



**BRANZ Appraised**

Appraisal No.721 [2011]

BRANZ Appraisals

Technical Assessments of products  
for building and construction

**BRANZ  
APPRAISAL  
No. 721 (2011)**

Amended 24 May 2013

**BGC DURABARRIER  
RIGID AIR BARRIER**

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## Product

1.1 BGC Durabarrier Rigid Air Barrier is a sealed fibre cement sheet designed for use as a rigid wall underlay behind wall cladding systems and as a bracing system to resist wind and earthquake loads on timber framed buildings.



## Scope

2.1 BGC Durabarrier Rigid Air Barrier has been appraised for use as a rigid wall underlay and temporary weather-protecting sheathing on timber framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- with absorbent wall claddings directly fixed to framing; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZS 3604; and,
- situated in NZS 3604 Wind Zones up to, and including 'Extra High'.

2.2 BGC Durabarrier Rigid Air Barrier has also been appraised for use as a rigid wall underlay and temporary weather-protecting sheathing 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,
- situated in specific design wind pressures up to a maximum design differential ultimate limit state (ULS) of 2.5 kPa.

2.3 BGC Durabarrier Rigid Air Barrier has also been appraised for use as wall bracing systems for timber framed buildings within the scope of NZS 3604.

## Building Regulations

### New Zealand Building Code (NZBC)

**3.1 In the opinion of BRANZ, BGC Durabarrier Rigid Air Barrier, if used, designed, 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. BGC Durabarrier Rigid Air Barrier meets the requirements for loads arising from earthquake and wind [i.e. B1.3.3 (f) and (h)]. See Paragraphs 8.1 - 8.6.

**Clause B2 DURABILITY:** Performance B2.3.1(a), not less than 50 years, B2.3.1(b), 15 years and B2.3.2. BGC Durabarrier Rigid Air Barrier meets these requirements. See Paragraphs 9.1 - 9.3.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. When used as part of the cladding system, BGC Durabarrier Rigid Air Barrier will contribute to meeting this requirement. See Paragraphs 13.1 and 12.2.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. BGC Durabarrier Rigid Air Barrier meets this requirement and will not present a health hazard to people.

3.2 BGC Durabarrier Rigid Air Barrier is an Acceptable Solution rigid wall underlay material in terms of compliance with NZBC Acceptable Solution E2/AS1, Table 23. This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

3.3 BGC Durabarrier Rigid Air Barrier can be used to satisfy the bracing demand requirements of Section 5 of NZS 3604 which is an NZBC Compliance Document.

- Bracing panel end straps - 25 x 1.0 mm hot-dip galvanised or stainless steel strap.
- End strap fixings - 30 x 2.5 mm hot-dip galvanised flat head nails.
- Timber floor end stud hold down – 100 x 4.0 mm hot-dip galvanised flat head nails.
- Concrete floor end stud hold down - M12 x 150 mm minimum hot-dip galvanised bolts with 50 x 50 x 3 mm hot-dip galvanised washer or proprietary anchors with a minimum characteristic pull-out strength of 15 kN.

### 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. BGC Durabarrier 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 providing waterproof covers to the stack. Care must be taken to avoid damage to edges, ends and surfaces. The lining must always be carried on edge. uPVC flashings and jointers must be protected from direct sunlight and physical damage, and should be stored flat and under cover.

5.2 Other accessories must be stored so they are kept clean, dry and undamaged.

## Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for BGC Durabarrier Rigid Air Barrier. 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 BGC Durabarrier Rigid Air Barrier 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 situated in all NZS 3604 defined Wind Zones and up to a design differential ultimate limit state (ULS) wind pressure of 2.5 kPa. Dwargs must be fitted flush between the studs at maximum 800 mm centres. (*Note: The timber framing must also be suitable for the selected wall cladding. Refer to the selected cladding system's Technical Literature for specific framing requirements.*)

7.3 Timber wall framing where BGC Durabarrier Rigid Air Barrier is joined must be nominal 50 mm width (i.e. 45 mm

## Technical Specification

4.1 System components and accessories for BGC Durabarrier Rigid Air Barrier, which are supplied by BGC Fibre Cement (NZ) are:

#### BGC Durabarrier Rigid Air Barrier

- BGC Durabarrier Rigid Air Barrier is available as 4.5 mm and 6.0 mm thick fibre cement sheets, manufactured from a cellulose fibre cement formulation. It is produced in sheet material form with 'Durabarrier' printed on the front face. The sheets are formed, cut to length, and then cured by high pressure autoclaving. The sheet is coated on the front face and four edges with a light green tinted water repellent sealer.
- BGC Durabarrier Rigid Air Barrier is available in sizes of 1200 mm wide and 2400 and 3000 mm long. It is manufactured to conform to the requirements of AS/NZS 2908.2.

#### Accessories

4.2 System components and accessories for BGC Durabarrier Rigid Air Barrier, which are supplied by the building contractor are:

- Horizontal flashing - uPVC, galvanised steel or aluminium.
- Flexible sill and jamb flashing tape system - AluBand (Thermakraft Industries (N.Z.) Ltd) and Protecto Sill (Marshall Waterproofing NZ/AUS Ltd).
- Joint sealing tape - 75 mm wide AluBand and 75 mm wide Protecto Sill.
- BGC Durabarrier Rigid Air Barrier sheet fixing - Paslode 32 x 3.06 mm ring shank stainless steel collation type gun nails with a 9 mm diameter head, Paslode 32 x 3.06 mm hot-dip galvanised collation type gun nails with a 9 mm diameter head, 40 x 2.8 mm hot-dip galvanised fibre cement nails, or 40 x 2.8 mm stainless steel ring shanked fibre cement nails.

minimum finished width).

7.4 Timber framing must have a maximum moisture content of 20% at the time of the BGC Durabarrier Rigid Air Barrier application. *(Note: If BGC Durabarrier Rigid Air Barrier is fixed to framing with a moisture content of greater than 20% problems may occur at a later date due to excessive timber shrinkage.)*

#### BGC Durabarrier Rigid Air Barrier Set Out

7.5 BGC Durabarrier Rigid Air Barrier must be installed vertically and must be jointed on-stud only.

7.6 At the base of the wall, the lining must hang below the bottom plate a minimum of 15 mm, up to a maximum of 40 mm.

#### General

7.7 BGC Durabarrier Rigid Air Barrier is intended for use as a rigid wall underlay fixed over timber framed walls in order to support the wind pressures, and to act as a secondary barrier to wind-driven rain.

7.8 Commencing from installation, BGC Durabarrier Rigid Air Barrier must not be exposed to the weather for more than 90 days.

7.9 BGC Durabarrier Rigid Air Barrier may be used as a temporary weather protecting sheathing to allow the internal lining of the building to proceed before the wall cladding is installed. To achieve temporary weathertightness, all joints, internal and external corners of the BGC Durabarrier Rigid Air Barrier must be sealed, the roof cladding and soffit linings must be installed, the flexible sill and jamb flashing tape system must be installed around the window and door openings, and the window and door joinery must be installed complete with head flashings and airseals. The timber wall framing must have a maximum moisture content as specified by the internal lining system supplier at the time of the insulation installation and internal lining application.

7.10 When used in accordance with this Appraisal and the Installation Manual, 6.0 mm BGC Durabarrier Rigid Air Barrier can be used to meet the wall bracing element requirements of NZS 3604, for timber framed buildings not requiring specific design. The Technical Literature contains details of the construction of the various bracing systems and the bracing unit ratings achieved for each system. The bracing types and ratings are also given within Table 3.

7.11 BGC Durabarrier Rigid Air Barrier is suitable for use under wall claddings as a rigid wall underlay as called up in NZBC Acceptable Solution E2/AS1, Table 23 on timber framed buildings, except that non-absorbent claddings must not be installed directly over the BGC Durabarrier Rigid Air Barrier. Refer to Table 1.

**Table 1: NZBC E2/AS1 Table 23 Requirements**

NZBC E2/AS1 Table 23 Rigid Sheathing Properties	Property Performance Requirement	BGC Durabarrier Rigid Air Barrier Actual Property Performance
Surface Absorbency	≥ 100 g/m <sup>2</sup>	Pass
Vapour Resistance	≤ 7 MN s/g	0.6 MN s/g
Water Resistance	≥ 20 mm	Pass

## Structure

### Mass

8.1 The mass of BGC Durabarrier Rigid Air Barrier is approximately 7.1 kg/m<sup>2</sup> for 4.5 mm thickness and 9.5 kg/m<sup>2</sup> for 6.0 mm thickness at equilibrium moisture content. This mass must be added to the selected wall cladding system mass when determining the overall wall cladding mass in terms of NZS 3604.

### Wind Zones

8.2 BGC Durabarrier Rigid Air Barrier is suitable for use in all Wind Zones of NZS 3604, up to, and including, 'Extra High'. BGC Durabarrier Rigid Air Barrier can also be used on timber framed buildings, subject to specific design up to a design differential ultimate limit state (ULS) wind pressure of 2.5 kPa. The sheets must be fixed at centres as specified in Table 2. These spacings do not apply for bracing systems, see Paragraphs 8.4 - 8.5. The fixings must be positioned a minimum of 12 mm from all sheet edges, and a minimum of 50 mm from sheet corners. The fastener heads must finish flush with the sheet surface.

**Table 2: BGC Durabarrier Fixing Centres**

NZS 3604 Building Wind Zone	Fixing Centres to Studs, Plates and Dwargs	
	BGC Durabarrier 4.5 mm	BGC Durabarrier 6.0 mm
Low	300 mm	300 mm
Medium	300 mm	300 mm
High	200 mm	300 mm
Very High	200 mm	200 mm
<2.5kPa	150 mm	200 mm
Bracing	N/A	150 mm

8.3 The length of the selected wall cladding fixing must be increased by minimum 6 mm to maintain the face load strength of the wall cladding system.

### Bracing

8.4 The bracing units achieved (wind and earthquake) when using 6.0 mm thick BGC Durabarrier Rigid Air Barrier are given in Table 3. Sheet fixings must be maximum 150 mm centres to all framing. The Technical Literature gives details of edge and end fixing distances. The BGC Durabarrier Rigid Air Barrier Technical Literature provides comprehensive construction and panel hold-down details.

8.5 The bracing units are derived from the BRANZ P21 test method based on a wall height of 2.4 m. For any other wall height, the bracing rating can be calculated by multiplying the appropriate value by 2.4 and dividing by the wall height in metres, except that panels less than 1.8 m high must be rated as if they were 1.8 m high.

**Table 3: Bracing Ratings for 6.0 mm BGC Durabarrier Rigid Air Barrier**

System Number	Minimum Bracing Element Length (mm)	End Straps Required	Hold-downs Required	Flooring Construction		BU Per Metre	
				Timber	Concrete	Wind	Earthquake
BGC-DB1	1200	Yes	2/100 x 4.0 mm FH nails at maximum 600mm crs	✓		130	110
BGC-DB2	2400	No	2/100 x 4.0 mm FH nails at maximum 600mm crs	✓		95	65
BGC-DB3	1200	Yes	M12 x 150mm bolt with 50 x 50 x 3 mm square washer, or proprietary anchor with 15kN pull out strength		✓	130	110
BGC-DB4	2400	No	M12 x 150mm bolt with 50 x 50 x 3 mm square washer, or proprietary anchor with characteristic 15kN pull out strength		✓	95	65

Note: Bracing ratings are applicable for 6.0 mm BGC Durabarrier Rigid Air Barrier fixed at maximum 150 mm centres with 40 x 2.8 mm stainless steel ring shanked nails.

#### Penetrations for Services

8.6 Holes up to 100 x 100 mm positioned no closer than 200 mm to the edge of a sheet or to another hole, may be allowed for services in BGC Durabarrier Rigid Air Barrier without affecting the bracing rating of the panel.

#### Durability

9.1 BGC Durabarrier Rigid Air Barrier meets code compliance with NZBC Clause B2.3.1 (a), not less than 50 years when used for bracing or where the cladding durability requirement or expected serviceable life is not less than 50 years, e.g. behind masonry veneer, and code compliance with NZBC Clause B2.3.1 (b), 15 years where the cladding durability requirement is 15 years.

#### Serviceable Life

9.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 90 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, BGC Durabarrier Rigid Air Barrier is expected to have a serviceable life of at least 50 years.

9.3 Coastal locations can be very corrosive to fasteners, especially locations within distances of up to 500 m from the sea including harbours, or 100 metres from tidal estuaries and sheltered inlets, and otherwise as shown in NZS 3604 Figure 4.2. These coastal locations are defined in NZS 3604 as Zone D. To achieve a 50 year serviceable life in Zone D, BGC Durabarrier sheets must be fixed with stainless steel or protected hot-dip galvanised steel fasteners. Fasteners outside Zone D may be hot-dip galvanised steel. In all corrosion zones where BGC Durabarrier Rigid Air Barrier is used to achieve wall bracing, it must be fixed with stainless steel fasteners.

9.4 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 BGC Durabarrier 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

10.1 BGC Durabarrier Rigid Air Barrier will not normally require maintenance. However, if damage occurs to the cladding or lining protecting the BGC Durabarrier Rigid Air Barrier or to the BGC Durabarrier Rigid Air Barrier itself, the repairs or replacement must be carried out to ensure the integrity of the rigid wall underlay or wall bracing system.

#### Prevention of Fire Occurring

11.1 Separation or protection must be provided to BGC Durabarrier Rigid Air Barrier from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

#### Control of External Fire Spread

##### Surface Spread of Flame

12.1 The surface spread of flame characteristics of the external wall cladding will determine the maximum building height, Risk Group and boundary distance where construction is permitted. Refer to NZBC Acceptable Solution C/AS1 – C/AS7 Part 7.

##### FRRs of External Walls

12.2 BGC Durabarrier Rigid Air Barrier can be used for load-bearing and non-load-bearing walls to provide passive fire protection. Fire Resistance Ratings (FRR) of up to 30/30/30 can be achieved with the system. Construction details are contained in the Technical Literature and must be strictly followed to obtain the required Fire Resistance Rating.

## External Moisture

13.1 BGC Durabarrier Rigid Air Barrier must be used behind claddings that meet the performance requirements of NZBC Clause E2.

13.2 BGC Durabarrier Rigid Air Barrier, when installed in accordance with the Technical Literature and this Appraisal, will assist in the total cladding system's compliance with NZBC Clause E2.

## Installation Information

### Installation Skill Level Requirements

14.1 Installation must always be carried out in accordance with the BGC Durabarrier Rigid Air Barrier Technical Literature and this Appraisal, by competent tradespersons with an understanding of rigid wall underlay and wall bracing system installation.

### System Installation

#### BGC Durabarrier Rigid Air Barrier Installation

15.1 BGC Durabarrier Rigid Air Barrier 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.

15.2 Durabarrier sheets must be dry prior to installation. Cut sheet edges that are left exposed must be sealed prior to installation.

15.3 Prior to fixing BGC Durabarrier Rigid Air Barrier as wall bracing, a check must be made to ensure all sheet edges will be supported by framing. BGC Durabarrier Rigid Air Barrier when used as a rigid wall underlay only must be jointed on-stud using a joint sealing tape.

15.4 BGC Durabarrier Rigid Air Barrier must be fixed to the timber framing with Paslode 32 x 3.06 mm ring shank stainless steel collation type gun nails with a 9 mm diameter head, Paslode 32 x 3.06 mm hot-dip galvanised collation type gun nails with a 9 mm diameter head, 40 x 2.8 mm hot-dip galvanised fibre cement nails, or 40 x 2.8 mm stainless steel ring shanked fibre cement nails. Refer to Table 2 for fixing centres and Paragraphs 9.3 and 9.4 for material selection.

15.5 Durabarrier sheets must be installed vertically with a 1-2 mm gap between the sheet edges. Sheets at horizontal joints between floor levels must be installed with a minimum 10 mm gap between the sheet edges and must be supported over horizontal framing. Sheets at inter-storey floor levels must not be fixed to inter-storey joists or blocking and must have a minimum 15 mm gap between the sheet edges at this point to allow for shrinkage of the framing. All horizontal joints must be flashed with a uPVC flashing.

15.6 Any damaged areas of BGC Durabarrier Rigid Air Barrier, such as holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with joint sealing tape.

#### Joint Sealing Tape Installation

15.7 All vertical sheet joints, internal and external corners must be covered with Aluband or Protecto Sill joint sealing tape. The manufacturer's instructions regarding the application temperatures for the joint sealing tapes, and the requirements for the use of adhesive primer must be followed.

15.8 The BGC Durabarrier Rigid Air Barrier must be cleaned of dust and other surface contaminants prior the application of the joint sealing tape to ensure adequate adhesion is achieved.

## Flexible Sill and Jamb Tape Installation

15.9 The selected flexible sill and jamb tape flashing system must be installed in accordance with the tape manufacturer's instructions, except where varied by the BGC Durabarrier Rigid Air Barrier Installation Manual. Particular attention must be paid to the installation of the sill and jamb tapes around window and door joinery openings to ensure all exposed timber wall framing in the opening is protected.

### Inspections

15.10 The Technical Literature must be referred to during the inspection of BGC Durabarrier Rigid Air Barrier installations.

### Health and Safety

16.1 Cutting of BGC Durabarrier Rigid Air Barrier must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.

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

16.3 Safe use and handling procedures for BGC Durabarrier Rigid Air Barrier and the components that make up the cladding system are provided in the relevant manufacturer's Installation Manual.

## Basis of Appraisal

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

### Tests

17.1 Racking tests were carried out by BRANZ in accordance with BRANZ Technical Paper P21. The earthquake and wind bracing ratings were determined using the evaluation procedures outlined in BRANZ Technical Recommendation No. 10.

17.2 Testing has been carried out by BRANZ to determine the face load pressure resistance of BGC Durabarrier Rigid Air Barrier.

17.3 Fastener pull-through tests were completed to determine the suitability of alternative nail fixings.

17.4 The resistance of BGC Durabarrier Rigid Air Barrier to water vapour transmission in accordance with AS/NZS 4200.1 and resistance to water penetration in accordance with AS/NZS 4201.4 has been completed by BRANZ.

### Other Investigations

18.1 Structural and durability opinions were given by BRANZ technical experts.

18.2 BRANZ expert opinion on NZBC E2 code compliance for BGC Durabarrier Rigid Air Barrier was based on evaluation of all details within the scope and 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 Acceptable Solution E2/AS1 for rigid sheathings.

18.3 Site inspections were carried out by BRANZ to assess the practicability of installation.

18.4 The Technical Literature for BGC Durabarrier Rigid Air Barrier has been examined by BRANZ and found to be satisfactory.



## Quality

19.1 The manufacture of BGC Durabarrier Rigid Air Barrier 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.

19.2 The quality of materials, components and accessories supplied by BGC Fibre Cement (NZ) is the responsibility of BGC Fibre Cement (NZ). The quality control system of the Durabarrier sheet supplier, BGC (Australia) Pty Ltd, has been assessed and registered as meeting the requirements of ISO 9001:2008 by SAI Global, Registration Number QEC 2955/13.

19.3 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.

19.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the framing systems, uPVC flashings, joint seal tapes and flexible sill and jamb tape systems in accordance with the instructions of BGC Fibre Cement (NZ).

## Sources of Information

- AS/NZS 1170: 2002 Structural design action – General principles.
- AS/NZS 2908.2: 2000 Cellulose-cement products - Flat sheet.
- AS/NZS 4200.1: 1994 Pliable building membranes and underlays - materials.
- AS/NZS 4201.4: 1994 Pliable building membranes and underlays - Methods of test – Resistance to water penetration.
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber Structures Standard.
- NZS 3604: 2011 Timber-framed buildings.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005 (Amendment 5, 1 August 2011).
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

### Amendment No. 1, dated 31 January 2012.

This Appraisal has been amended to update clause changes as required by the introduction of NZS 3604: 2011 and NZBC Acceptable Solution E2/AS1 Third Edition, Amendment 5. The bracing ratings have been amended, after being re-evaluated in accordance with NZS 3604: 2011.

### Amendment No. 2, dated 24 May 2013.

This Appraisal has been amended to update clause changes as required by the introduction of NZBC Fire Clauses C1 – C6 Protection from Fire and A3 Building Importance Levels.



# BRANZ

**In the opinion of BRANZ, BGC Durabarrier Rigid Air Barrier 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.
  - 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 **BGC Fibre Cement (NZ)**.
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 **BGC Fibre Cement (NZ)** or any third party.

For BRANZ

P Burghout  
Chief Executive

Date of issue: 16 March 2011