



BRANZ Appraised

Appraisal No. 635 [2019]

PRIMAFlex™ CAVITY WALL CLADDING SYSTEM

Appraisal No. 635 [2019]

This Appraisal replaces BRANZ Appraisal No. 635 [2008]



BRANZ Appraisals

Technical Assessments of products for building and construction.

Manufactured by



Hume Cemboard Industries Sdn Bhd

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Product

- 1.1 The PRIMAFlex™ Cavity Wall Cladding System is a cavity-based, monolithic sheet wall cladding. It is designed to be used as an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.
- 1.2 The PRIMAFlex™ Cavity Wall Cladding System consists of PRIMAFlex™ sheet, which is a fibre cement sheet product, fixed over timber battens to form the cavity. The cladding joints are finished with purpose-made jointers or timber battens and the system is finished with a latex paint system.
- 1.3 The cladding incorporates a primary and secondary means of weather resistance (first and second line of defence) against water penetration by separating the cladding from the external wall framing with a nominal 20 mm cavity.

Scope

- 2.1 The PRIMAFlex™ Cavity Wall Cladding System has been appraised as an external wall cladding for buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
 - constructed with timber framing complying with the NZBC; 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.
- 2.2 The PRIMAFlex™ Cavity Wall Cladding System must only be installed on vertical, flat surfaces [except for tops of balustrades and parapets, which must have a minimum 5° slope and be waterproofed in accordance with the Technical Literature].
- 2.3 The PRIMAFlex™ Cavity Wall Cladding System is appraised for use with aluminium window and door joinery that is installed with vertical jambs and horizontal heads and sills. *[The Appraisal of the PRIMAFlex™ Cavity Wall Cladding 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 PRIMAflex™ Cavity Wall 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 PRIMAflex™ Cavity Wall 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 10.1 - 10.4.

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years, B2.3.1 (c) 5 years and B2.3.2. The PRIMAflex™ Cavity Wall Cladding System meets these requirements. See Paragraphs 11.1 and 11.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. The PRIMAflex™ Cavity Wall Cladding System meets this requirement. See Paragraphs 15.1 - 15.5.

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

Technical Specification

- 4.1 System components and accessories for the PRIMAflex™ Cavity Wall Cladding System, which are supplied by Independent Building Supplies Ltd are:

PRIMAflex™ Sheet

- PRIMAflex™ sheets are manufactured to conform to the requirements of AS/NZS 2908.2 in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.7.2.
- PRIMAflex™ sheets are 6.0 and 7.5 mm thick fibre cement, manufactured by Hume Cemboard Industries Sdn Bhd from Portland cement, top grade cellulose fibre, finely ground sand and water. The sheets are formed, cut to length and then cured by high-pressure autoclaving. They are produced in flat, smooth surfaced sheet material form, and are grey in colour.
- PRIMAflex™ sheets have square edges and are available in sizes of 1200 mm wide by 2400, 2700 and 3000 mm long, and 900 mm wide by 2400 mm long. Other sizes are available by special request.

- 4.2 Accessories used with the PRIMAflex™ Cavity Wall Cladding System which are supplied by the building contractor are:

- **PRIMAflex™ sheet fixings** - 60 x 3.15 mm hot-dip galvanised flat head nails or 60 x 3.15 mm stainless steel, flat head annular grooved nails.
- **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 fixings** - 40 x 2.8 mm hot-dip galvanised flat head nails.
- **Timber cover boards** - pre-primed 65 x 18 mm Radiata pine treated to Hazard Class H3.1 with 6 x 6 mm weathergrooves.
- **Timber cover board fixings** - 65 x 3.15 mm hot-dip galvanised or stainless steel annular grooved jolt head nails.
- **Internal corner moulding** - exterior grade uPVC or aluminium, complying with NZBC Acceptable Solution E2/AS1, Figure 104B (c).
- **Boxed corner boards** - 90 x 18 mm and 65 x 18 mm Radiata pine treated to Hazard Class H3.1 with 6 x 6 mm weathergrooves.
- **Boxed corner fixings** - 60 x 2.8 mm hot-dip galvanised jolt head nails or 60 x 3.15 mm stainless steel, jolt head annular grooved nails.

[Note: Hot-dip galvanising must comply with AS/NZS 4680 and stainless steel fixings must be Grade 316.]



- **Horizontal flashing** - exterior grade uPVC, complying with NZBC Acceptable Solution E2/AS1, Figure 108.
- **Horizontal flashing jointers** - exterior grade uPVC horizontal flashing jointer and corner flashing jointer.
- **Vertical uPVC jointers** - complying with NZBC Acceptable Solution E2/AS1 Figure 104A [b].
- **Cavity vent strip** - exterior grade uPVC punched with 3-5 mm holes or slots complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3.
- **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.
- **Joinery head flashings** - folded from aluminium or galvanised steel to suit the window or door trim opening. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1, Table 20 for durability requirements.
- **Parapet, balustrade and inter-storey drained joint flashings** - folded from aluminium or galvanised steel. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1, Table 20 for durability requirements.
- **Flexible wall underlay** - building paper complying with NZBC Acceptable Solution E2/AS1, 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 building 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 rigid sheathing covered by a valid BRANZ Appraisal for use as rigid air barrier systems.
- **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 suitable for use around window, door and other wall penetration openings.
- **Flexible sealant** - sealant complying with NZBC Acceptable Solution E2/AS1, or sealant covered by a valid BRANZ Appraisal for use as a weather sealing sealant for exterior use.

Paint System Specification

- 4.3 All sheet edges, including cut edges around penetrations must be sealed prior to fixing. The PRIMAFlex™ Cavity Wall Cladding System must be finished with at least two coats of an exterior grade latex acrylic paint complying with any of Parts 7, 8, 9 or 10 of AS 3730. Paint colours must have a light reflectance value of 40% minimum regardless of gloss value.
- 4.4 Paint systems are not supplied by Independent Building Supplies and have not been assessed by BRANZ and are therefore outside the scope of this Appraisal.

Handling and Storage

- 5.1 Handling and storage of all materials supplied by Independent Building Supplies or the building contractor, whether on site or off site, is under the control of the building contractor. PRIMAFlex™ sheets must be stacked flat, off the ground and supported on a level platform. They must be kept dry at all times either by storing under cover or by providing waterproof covers to the stack. Care must be taken to avoid damage to edges, ends and surfaces. The sheets must always be carried on edge. uPVC flashings and profiles must be protected from direct sunlight and physical damage, and should be stored flat and under cover.
- 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 PRIMAflex™ Cavity Wall 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 PRIMAflex™ Cavity Wall 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 for buildings designed to NZS 3604 in Wind Zones up to and including Very High and at maximum 400 mm centres for buildings situated in NZS 3604 Wind Zone Extra High. Dwargs must be fitted flush between the studs at maximum 800 mm centres.
- 7.3 Timber wall framing behind cavity battens where sheets are joined must be nominal 50 mm thickness [i.e. 45 mm minimum finished thickness].
- 7.4 Timber framing must have a maximum moisture content of 24% at the time of the cladding application. *[Note: If PRIMAflex™ sheets are fixed to framing with a moisture content of greater than 24% problems may occur at a later date due to excessive timber shrinkage.]*

PRIMAflex™ Sheet Set Out

- 7.5 PRIMAflex™ sheets must be installed vertically. All vertical PRIMAflex™ sheet edges must be supported and fixed through the cavity battens to the wall framing. Horizontal sheet edges must be supported at fixing locations with cavity spacers in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.2 [f]. At the base of the wall, the sheets must hang 50 mm below the supporting framing.
- 7.6 Additional framing may be required at soffits, internal and external corners and window and door openings for the support and fixing of sheet edges.

General

- 8.1 Punchings in the cavity vent strip must provide a minimum ventilation opening area of 1000 mm² per lineal metre of wall in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3 [b].
- 8.2 The ground clearance to finished floor levels as set out in NZBC Acceptable Solution E2/AS1 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.
- 8.3 At balcony, deck or low pitch roof/wall junctions, the bottom edge of the PRIMAflex™ sheets 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 NZBC Acceptable Solution E2/AS1, 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. 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. For attached garages, wall underlays must be selected in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.4. Where rigid underlays are used, the fixing lengths must be increased by a minimum of the thickness of the underlay.
- 8.5 Where penetrations through the PRIMAFlex™ Cavity Wall 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 Where the system abuts other cladding systems, designers must detail the junction 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.

Control Joints

- 9.1 Control joints must be constructed in accordance with the Technical Literature, and be provided as follows:
- Vertical control joints - aligned with any control joint in the structural framing, or where the system abuts different cladding types.
- [Note: Vertical control joints must be located over structural supports. The design of vertical junctions where the system abuts different cladding types is outside the scope of this Appraisal and is the responsibility of the designer - see Paragraph 8.7.]*

Inter-storey Junctions

- 9.2 Inter-storey drained joints must be constructed in accordance with the Technical Literature. Inter-storey 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, Paragraph 9.1.9.4 [b].

Structure

Mass

- 10.1 The mass of the PRIMAFlex™ Cavity Wall Cladding System is approximately 8.5 kg/m² at equilibrium moisture content (EMC), therefore the PRIMAFlex™ Cavity Wall Cladding System is considered a light wall cladding in terms of NZS 3604.

Impact Resistance

- 10.2 The PRIMAFlex™ Cavity Wall Cladding System has adequate resistance to impact loads 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 provided for vulnerable areas.

Wind Zones

- 10.3 The PRIMAFlex™ Cavity Wall 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.

PRIMAFlex™ Sheet Fixings

- 10.4 PRIMAFlex™ sheets must be fixed through the cavity battens to the wall framing (maximum 600 mm stud centres for installations in up to, and including, Very High Wind Zones and maximum 400 mm stud centres for installations in the Extra High Wind Zone) at maximum 200 mm vertical centres along sheet edges and maximum 300 mm centres in the body of the sheet where the cavity batten is fully supported over framing. The sheets must be fixed at maximum 200 mm centres at horizontal sheet edges. The fixings must be positioned a minimum of 12 mm from all sheet edges, and a minimum of 50 mm vertically and horizontally from sheet corners edges. The fastener heads must finish proud of the sheet surface.



Durability

- 11.1 The PRIMAflex™ Cavity Wall Cladding System meets the performance requirements of NZBC Clause B2.3.1 [b], 15 years for the PRIMAflex™ sheets, fixings and flashings, and the performance requirements of NZBC Clause B2.3.1 [c], 5 years for the exterior paint system.

Serviceable Life

- 11.2 PRIMAflex™ Cavity Wall Cladding System installations are expected to have a serviceable life of at least 30 years provided the finish system is maintained in accordance with this Appraisal to ensure the PRIMAflex™ sheets and fixings are continuously protected by a weathertight paint system and remain dry in service. For the PRIMAflex™ Cavity Wall Cladding System to meet the durability and external moisture requirements of the NZBC, PRIMAflex™ sheets must be finished within 3 months of fixing.
- 11.3 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 for fasteners. The fixing of PRIMAflex™ sheets 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

- 12.1 Regular maintenance is essential for PRIMAflex™ Cavity Wall Cladding System installations to continue to meet the NZBC durability performance provision and to maximise their serviceable life.
- 12.2 Annual inspections must be made to ensure that all aspects of the cladding system, including the finish system, flashings and any sealed joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress, must be repaired immediately. Sealant, paint coatings, flashings or the fibre cement sheets must be repaired in accordance with the relevant manufacturer's instructions.
- 12.3 Regular cleaning [at least annually] of the finish system is recommended to remove grime, dirt and organic growth, to maximise the life and appearance of the coating. Grime may be removed by brushing with a soft brush, warm water and detergent.
- 12.4 Recoating of the finishing system will be necessary throughout the life of the cladding system. The interval between recoats depends on the finish colour, orientation and quality of the application, and will be at approximately 5-10 yearly intervals in accordance with the paint manufacturer's instructions.
- 12.5 Minimum ground clearances as set out in this Appraisal must be maintained at all times during the life of the cladding. *[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 PRIMAflex™ Cavity Wall Cladding System.]*

Prevention of Fire Occurring

- 13.1 PRIMAflex™ sheet is considered a non-combustible material and need not be separated from heat sources such as fire places, heating appliances, 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 Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1.

Control of External Fire Spread

- 14.1 The PRIMAflex™ sheet when finished with a paint coating of no more than 1.0 mm in thickness has been assessed by BRANZ experts and considered non-combustible and to meet the requirements of Paragraph 5.8.2 a) of C/AS2 – C/AS7. The requirements in Paragraph 5.8.1 of C/AS2 – C/AS7 and 5.4 of C/AS1 therefore do not apply.
- 14.2 Refer to NZBC Acceptable Solutions and Verification Methods C/AS1-C/AS7 and C/VM2 for requirements for fire rating and exterior surface finish requirements of external walls.



External Moisture

- 15.1 The PRIMAflex™ Cavity Wall Cladding System, when installed and maintained in accordance with this Appraisal and the Technical Literature prevents the penetration of moisture that could cause undue dampness or damage to building elements.
- 15.2 The cavity must be sealed off from the roof and sub-floor space to meet compliance with NZBC Clause E2.3.5.
- 15.3 The PRIMAflex™ Cavity Wall 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.
- 15.4 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.
- 15.5 The use of the PRIMAflex™ Cavity Wall Cladding System where there is a designed cavity drainage path for moisture that penetrates the cladding, does not reduce the requirement for joints, penetrations and junctions to remain weather resistant.

Internal Moisture

Water Vapour

- 16.1 The PRIMAflex™ Cavity Wall Cladding System is not a barrier to the passage of water vapour, and when installed in accordance with this Appraisal will not create or increase the risk of moisture damage resulting from condensation.

Installation Information

Installation Skill Level Requirements

- 17.1 Installation must always be carried out in accordance with the PRIMAflex™ Cavity Wall Cladding System Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence Class.

System Installation

Building Underlay and Flexible Sill and Jamb Tape Installation

- 18.1 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 battens and the rest of the PRIMAflex™ Cavity Wall Cladding System. Flexible building 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 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 building 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

- 18.2 Cavity battens must be installed over the building wrap 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. The battens must be fixed in place with 40 x 2.8 mm hot-dipped galvanised flat head nails at maximum 800 mm centres.
- 18.3 The selected cavity vent strip must be installed with the bottom of the vent strip flush with the underside of the cavity battens. *[Note: A minimum 15 mm drip edge to the bottom of the PRIMAflex™ sheet must be maintained at all times.]*



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

Aluminium Joinery Installation

- 18.5 Aluminium joinery and associated head flashings must be installed by the building contractor in accordance with the Technical Literature. A 7.5 mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and air seal can be installed after the joinery has been secured in place.

PRIMAFlex™ Sheet Installation

- 18.6 PRIMAFlex™ sheets may be cut by scoring and snapping, hand guillotine, hand or power saw. Holes and cut-outs may be formed by drilling a number of holes around the perimeter of the opening required and tapping out the centre with a hammer, or by using a hole saw.
- 18.7 Sheets must be dry prior to installation. Sheet edges must be pre-painted with a seal coat prior to fixing as required by NZBC Acceptable Solution E2/AS1, Paragraph 9.7.2.1 [a].
- 18.8 Prior to fixing sheets, a check must be made to ensure all sheet joints will be supported by framing. Sheets must be fixed through the cavity battens and cavity spacers to the timber framing with either 60 x 3.15 mm hot-dip galvanised flat head nails or stainless steel, ring shank flat head nails. The nail heads must finish proud of the sheet surface.
- 18.9 Sheets must not be fixed to inter-storey joists or blocking, and must have a 15 mm gap between sheet edges at this point to allow for shrinkage of the framing. This gap must be flashed with a horizontal control joint flashing to prevent moisture entry.

Finishing

- 18.10 The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. PRIMAFlex™ sheets must be painted within 3 months following fixing and must be clean and dry before commencing. Allow the recommended drying time between coats and follow the temperature limitations for application.

Inspections

- 18.11 The Technical Literature must be referred to during the inspection of PRIMAFlex™ Cavity Wall Cladding System installations.

Health and Safety

- 19.1 Safe use and handling procedures for the components that make up the PRIMAFlex™ Cavity Wall Cladding System are provided in the relevant manufacturer's Technical Literature.
- 19.2 Cutting of PRIMAFlex™ sheets must be carried out in well ventilated areas, and a dust mask and eye protection must be worn. When power tools are used for cutting, grinding or forming holes, safety measures as set out in the Technical Literature must be undertaken because of the amount of dust generated.

Basis of Appraisal

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

Tests

- 20.1 The following testing has been completed by BRANZ:
- BRANZ expert opinion on NZBC E2 code compliance for the PRIMAFlex™ Cavity Wall Cladding System was based on evaluation of all details within the scope against E2/AS1, as stated within this Appraisal. 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.



- Testing of new and carbonated, fungal cellared and naturally weathered PRIMAFlex™ sheet has been undertaken by BRANZ in accordance with AS/NZS 2908.2:1992 Cellulose cement products - Flat sheets. BRANZ experts have evaluated the test results in forming a durability opinion on the product.
- 20.2 Cone Calorimeter testing of PRIMAFlex™ sheet has been completed by CSIRO in accordance with AS/NZS 3837.

Other Investigations

- 21.1 Fire and durability opinions have been given by BRANZ technical experts.
- 21.2 The practicability of installation has been assessed by BRANZ.
- 21.3 The Technical Literature for the PRIMAFlex™ Cavity Wall Cladding System has been examined by BRANZ and found to be satisfactory.

Quality

- 22.1 The manufacture of PRIMAFlex™ sheet 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.
- 22.2 The quality management system of the PRIMAFlex™ sheet manufacturer, Hume Cemboard Industries Sdn Bhd, has been assessed and registered as meeting the requirements of ISO 9001: 2015.
- 22.3 Quality of installation on site of components and accessories supplied by Independent Building Supplies and the building contractor is the responsibility of the installer.
- 22.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and joinery, building wraps, flashing tapes, air seals, joinery head flashings, cavity battens and PRIMAFlex™ sheets in accordance with the instructions of Hume Cemboard Industries Sdn Bhd.
- 22.5 Building owners are responsible for the maintenance of the PRIMAFlex™ Cavity Wall Cladding System in accordance with the instructions of Hume Cemboard Industries Sdn Bhd.

Sources of Information

- AS/NZS 1170: 2002 Structural design action – General principles.
- AS/NZS 2908.2:2000 Cellulose-cement products - Flat Sheet.
- AS/NZS 3837: 1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter
- AS/NZS 4534: 2006 Zinc and zinc/aluminium-alloy coatings on steel wire.
- AS/NZS 4680: 2006 Hot-dip galvanised [zinc] coatings on fabricated ferrous articles
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber Structures Standard.
- 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 8, 30 November 2018].
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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23 May 2019

PRIMAFlex™ CAVITY WALL
CLADDING SYSTEM



In the opinion of BRANZ, **PRIMAFlex™ Cavity Wall 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 **Hume Cemboard Industries Sdn Bhd**, 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. **Hume Cemboard Industries Sdn Bhd**:
 - 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 **Hume Cemboard Industries Sdn Bhd**.
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 **Hume Cemboard Industries Sdn Bhd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

23 May 2019