildings must have barriers to airflow in the form of interior linings with all joints stopped for wind zones up to and including Very High, and rigid underlays for buildings in the Extra High wind zone and specifically designed buildings up to 2.5 kPa design differential ULS wind pressure. 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 or NASH Building Envelope Solutions, Table 23. For attached garages, wall underlays must be selected in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.4 or NASH Building Envelope Solutions, Paragraph 9.1.3.4. Where rigid underlays are used, the cavity batten fixing lengths must be increased by a minimum of the thickness of the underlay.

8.5 Where penetrations through the Flashclad Horizontal Weatherboard Cavity Cladding System are wider than the cavity batten spacing, allowance must be made for airflow between adjacent cavities. A minimum 10 mm gap must be left between the bottom of the vertical cavity batten and the flashing to the opening.

8.6 Inter-storey drained joints must be constructed in accordance with the Technical Literature. Inter-storey drained joints must be provided to limit continuous cavities to the lesser of 2-storeys or 7 metres in height, in accordance with the requirements of NZBC Acceptable Solution E2/AS1, or NASH Building Envelope Solutions, Paragraph 9.1.9.4 [b].

8.7 Where the Flashclad Horizontal Weatherboard Cavity Cladding System abuts other cladding systems, designers must detail the junction to meet their own requirements and the performance requirements of the NZBC. The Technical Literature provides guidance using the Flashclad Cladding Junction. Details not included with the Technical Literature have not been assessed and are outside the scope of this Appraisal.

Structure

9.1 The mass of the Flashclad Horizontal Weatherboard Cavity Cladding System using BEVELBOARD or DUALBOARD weatherboards is approximately 8 kg/m^2. The mass of the Flashclad Horizontal Weatherboard Cavity Cladding System using EUROBOARD weatherboard is approximately 11 kg/m^2. The Flashclad Horizontal Weatherboard Cavity Cladding System is therefore considered a light wall cladding in terms of NZS 3604 and NASH Standard Part 2.

Impact Resistance

9.2 The Flashclad Horizontal Weatherboard Cavity Cladding System has good resistance to hard and soft body impacts likely to be encountered in normal residential use. The likelihood of impact damage to the system when used in light commercial situations should be considered at the design stage, and appropriate protection such as the installation of bollards and barriers should be considered for vulnerable areas.

Wind Zones

9.3 The Flashclad Horizontal Weatherboard Cavity Cladding System is suitable for use in all Wind Zones of NZS 3604, up to, and including Extra High where buildings are designed to meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 or NASH Building Envelope Solutions, Paragraph 3.2, or up to design differential 2.5 kPa ULS wind pressure when the buildings are specifically designed.

Weatherboard Fixing Centres

9.4 Where studs are at 600 mm centres, BEVELBORD, DUALBORD and EUROBORD weatherboards can be fixed through the cavity battens to the wall frame at 600 mm centres. Where studs are at 400 mm centres, BEVELBORD, DUALBORD and EUROBORD weatherboards can be fixed through the cavity battens to the wall frame at 400 mm centres (into each stud) when the framing is designed in accordance with NZS 3604 or NASH Standard Part 2, or at 800 mm centres (every second stud), when the framing is specifically designed.

Durability

Serviceable Life

10.1 The Flashclad Horizontal Weatherboard Cavity Cladding 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 Flashclad Horizontal Weatherboard Cavity Cladding 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

10.2 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.

10.3 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 Flashclad Horizontal Weatherboard Cavity Cladding 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

11.1 Regular maintenance is essential for Flashclad Horizontal Weatherboard Cavity Cladding System installations to continue to meet the NZBC durability performance provision and to maximise their serviceable life.

11.2 Annual inspections must be made to ensure that all aspects of the cladding system, including flashings and any joints remain in a weathertight condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress, must be repaired immediately. Regular cleaning (every 6 months) of the powder coating with water and a mild detergent is required to remove grime, dirt and organic growth, to maximise the life and appearance of the cladding. Repainting of the powder coating may be considered necessary at some stage during the serviceable life of the system in order to restore the appearance of the cladding. Repainting must be carried out in accordance with the paint manufacturer's instructions for treatment of aged powder coated aluminium.

11.3 Minimum ground clearances as set out in this Appraisal must be maintained at all times during the life of the cladding. *(Note: Failure to adhere to the minimum ground clearances given in this Appraisal and the Technical Literature will adversely affect the long term durability of the Flashclad Horizontal Weatherboard Cavity Cladding System.)*

Prevention of Fire Occurring

12.1 BEVELBORD, DUALBORD and EUROBORD weatherboards are considered a non-combustible material 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.

Control of External Fire Spread

Vertical Fire Spread

13.1 This Appraisal only covers buildings 10 m or less in height. NZBC Functional Requirement C3.2 identifies that external vertical fire spread to upper floors only needs be considered for buildings with a building height greater than 10 m. Control of external vertical fire spread is therefore outside the scope of this Appraisal.

Horizontal Fire Spread

13.2 The Flashclad Horizontal Weatherboard Cavity Cladding System is composed entirely of aluminium and is therefore defined as non-combustible, as per NZBC Acceptable Solution C/AS2 Definitions. When Flashclad Horizontal Weatherboard Cavity Cladding is factory powder coated with a coating thickness of less than 1 mm in thickness, it can be used within 1 m of the relevant boundary. This meets the requirements of Paragraph 5.4 of NZBC Acceptable Solution C/AS1 and Paragraph 5.8.2 (a) of NZBC Acceptable Solution C/AS2.

13.3 Refer to NZBC Acceptable Solutions C/AS1 and C/AS2, and Verification Method C/VM2 for fire resistance rating and control of external fire spread requirements for external walls.

External Moisture

14.1 The Flashclad Horizontal Weatherboard Cavity Cladding 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.

14.2 The cavity must be sealed off from the roof and sub-floor space to meet compliance with NZBC Clause E2.3.5.

14.3 The Flashclad Horizontal Weatherboard Cavity Cladding System allows excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet compliance with NZBC Clause E2.3.6.

14.4 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.

14.5 The use of the Flashclad Horizontal Weatherboard Cavity Cladding System, where there is a designed cavity drainage path for moisture that penetrates the cladding, does not reduce the requirement for junctions and penetrations to remain weather resistant.

Internal Moisture

Water Vapour

15.1 The Flashclad Horizontal Weatherboard Cavity Cladding System is not a barrier to the passage of water vapour, and when installed in accordance with this Appraisal and the Technical Literature will not create or increase the risk of moisture damage resulting from condensation. Refer to Paragraphs 15.2 and 15.3 for specific requirements for steel framed buildings.

15.2 Where the Flashclad Horizontal Weatherboard Cavity Cladding System is installed over a steel frame, an expanded polystyrene thermal break must be installed over each steel member under the underlay to provide the thermal break in accordance with the requirements of NZBC Acceptable Solution E3/AS1, Paragraph 1.1.4 (d).

15.3 The cavity battens and the rest of the Flashclad Horizontal Weatherboard Cavity Cladding System are then installed over the top of the thermal break and wall underlay in accordance with the Technical Literature and this Appraisal.

Installation Information

Installation Skill Level Requirements

16.1 Installation 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.

16.2 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 Flashclad Horizontal Weatherboard Cavity Cladding System Technical Literature and this Appraisal.

System Installation

Wall Underlay and Flexible Sill and Jamb Tape Installation

17.1 The selected wall 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 battens and the Flashclad Horizontal Weatherboard Cavity Cladding System. Flexible wall underlay must be installed horizontally and be continuous around corners. Underlay must be lapped 75 mm minimum at horizontal joints and 150 mm minimum over studs at vertical joints. Generic rigid sheathing materials must be installed in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions and be overlaid with a flexible wall underlay. Proprietary systems shall be installed in accordance with the manufacturer's instructions. Particular attention must be paid to the installation of the wall underlay and sill and jamb tapes around window and door openings to ensure a continuous seal is achieved and all exposed wall framing in the opening is protected.

Cavity Battens

17.2 Cavity battens must be installed over the flexible or rigid wall underlay 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. Two rows of battens must be installed up the jambs of windows and doors in accordance with the instructions given within the Technical Literature. The battens must be temporarily fixed in place with 40 x 2.5 mm hot-dipped galvanised flat head nails or 50 x 2.87 mm hot-dipped galvanised gun nails at maximum 800 mm centres (timber frame), or self-drilling 6 gauge hot-dip galvanised class 4 screws at maximum 800 mm centres (steel frame).

17.3 Where studs are at greater than 450 mm centres and a flexible wall underlay is being used, a wall underlay support must be installed over the underlay at maximum 300 mm centres horizontally to prevent the wrap bulging into the cavity space when bulk insulation is installed in the wall frame cavity.

Aluminium Joinery Installation

17.4 Aluminium joinery must be installed by the building contractor in accordance with the Technical Literature, incorporating the Flashman 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 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

17.5 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 installers trained by Flashclad Regional Distributors.

Flashclad Horizontal Weatherboard Cavity Cladding System Installation

17.6 The system must be installed in accordance with the Technical Literature by installers trained by Flashclad Regional Distributors.

Finishing

17.7 The Flashclad Horizontal Weatherboard Cavity Cladding System is pre-finished and does not require painting at the completion of installation. Touch up of scratches and the like must be completed in accordance with the instructions of Flashclad NZ Limited.

Health and Safety

18.1 Hearing and eye protection must be worn while cutting BEVELBORD, DUALBORD and EUROBORD weatherboards and accessories.

Basis of Appraisal

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

Tests

19.1 The following testing on the Flashclad Horizontal Weatherboard Cavity Cladding System has been completed by BRANZ:

- The Flashclad Horizontal Weatherboard Cavity Cladding System has been tested to NZBC Verification Method E2/VM1.
- Uniform wind face load tests to simulate wind pressures on BEVELBORD and EUROBORD weatherboard were carried out by BRANZ. BEVELBORD when fixed to framing at 600 mm centres achieved a design differential pressure of 3.84 kPa. EUROBORD when fixed to framing at 800 mm centres achieved a design differential pressure of 4.3 kPa. The results were used in assessing the Flashclad Horizontal Weatherboard Cavity Cladding System.

Other Investigations

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

20.2 BRANZ expert opinion on NZBC E2 code compliance for the Flashclad Horizontal Weatherboard Cavity Cladding System including evaluation of all details within the scope of this Appraisal.

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

20.4 The Technical Literature for the Flashclad Horizontal Weatherboard Cavity Cladding System has been examined by BRANZ and found to be satisfactory.

Quality

21.1 The manufacture of BEVELBORD, DUALBORD and EUROBORD weatherboards 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.

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

21.3 Quality of installation on site of components and accessories supplied by Flashclad NZ Limited is the responsibility of the Flashclad NZ Limited Regional Distributor.

21.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and joinery, wall underlays, flashing tapes, airseals and cavity battens in accordance with the instructions of Flashclad NZ Limited.

21.5 Sub-trades are responsible for installation of penetrations, flashings etc that are relevant to their trade in accordance with the Flashclad Horizontal Weatherboard Cavity Cladding System Technical Literature.

21.6 Building owners are responsible for the maintenance of the Flashclad Horizontal Weatherboard Cavity Cladding System in accordance with the instructions of Flashclad NZ Limited.

Sources of Information

- AS/NZS 1170: 2002 Structural design actions.
- NASH Standard Part Two: 2019 Light Steel Framed Buildings
- NASH Building Envelope Solutions: 2019
- NZS 3603: 1993 Timber Structures Standard.
- 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 Flashclad Horizontal Weatherboard Cavity Cladding 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:
15 May 2020