



## BRANZ Appraised

Appraisal No. 528 [2024]

## THE BUILDING AGENCY ALUCOBOND® CLADDING SYSTEM

### Appraisal No. 528 [2024]

This Appraisal replaces BRANZ  
Appraisal No. 528 [2017]



### BRANZ Appraisals

Technical Assessments of products  
for building and construction.



### The Building Agency Limited

14A Link Drive  
Wairau Park  
Auckland 0627

Tel: 09 415 2669

Email: [info@buildingagency.co.nz](mailto:info@buildingagency.co.nz)

Web: [www.thebuildingagency.co.nz](http://www.thebuildingagency.co.nz)



### BRANZ

#### BRANZ

1222 Moonshine Rd,  
RD1, Porirua 5381  
Private Bag 50 908  
Porirua 5240,  
New Zealand

Tel: 04 237 1170

[branz.co.nz](http://branz.co.nz)



## Product

- 1.1 The Building Agency Alucobond® Cladding System is a drained and ventilated external wall cladding. It is designed to be used as an external cladding system for residential and light commercial type buildings where domestic construction techniques are used. The system incorporates fabricated cladding panels manufactured from Alucobond® A2, Alucobond® Plus and Alucolux® panels.

## Scope

- 2.1 The Building Agency Alucobond® Cladding System has been appraised for use as a drained and ventilated external wall cladding for buildings within the following scope:
  - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber-framed buildings; and,
  - constructed with timber framing complying with the NZBC; and,
  - subject to specific structural engineering; 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; and,
  - with a building height of ≤ 10 m; and,
  - where the cladding incorporates Alucobond® Plus panels, it is located 1 m or more from the relevant boundary [refer to Paragraphs 12.1-12.7]; and,
  - where the cavity is drained and ventilated at least at every second-floor level or 10 m height, whichever is the lesser.
- 2.2 Building designers are responsible for verifying the performance of the joinery installation details. [Note: The Appraisal of The Building Agency Alucobond® Cladding System relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone.]

## Building Regulations

### New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, The Building Agency Alucobond® Cladding System, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. The Building Agency Alucobond® Cladding System meets the requirements for loads arising from self-weight, earthquake, wind, impact and creep [i.e. B1.3.3 [a], [f], [h], [j] and [q]]. See Paragraph 8.1.

**Clause B2 DURABILITY:** Performance B2.3.1 [b] 15 years. The Building Agency Alucobond® Cladding System meets this requirement. See Paragraphs 9.1-9.3.

**Clause C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE:** Performance C3.5 The Building Agency Alucobond® Cladding System can contribute to meeting this requirement. See Paragraphs 12.1 -12.7.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. The Building Agency Alucobond® Cladding System meets this requirement. See Paragraphs 13.1-13.6.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. The Building Agency Alucobond® Cladding System meets this requirement.

## Technical Specification

4.1 System components and accessories supplied by The Building Agency Limited are as follows:

### Cladding Panels

- Cladding panels are manufactured from Alucobond® A2, Alucobond® Plus and Alucolux® sheets by routing and folding to shape and size. Panels are reinforced by aluminium angles and stiffeners which are riveted or adhered to the panel. The Building Agency Limited should be contacted regarding the maximum sizes that may be achieved by panels. Panels are attached to the structure through aluminium fixing brackets. They are available in a variety of colours.

### Alucobond® A2

- Alucobond® A2 panels are a composite panel consisting of two 0.5 mm thick aluminium cover sheets and a 90% mineral-filled core with a total thickness of 4 mm. The exterior face is finished with a continuously coil-coated baked enamel coating. The rear aluminium sheet face has a polyester-based service coating. Panels are available 1,000, 1,250, 1,500 and 1,575 mm wide, in lengths to order.

### Alucobond® Plus

- Alucobond® Plus panels are a composite panel consisting of two 0.5 mm thick aluminium cover sheets and a 70% mineral-filled core with a total thickness of 4 mm. The exterior face is finished with a continuously coil-coated baked enamel coating. The rear aluminium sheet face has a polyester-based service coating. Panels are available 1,000, 1,250, 1,500 and 1,575 mm wide, in lengths to order.

### Alucolux®

- Alucolux® is a 3 mm thick, pre-finished solid aluminium panel which is coil-coated using an in-line three-coat fluorocarbon PVDF system. The rear aluminium sheet face has a mill finish or a polyester-based service coat. Standard panel width is 1,575 mm, with lengths available up to 6,000 mm.

### Accessories

- Screws for panel fixing.
- Aluminium angle fixing brackets.
- Plastic packers.



- 4.2 Accessories used with The Building Agency Alucobond® Cladding System that are supplied by others are:
- PEF backing rod.
  - Sikaflex® AT-Façade.
  - Sikasil® WS-305 CN.
  - Dow Corning 688.
  - Sikaflex® 552 AT.
  - Pink Batts 90 mm.
  - 6 mm James Hardie™ RAB™ board.
  - Glasswool insulation.

## Handling and Storage

- 5.1 Handling of the aluminium and aluminium composite panels and the associated accessories must be in accordance with The Building Agency Alucobond® Cladding System Technical Literature and The Building Agency Limited's instructions.

## Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- The Building Agency - WAB Aluminium Extrusion System Version 2, dated Jan. 2021.
- 6.2 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

### General

- 7.1 At ground level, the bottom edge of The Building Agency Alucobond® Cladding System must be kept clear of paved surfaces, such as footpaths, by a minimum of 100 mm, and unpaved surfaces by 175 mm, in accordance with NZBC Acceptable Solution E2/AS1.
- 7.2 At balconies, decks or low-pitched roof/wall junctions, the bottom edge of The Building Agency Alucobond® Cladding System 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 9.1.3.6 or NASH Building Envelope Solutions, Paragraph 9.1.3.
- 7.3 Where The Building Agency Alucobond® Cladding System abuts other cladding systems, the designer must detail the junction to meet their own requirements and the performance requirements of the NZBC. These details are outside the scope of this Appraisal.

### Timber Framing

- 7.4 The building designer is responsible for the framing design including timber strength and treatment requirements.
- 7.5 Studs must be provided at a maximum 600 mm centres and should be considered at the design stage to ensure support to all cladding panel joints. Nogs, where required, must be fitted flush between the studs.
- 7.6 Timber framing must comply with NZS 3604, or be to a specific design using AS/NZS 1170. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604.
- 7.7 Timber framing must have a maximum moisture content of 24% at the time of the cladding system application. *[Note: If the cladding system is installed to framing with a moisture content of greater than 24%, problems may occur at a later date due to excessive timber shrinkage.]*



**Timber Treatment**

- 7.8 Timber wall framing behind the Building Agency Alucobond Cladding System must be treated as required by NZBC Acceptable Solution B2/AS1.
- 7.9 All aluminium components of The Building Agency Alucobond® Cladding System must be kept out of contact with treated timber that contains copper [e.g. CCA, copper azole or ACQ].

**Wall Underlay**

- 7.10 All external walls of buildings must have barriers to airflow in the form of interior linings with all joints stopped. A flexible or rigid wall underlay is required for buildings in Wind Zones up to, and including, Very High, and a rigid wall underlay is required 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. The rigid wall underlay must be installed in accordance with the Technical Literature.

**Inter-storey Junctions**

- 7.11 Inter-storey drained joints must be provided to limit continuous cavities to the lesser of either 2-storeys or 7 m in height, in accordance with the requirements of NZBC Acceptable Solution E2/AS1.

**Structure**

**Impact Resistance**

- 8.1 The Building Agency Alucobond® Cladding System will resist human impact loads likely to be encountered. The surfaces of Alucobond® A2, Alucobond® Plus and Alucolux® panels are susceptible to impacts from hard and sharp bodies. Care must therefore be taken when installing the system. The likelihood of impact damage to the system during use should be considered at the design stage, and appropriate protection such as the installation of bollards or barriers should be considered for vulnerable areas, Impact Resistance must be considered for structural engineering purposes.

**Durability**

**Serviceable Life**

- 9.1 When installed and maintained in accordance with the specifications and installation instructions as defined in the Technical Literature, The Building Agency Alucobond® Cladding System, incorporating Alucobond® A2, Alucobond® Plus and Alucolux® panels has an expected serviceable life of greater than 15 years, see Table 1.

**Table 1: Expected Serviceable Life of Maintained The Building Agency Alucobond® Cladding System in New Zealand.**

Panel System	NZS 3604 Exposure Zone		
	Zone B	Zone C	Zone D <sup>1,4</sup>
Alucobond® A2	>15 Years	>15 Years	15 Years <sup>2,3</sup>
Alucobond® Plus	>15 Years	>15 Years	>15 Years <sup>2,3</sup>
Alucolux®	>15 Years	>15 Years	>15 Years <sup>2,3</sup>



Notes:

1. Beachfront areas with rough seas and surf beaches may have a higher corrosivity and can be defined as category E of AS/NZS 2728 and C5 of ISO 9223.
  2. Maintenance is essential.
  3. The durability of the coatings only is likely to be greater than 10 years. The use of the 3-coat paint system is very likely to improve the performance. Therefore the combined durability of the surface coating and the underlying aluminium sheet is likely to exceed 15 years in this severe marine environment.
  4. In industrially or agriculturally contaminated atmospheres, corrosive environments and geothermal hot spots, specific design is required.
- 9.2 Significant acceleration of corrosion can occur due to industrial contamination and corrosive atmospheres and contamination from agricultural chemicals or fertilizers. Specific design is required under these microclimatic conditions.
- 9.3 Some dark colours of coatings may experience some fading after prolonged ultraviolet (UV) exposure.

### Maintenance

- 10.1 Regular maintenance is essential for The Building Agency Alucobond® Cladding System installations to maximize the serviceable life of the system.
- 10.2 An inspection of The Building Agency Alucobond® Cladding System installations should be undertaken at least annually to determine the condition of the whole building. Items to be checked include, but are not limited to:
- Dirt – any accumulation of dirt should be washed from the surface of the panels.
  - Scratches and dents – these need to be identified and repaired.
  - Joint sealant – identify any failures and repair.

### Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Alucobond® A2 and Alucobond® Plus panels from heat sources such as fireplaces, heating appliances, flues and chimneys. Alucolux® is considered a non-combustible material and need not be separated from such heat sources. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solution C/AS1 and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

### Fire Affecting Areas Beyond the Fire Source

#### Vertical Fire Spread

- 12.1 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

- 12.2 Where the external wall is not protected by a sprinkler system or separated from the relevant boundary as required by C/AS1 or C/AS2 the Alucobond® A2 and Alucolux® cladding system will need to be installed over a Fire Resistance Rated (FRR) external wall with the required FRR.
- 12.3 The Alucobond® Plus contains materials not tested or classified as non-combustible and is therefore not suitable for use on external walls where a Fire Resistance Rating (FRR) is required.



### External Cladding Systems

- 12.4 The Alucobond® A2 achieves a Type A classification suitable for use on external walls in accordance with New Zealand Building Code Acceptable Solutions C/AS1 Table 5.3.1.1 and C/AS2 Section 5.8.
- 12.5 The Alucolux® are composed entirely of aluminium and are therefore defined non-combustible as per NZBC Acceptable Solutions C/AS1 and C/AS2 Appendix B Definitions and are suitable for use on external walls in accordance with C/AS1 Paragraph 5.3.1.1 a) and C/AS2 Section 5.8.
- 12.6 The Alucobond® Plus Panels contain materials not tested or classified as non-combustible which are suitable for use on external walls in accordance with NZBC Acceptable Solution C/AS1 Table 5.3.1.1 or C/AS2 Section 5.8.
- 12.7 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

- 13.1 The design of The Building Agency Alucobond® Cladding System is subject to the following restrictions:
- Drainage and compartmentalization of the cladding system must be at the first level down from the top of the building, and every second level after that, or every 10 m, whichever is the lesser.
  - Vertical compartmentalization with airtightness exceeding 0.1 MNs/m<sup>3</sup> is required of the cladding cavity within 500 mm of every corner, at 2 m centres after that, to a maximum of 5 m centres where cladding panels are located further than 2.5 m from any edge of the cladding, or areas where air flows are interrupted.
  - A building with wind exposure of less than 1.1 kPa ULS must have a building wrap complying with NZBC Clause E2/AS1, Table 23, or a rigid air barrier.
  - A building with exposure to wind above 1.1 kPa ULS must have building wrap or a rigid air barrier that has an airflow resistance of greater than 0.1 MNs/m<sup>3</sup>.
  - A building with exposure to wind on any part of its façade above a 1.55 kPa ULS must use a rigid air barrier as the backing for the cavity.
- 13.2 The Building Agency Alucobond® 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.
- 13.3 The cavity must be sealed off from the roof, inter-floor and sub-floor spaces to meet code compliance with NZBC Clause E2.3.5.
- 13.4 The Building Agency Alucobond® Cladding System allows excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet code compliance with NZBC Clause E2.3.6.
- 13.5 The details given in the Technical Literature for weather sealing are based on the design principle of a drained and ventilated cladding to prevent moisture entry for all joints, penetrations and junctions. 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.
- 13.6 The use of The Building Agency Alucobond® 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.

## Installation Information

### Installation Skill Level Requirement

- 14.1 Installation and finishing of components and accessories supplied by The Building Agency Limited must always be carried out in accordance with The Building Agency Alucobond® Cladding System Technical Literature and this Appraisal by trained installers, approved by The Building Agency Limited.

### Inspections

- 15.1 For inspection, reference must be made to the specific building design documentation and The Building Agency Limited's installation information.

## Basis of Appraisal

### Tests

- 16.1 A weathertightness test on The Building Agency Alucobond® Cladding System was performed at an IANZ accredited laboratory in accordance with E2/VM1. The testing assessed the performance of the vertical and horizontal panel joints, internal corner detail, external corner detail, alternative window installations, sill detail, vented/drained horizontal joint. 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 details above will meet the performance requirements of the New Zealand Building Code External Moisture Clause E2 when used within the scope of this Appraisal up to a ULS of 2.5 kPa.
- 17.1 The Alucobond® A2 has been tested in accordance with ISO 5660.1 and achieved a Type A classification, testing was carried out as per NZBC Acceptable Solution C/AS1 Appendix E Section E.5.1. and C/AS2 Appendix C C7.1

### Other Investigations

- 18.1 The technical literature specified in section 6.1 has been reviewed by BRANZ and found to be satisfactory.
- 18.2 Site inspections have been carried out to assess the practicability of installation, and to examine completed installations.
- 18.3 Opinions on structural, weathertightness and durability aspects were given by BRANZ technical experts.

### Quality

- 19.1 The manufacture of the Alucobond® A2, Alucobond® Plus and Alucolux® sheets by 3A Composites has not been examined by BRANZ, but the quality control systems of 3A Composites have been assessed and registered as meeting the requirements of ISO 9001.
- 19.2 The Building Agency Limited is responsible for the quality of product supplied.
- 19.3 Quality of panel installation on-site is the responsibility of The Building Agency Limited.
- 19.4 Designers are responsible for the building design, including structural design of the panels and fixings, and weathertightness design of penetrations.
- 19.5 Building owners are responsible for the maintenance of The Building Agency Alucobond® Cladding System in accordance with the instructions of The Building Agency Limited.



## Sources of Information

- AS/NZS 1170:2011 Structural design actions.
- AS/NZS 2728:2013 Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements.
- AS/NZS 4284:2008 Testing of building façades.
- NZS 3604:2011 Timber-framed buildings.
- ISO 5660.1: 2002 Heat release rate [cone calorimeter method].
- ISO 9223:2012 Corrosion of metals and alloys - Corrosivity of atmospheres - Classification, determination and estimation.
- NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.





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17 April 2024

THE BUILDING AGENCY  
ALUCOBOND® CLADDING  
SYSTEM



**BRANZ**

In the opinion of BRANZ, **The Building Agency Alucobond® 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 **The Building Agency 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. **The Building Agency 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 quality of work;
  - 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 **The Building Agency 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 **The Building Agency Limited** or any third party.

For BRANZ

**Claire Falck**

Chief Executive

Date of Issue:

17 April 2024