



BRANZ Appraised

Appraisal No.641 [2009]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 641 (2009)**

**NULINE™
WEATHERBOARD
CAVITY SYSTEM**

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Product

1.1 The NuLine™ Weatherboard Cavity System is an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

1.2 The system consists of horizontally fixed NuLine™ fibre cement weatherboards installed over timber battens to form the cavity, flashings and accessories and is finished with a latex paint system.

1.3 The system 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 frame with a nominal 20 mm drained cavity.



Scope

2.1 The NuLine™ Weatherboard Cavity System has been appraised as an external horizontally fixed wall cladding system for buildings within the following scope:

- the scope limitations of NZBC Acceptable System 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 System E2/AS1, Table 2; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

2.2 The NuLine™ Weatherboard Cavity System has also been appraised for weathertightness and structural wind loading when used for timber framed buildings subject to specific design up to a design differential ultimate limit state (ULS) wind pressure of 2.5 kPa.

2.3 The NuLine™ Weatherboard Cavity 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 NuLine™ Weatherboard Cavity System relies on the joinery meeting the requirements of NZS 4211 for the relevant Building Wind Zone, or being specifically designed for use in specifically designed buildings.)*

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, the NuLine™ Weatherboard Cavity 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 NuLine™ Weatherboard Cavity System meets the requirement for loads arising from self-weight, wind, impact and creep [i.e. B1.3.3 (a), (h), (j) and (q)]. See Paragraphs 9.1 – 9.3.

Clause B2 DURABILITY: Performance B2.3.1(b), 15 years, B2.3.1(c) 5 years and B2.3.2. The NuLine™ Weatherboard Cavity System meets these requirements. See Paragraphs 10.1 and 10.2.

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

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

3.2 This is an Appraisal of an **Alternative System** in terms of New Zealand Building Code compliance.

Technical Specification

4.1 System components and accessories supplied by BGC Fibre Cement (NZ) are as follows:

NuLine™ Weatherboards

- NuLine™ Weatherboards are produced with a smooth face and are pre-primed with an acrylic primer on the front face and both edges. The bottom edge of the weatherboard can be supplied with Bullnose, 9 mm Bevel or Square (3 mm chamfer) profiles. The weatherboards are 14 mm thick and are available 150, 175 and 205 mm wide. All boards are supplied 4200 mm long.
- NuLine™ Weatherboards are manufactured from a cellulose fibre cement formulation. The boards are formed, cut to length and then cured by high-pressure autoclaving. After autoclaving, the selected profile is cut on the front corner at the bottom of the weatherboards and the ends are slotted for jointing.

Accessories

- NuLine™ box corner trim - NuLine™ Weatherboards cut to suit and formed into box corners.
- External and internal corner mouldings - aluminium external box corner and 90° internal corner 'W' mould. The mouldings are available in 2700 mm lengths.
- NuLine™ jointing biscuits - PVC biscuits for the concealed off-stud jointing of NuLine™ Weatherboards.
- Concealed back soaker - Zinalume or stainless steel soaker for use behind off-stud joints in NuLine™ Weatherboards.
- Corner soakers – 90° soakers available in Zinalume, copper and stainless steel.
- BGC Edge sealer - acrylic sealer supplied in a 400 g can.

4.2 Accessories used with the NuLine™ Weatherboard Cavity System, which are supplied by the building contractor are as follows:

- Building wrap – building paper or wrap complying with NZBC Acceptable System E2/AS1 Table 23, or breather-type membranes covered by a valid BRANZ Appraisal for use as wall wraps.
- Flexible sill and jamb flashing tape – flexible flashing tapes complying with NZBC Acceptable System E2/AS1 Paragraph 4.3.11, or flexible flashing tapes covered by a valid BRANZ Appraisal for use around window and door joinery openings.
- Cavity vent strip - PVC, aluminium or stainless steel, punched with 3-5 mm holes or slots complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3.
- 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.
- Building wrap support - polypropylene strap, 75 mm galvanised mesh, galvanised wire, or additional vertical battens for securing the building wrap in place and preventing bulging of the bulk insulation into the drainage cavity. (*Note: mesh and wire galvanising must comply with AS/NZS 4534.*)
- Window and door trim cavity air seal – air seals complying with NZBC Acceptable System 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 System E2/AS1, or sealant covered by a valid BRANZ Appraisal for use as a weather sealing sealant for exterior use.
- Aluminium joinery head flashings – as supplied by the joinery manufacturer or contractor.
- Flashings – including internal corner flashing, balustrade and parapet cap flashings and inter-storey joint flashing. Refer to NZS 3604, Section 4 and NZBC Acceptable System E2/AS1, Table 20 for durability requirements.
- Timber box corners - constructed from timber treated to Hazard Class H3.1, pre-primed before installation.
- Scribes – timber treated to Hazard Class H3.1, pre-primed before installation.
- NuLine™ Weatherboard fixings (concealed nail) – 65 x 2.87 mm Paslode hot-dip galvanised, ring shank, D-head gun nail or 60 x 2.8 mm hot-dip galvanised or stainless steel ring shank flat head nails.
- NuLine™ Weatherboard fixings (face nail) – 75 x 3.15 mm hot-dip galvanised or stainless steel ring shank jolt head nails.
- Boxed corner and scribe fixings - 60 x 2.8 mm or 75 x 3.15 mm hot-dip galvanised or stainless steel ring shank jolt head nails.

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

Paint System Specification

4.4 Paint systems are not supplied by BGC Fibre Cement (NZ) and have not been assessed by BRANZ and are therefore outside the scope of this Appraisal.

4.5 All exposed faces, including top edges at sills and all bottom edges of NuLine™ weatherboards and accessories 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.

Handling and Storage

5.1 Handling and storage of all materials supplied by BGC Fibre Cement (NZ) or the building contractor, whether on site or off-site, is under the control of the building contractor. NuLine™ Weatherboards must be stacked flat, clear of the ground by a minimum of 150 mm and supported on timber bearers at maximum 300 mm centres. They must be kept dry at all times either by storing within an enclosed building or when stored externally an additional secondary cover to the plastic wrapping is required. Care must be taken to avoid damage to edges, ends and the primed surfaces. Weatherboards must always be carried on edge.

5.2 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 NuLine™ Weatherboard Cavity 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 NuLine™ Weatherboard Cavity System must be treated as required by NZS 3602.

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. Dwargs must be fitted flush between the studs at maximum 800 mm centres.

7.3 Additional framing may be required at soffits, internal and external corners and window and door openings for the support and fixing of the NuLine™ Weatherboard Cavity System.

7.4 Timber wall framing and cavity battens must have a maximum moisture content of 24% at the time of the cladding application.

7.5 Timber wall framing and cavity battens must have a maximum moisture content of 18% before the weatherboards are painted.

General

8.1 When the NuLine™ Weatherboard Cavity System is used for specifically designed buildings up to 2.5 kPa design differential ULS wind pressure, only the weathertightness aspects of the cladding and maximum framing centres are within the scope of this Appraisal. All other aspects of the building need to be specifically designed and are outside the scope of this Appraisal.

8.2 Punchings in the cavity vent strip must provide a minimum ventilation opening area of 1000 mm² per lineal metre of wall in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3(b).

8.3 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 System E2/AS1, Table 18.

8.4 At deck or roof/wall junctions, the bottom edge of the NuLine™ Weatherboard Cavity System must be kept above the top surface of any adjacent roof flashing by a minimum of 35 mm in accordance with NZBC Acceptable System E2/AS1, Paragraph 9.1.3.6.

8.5 All buildings must have barriers to airflow in the form of interior linings with all joints stopped, or alternatively, unlined gables and walls must incorporate a rigid sheathing or an air

barrier which meets the requirements of NZBC Acceptable System E2/AS1, Table 23. Where rigid sheathings are used, the cavity batten and weatherboard fixing lengths must be increased by a minimum of the thickness of the sheathing.

8.6 Where cladding penetrations are wider than the cavity batten spacing, allowance must be made for airflow between adjacent cavities by leaving a minimum gap of 10 mm between the bottom of the cavity and the flashing to the opening.

8.7 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.

Inter-storey Junctions

8.8 Inter-storey junctions must be constructed in accordance with the Technical Literature. Inter-storey joints must be provided for walls over 2-storeys in height in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4(b).

Structure

Mass

9.1 The mass of the 150 mm wide NuLine™ weatherboard when installed on the wall is 27.9 kg/m² at equilibrium moisture content (EMC). The mass of the 175 mm wide board is 26.5 kg/m² at EMC and the mass of the 205 mm wide board is 25.7 kg/m² at EMC. NuLine™ weatherboard is therefore considered a light wall cladding in terms of NZS 3604.

Impact Resistance

9.2 The NuLine™ Weatherboard Cavity System has good 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 should be considered for vulnerable areas.

Wind Zones

9.3 The NuLine™ Weatherboard Cavity System is suitable for use in all Building Wind Zones of NZS 3604, up to and including 'Very High' where buildings are designed to meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 1.1, or up to 2.5 kPa design differential ULS wind pressure where buildings are specifically designed.

Durability

10.1 The NuLine™ Weatherboard Cavity System meets the performance requirements of NZBC Clause B2.3.1 (b), 15 years for the NuLine™ weatherboards and flashings, and the performance requirements of NZBC Clause B2.3.1 (c), 5 years for the exterior paint system.

Serviceable Life

10.2 NuLine™ Weatherboard Cavity System installations are expected to have a serviceable life of at least 30 years provided the system is maintained in accordance with this Appraisal, and the NuLine™ weatherboards and fixings are continuously protected by a weathertight coating and remain dry in service. NuLine™ Weatherboards must be painted within 3 months of fixing.

Maintenance

11.1 Regular maintenance is essential to ensure the performance requirements of the NZBC are continually met and to ensure the maximum serviceability of the system.

11.2 Regular cleaning (at least annually) of the paint coating is required to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Grime may be removed by brushing with a soft brush, warm water and detergent. Paint systems must be recoated at approximately 7 – 10 yearly intervals in accordance with the paint manufacturer's instructions.

11.3 Annual inspections must be made to ensure that all aspects of the cladding system, including the paint coating 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 and paint coatings must be repaired in accordance with the relevant manufacturer's instructions.

11.4 Minimum ground clearances as set out in this Appraisal and the Technical Literature must be maintained at all times during the life of the system. *(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 NuLine™ Weatherboard Cavity System.)*

Control of External Fire Spread

12.1 The NuLine™ Weatherboard Cavity System has a performance level A in accordance with NZBC C/AS1 Table 7.5. The system is suitable for use as an external wall cladding system on buildings in all Purpose Groups, at any distance to the boundary.

Outbreak of Fire

13.1 When NuLine™ weatherboards are finished with a paint coating of not more than 1.0 mm in thickness, clearance separations from chimneys and flues are not required. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated from chimneys and flues in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

External Moisture

14.1 The NuLine™ Weatherboard Cavity System, when installed in accordance with this Appraisal and the Technical Literature will prevent 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 code compliance with NZBC Clause E2.3.5.

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

14.4 The details given in the Technical Literature for weather sealing are based on the 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 NuLine™ Weatherboard Cavity System, where there is a designed cavity drainage path for moisture that penetrates the cladding, does not reduce the requirements for junctions, penetrations, etc to remain weather resistant.

Internal Moisture

15.1 Buildings must be constructed with an adequate combination of thermal resistance and ventilation, and space temperature must be provided to all habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or may accumulate.

Water Vapour

15.2 The NuLine™ Weatherboard Cavity System is not a barrier to the passage of water vapour, and when installed in accordance with this Appraisal will not create a risk of moisture damage resulting from condensation.

Installation Information

Installation Skill Level Requirements

16.1 Installation and finishing of the NuLine™ Weatherboard Cavity System must be completed by competent, experienced tradespersons with an understanding of fibre cement weatherboard installation, in accordance with instructions given within the NuLine™ Weatherboard Cavity System Technical Literature and this Appraisal.

System Installation

Building Wrap and Flexible Sill and Jamb Tape Installation

17.1 The selected building wrap and flexible sill and jamb tape system must be installed by the building contractor in accordance with the wrap and tape manufacturer's instructions prior to the installation of the rest of the NuLine™ Weatherboard Cavity System. Building wrap must be installed horizontally and be continuous around corners. The wrap must be lapped 75 mm minimum at horizontal joints and 150 mm minimum over studs at vertical joints. Particular attention must be paid to the installation of the building wrap 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 building wrap to the wall framing at maximum 600 mm centres where the studs are at 600 mm centres, or at 400 mm centres when studs are at 400 mm centres. The battens must be fixed in place with 40 x 2.8 mm hot-dip galvanised flat-head nails at maximum 800 mm centres.

17.3 Where studs are at greater than 400 mm centres, a building wrap support must be installed over the building wrap between the cavity battens at maximum 300 mm centres.

NuLine™ Weatherboard Installation

17.4 NuLine™ weatherboards may be cut on site by 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.

17.5 Weatherboards must be dry prior to installation. Before the weatherboards are installed, cut ends and the back face of the bottom course must be sealed with BGC edge sealer or an acrylic sealer to reduce the absorbency of the fibre cement.

17.6 NuLine™ weatherboards must be installed starting at the bottom of the wall. A cant strip (H3.1 treated timber or fibre cement) must be fixed behind the bottom course of weatherboards to ensure the weatherboards are set at the correct angle. The cant strip must be continuous around the perimeter of the building. The bottom course of weatherboards must overhang the bottom plate by a minimum of 50 mm.

17.7 Before the weatherboards are installed, the corner detail must be prepared to suit the selected option, e.g. external box corner, corner soaker. The necessary flashings must be installed before commencing weatherboard fixing.

17.8 The first course of weatherboards must be full length, i.e. 4200 mm and commence from an external corner. Jointing of NuLine™ weatherboards is made off the stud using the NuLine™ jointing biscuit and the concealed back soaker. Off-stud joints may be located centrally between the studs, but must be no closer than 100 mm to the edge of a stud. A bead of sealant must be applied to adhere the concealed back soaker to the NuLine™ weatherboard, and to the front side of the joint before the corresponding board is inserted. Subsequent courses of weatherboards must be installed so that the vertical weatherboard joints are staggered by 600 mm minimum from joints in the previous course.

17.9 NuLine™ weatherboards must have a minimum lap of 30 mm, and should be set out so as near to a full board as possible will finish under and over windows and doors and at the top of the wall. A storey rod can be used to accurately position weatherboard courses.

17.10 NuLine™ weatherboards must be fixed to each stud using concealed fixings behind the lap of the boards and face nailing through both board thicknesses.

17.11 Concealed fixing must be carried out using 65 x 2.87 mm Paslode hot-dip galvanised, ring shank, D-head gun nail or 60 x 3.15 mm hot-dip galvanised or stainless steel ring shank flat head nails. Nails must be fixed 25 mm from the top edge of the board and must be driven flush with the board surface.

17.12 Face nailing must be carried out using 75 x 3.15 mm hot-dip galvanised or stainless steel ring shank jolt head nails. Nails must be fixed 15 mm up from the bottom of the board and punched a maximum of 2 mm below the surface of the board. The weatherboards must be pre-drilled for face nailing.

17.13 Concealed nails must not be located closer than 50 mm to the end of the board. Face nails must not be located closer than 20 mm from the end of the board. Except for off-stud joints, NuLine™ weatherboards must be fixed a maximum of 100 mm from the end of the board.

Window and Door Joinery Installation

17.14 Aluminium window and door joinery and associated head flashings must be installed by the building contractor in accordance with the Technical Literature. A 7.5 – 10 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.

17.15 After installing the window and door joinery, scribes must be installed in accordance with the Technical Literature to provide additional weatherproofing for the joinery/weatherboard junction.

Finishing

17.16 The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. NuLine™ weatherboards must be painted as soon as practicable (maximum 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.

Inspection

17.17 The Technical Literature must be referred to during the inspection of NuLine™ Weatherboard Cavity System installations.

Health and Safety

18.1 Cutting of NuLine™ weatherboard must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.

18.2 When power tools are used for cutting, grinding or forming holes, health and safety measures as set out in the Technical Literature must be observed because of the amount of dust generated.

18.3 Safe use and handling procedures for NuLine™ weatherboard and the components that make up the cladding system are provided in the relevant manufacturer's Technical Literature.

Basis of Appraisal

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

19.1 BRANZ expert opinion on NZBC E2 code compliance for the NuLine™ Weatherboard Cavity System was based on testing and evaluation of all details within the scope and as stated within this Appraisal. The testing assessed the performance of the foundation detail, window head, jamb and sill details, meter box head, jamb and sill details, vertical and horizontal weatherboard joints, internal and external corners. 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 solution will meet the performance levels of Acceptable Solution E2/AS1 for cavity-based weatherboard claddings.

19.2 Wind face load testing for the NuLine™ Weatherboard Cavity System. BRANZ determined design wind suction pressures, and by comparing these pressures with the NZS 3604 design wind speeds and AS/NZS 1170 pressure coefficients, the fixing requirements were determined for timber framed walls.

19.3 Cone Calorimeter testing to determine the peak rate of heat release and total heat release of NuLine™ weatherboard was completed by BRANZ. The testing was carried out in accordance with AS/NZS 3837.

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

19.5 Site visits have been carried out to assess the practicability of installation and to examine completed installations.

19.6 The Technical Literature for the NuLine™ Weatherboard Cavity System has been examined by BRANZ and found to be satisfactory.

Quality

20.1 The manufacture of NuLine™ weatherboards has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and 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 BGC Fibre Cement (NZ) is the responsibility of BGC Fibre Cement (NZ).

21.3 The quality management system of the NuLine™ weatherboard manufacturer, BGC (Australia) Pty Ltd, has been assessed and registered as meeting the requirements of ISO 9001: 2000 by SAI Global, Registration Number QEC 2955/13.

21.4 Quality of installation on site of components and accessories supplied by BGC Fibre Cement (NZ) and the building contractor is the responsibility of the installer.

21.5 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, airseals and the NuLine™ Weatherboard Cavity System in accordance with the instructions of BGC Fibre Cement (NZ).

21.6 Sub trades are responsible for the installation of penetrations, flashing etc that are relevant to their trade in accordance with the NuLine™ Weatherboard Cavity System Technical Literature.

21.7 Building owners are responsible for the maintenance of the NuLine™ Weatherboard Cavity System in accordance with the instructions of BGC Fibre Cement (NZ).

Sources of Information

- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 1170: 2002 Structural design action - General principles.
- AS/NZS 3837: 1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter.
- AS/NZS 4680:2006 Hot-dip galvanized (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 3604:1999 Timber framed buildings.
- NZS 4211:1985 Specification for performance of windows.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005.
- New Zealand Building Code Handbook Department of Building and Housing, Third Edition May 2007.
- The Building Regulations 1992, up to, and including June 2007 Amendment.



BRANZ

In the opinion of BRANZ, NuLine™ Weatherboard Cavity 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 BGC Fibre Cement (NZ), 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. **BGC Fibre Cement (NZ):**
 - 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.
3. 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.
4. 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 **BGC Fibre Cement (NZ)**.
5. 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.
6. BRANZ provides no certification, guarantee, indemnity or warranty, to **BGC Fibre Cement (NZ)** or any third party.

For BRANZ

P Burghout
Chief Executive

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