BRANZ Appraised
Appraisal No.611 [2011]

BRANZ Appraisals

Technical Assessments of products for building and construction

BRANZ APPRAISAL No. 611 (2011)

This Appraisal replaces BRANZ Appraisal No. 611 (2008)

Amended 15 December 2014

JAMES HARDIE RIGID AIR BARRIERS

James Hardie New Zealand
PO Box 12-070
Penrose
Auckland

Tel: 0800 808 868
Fax: 0800 808 988
Web: www.jameshardie.co.nz

BRANZ
BRANZ Limited
Private Bag 50 908
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz

Product

1.1 James Hardie Rigid Air Barriers are a range of rigid wall underlay materials including RAB® Board and HomeRAB® Pre-Cladding. They are sealed fibre cement sheets designed for use as rigid wall underlay behind wall cladding systems. HomeRAB® Pre-Cladding and RAB® Board are manufactured using a medium density fibre cement formulation.

Scope

2.1 HomeRAB® Pre-Cladding 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 with regards to building height and floor plan area; and,
- with absorbent wall claddings directly fixed to framing; and,
- with non-absorbent wall claddings directly fixed to framing with a flexible wall underlay over the HomeRAB® Pre-Cladding; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1; and,
- situated in NZS 3604 Wind Zones up to, and including Very High.

2.2 RAB® Board 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 with regards to building height and floor plan area; and,
- Importance level I to V buildings as defined in AS/NZS 1170; and,
- constructed with timber framing, or timber frame infill complying with the NZBC; and,
- with absorbent wall claddings directly fixed to framing; and,
- with non-absorbent wall claddings directly fixed to framing with a flexible wall underlay over the RAB® Board; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1; and,
- when used in conjunction with wall cladding systems subjected to maximum wind pressures for structural and weathertightness design of 1.0 kPa Serviceability Limit State (SLS) and 1.5 kPa Ultimate Limit State (ULS) where studs are at maximum 600mm centres, and 3.0 kPa SLS and 4.5 kPa ULS where studs are at maximum 400 mm centres.

2.3 All buildings outside the scope of NZBC Acceptable Solution E2/AS1 incorporating RAB® Board must be subject to specific engineering and weathertightness design. Building designers are responsible for the frame design and for the incorporation of RAB® Board into their design in accordance with the instructions of James Hardie New Zealand.

(Note: James Hardie Rigid Air Barriers can be used to provide structural bracing. RAB® Board can also be used in fire resistance rated construction. These aspects have not been assessed by this Appraisal and are outside its scope.)

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, James Hardie Rigid Air Barriers, 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. James Hardie Rigid Air Barriers meet the requirements for loads arising from earthquake and wind [i.e. B1.3.3 (f) and (h)]. See Paragraphs 8.1 - 8.5.

Clause B2 DURABILITY: Performance B2.3.1(a), not less than 50 years, B2.3.1(b), 15 years and B2.3.2. James Hardie Rigid Air Barriers meet these requirements. See Paragraphs 9.1 - 9.3.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the cladding system, James Hardie Rigid Air Barriers will contribute to meeting this requirement. See Paragraphs 12.1 and 12.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. James Hardie Rigid Air Barriers meet this requirement and will not present a health hazard to people.

3.2 RAB® Board 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 rigid wall underlay material for HomeRAB® Pre-Cladding and an Alternative Solution installation method for both products in terms of the New Zealand Building Code compliance.

Technical Specification

4.1 System components and accessories for James Hardie Rigid Air Barriers, which are supplied by James Hardie New Zealand are:

HomeRAB® Pre-Cladding

- HomeRAB® Pre-Cladding is a 4.5 mm thick fibre cement sheet, manufactured from a cellulose fibre cement formulation. It is produced in sheet material form with 'HomeRAB' 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 green tinted water repellent sealer.
- HomeRAB® Pre-Cladding is available in sizes of 1200 mm wide and 2450 and 2750 mm long. It is manufactured to conform to the requirements of AS/NZS 2908.2.

RAB® Board

- RAB® Board is a 6.0 mm thick fibre cement sheet, manufactured from a cellulose fibre cement formulation. It is produced in sheet material form. 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 green tinted water repellent sealer.
- RAB® Board is available in sizes of 1200 mm wide and 2450 and 3000 mm long. It is manufactured to conform to the requirements of AS/NZS 2908.2.

Accessories

- HomeRAB® Pre-Cladding and RAB® Board horizontal flashings - uPVC, available in 3000 mm lengths.
- Inseal® 3259 joint sealing tape - black, compressible, medium density PVC (Polyvinyl Chloride) closed cell foam. The foam is coated on one side with pressure sensitive acrylic adhesive and the other face is covered by a silicone release paper. The tape is 1.5 mm thick and is supplied in rolls 50 and 80 mm wide and 50 m long.

4.2 System components and accessories for James Hardie Rigid Air Barriers, which are supplied by the building contractor are:

- Joint sealing tape and flexible sill and jamb flashing tape system - 3M™ All Weather Flashing Tape 8067 (3M New Zealand Ltd), Protecto Sill (Marshall Innovations Ltd), and Super-Stick (Marshall Innovations Ltd).
- HomeRAB® Pre-Cladding and RAB® Board sheet fixing – gun driven 50 x 2.8 mm hot-dip galvanised or ring shank stainless steel round head nails, or hand driven 40 x 2.8 mm hot-dip galvanised or ring shank stainless steel HardieFlex™ nails. *(Note: Hot-dip galvanising must comply with AS/NZS 4680 and stainless steel must be Grade 304 or 316.)*

Handling and Storage

5.1 Handling and storage of all materials supplied by James Hardie New Zealand or the building contractor, whether on site or off site, is under the control of the building contractor. James Hardie Rigid Air Barriers 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 sheathing 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 Installation Manual for James Hardie Rigid Air Barriers. The Installation Manual must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Installation Manual and within the scope of this Appraisal must be followed.

Design Information

Framing

Timber Treatment

7.1 Timber wall framing behind James Hardie Rigid Air Barriers must be treated as required by NZBC Acceptable Solution B2/AS1.

Timber Framing

7.2 For HomeRAB® Pre-Cladding installations, 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. Dwangs must be fitted flush between the studs at maximum 1200 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 For RAB® Board installations, 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 considering local factors. In all cases studs must be at maximum 600 mm centres for buildings situated in wind pressures up to 1.5 kPa ULS, and at maximum 400 mm centres for buildings situated in wind pressures greater than 1.5 kPa ULS up to 4.5 kPa ULS. Dwangs must be fitted flush between the studs at maximum 1200 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.)*

7.4 Timber wall framing where James Hardie Rigid Air Barriers are joined must be nominal 50 mm width (i.e. 45 mm minimum finished width).

7.5 Timber framing must not have a maximum moisture content higher than 20% at the time of the James Hardie Rigid Air Barriers installation. *(Note: If James Hardie Rigid Air Barriers are fixed to framing with a moisture content of greater than 20% problems may occur at a later date due to excessive timber shrinkage.)*

James Hardie Rigid Air Barriers Set Out

7.6 James Hardie Rigid Air Barriers must be installed vertically. At the base of the wall, the sheet must hang below the bottom plate a minimum of 15 mm, up to a maximum of 40 mm.

7.7 In all cases, HomeRAB® Pre-Cladding and RAB® Board sheet edges must be supported and fixed to the wall framing

General

7.8 James Hardie Rigid Air Barriers are intended for use as rigid wall underlays fixed over timber framed walls in order to support wind pressures, and to act as a secondary barrier to wind-driven rain.

Temporary Weather Protection

7.9 Commencing from installation, James Hardie Rigid Air Barriers must not be exposed to the weather for more than 90 days.

7.10 James Hardie Rigid Air Barriers may be used as a temporary weather protecting sheathing to allow the insulation and 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 James Hardie Rigid Air Barriers 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.

7.11 James Hardie Rigid Air Barriers are suitable for use under wall claddings as a rigid wall underlay as called up in NZBC Acceptable Solution E2/AS1, Table 23, except that non-absorbent claddings must not be installed directly over the James Hardie Rigid Air Barriers.

Where a direct fixed non-absorbent wall cladding is used, the James Hardie Rigid Air Barrier must be overlaid with a flexible wall underlay complying with NZBC Acceptable Solution E2/AS1, Table 23 before cladding commences. Refer to Table 1 for the NZBC Acceptable Solution E2/AS1, Table 23 properties for James Hardie Rigid Air Barriers.

Table 1: NZBC E2/AS1 Table 23 Requirements

NZBC E2/AS1 Table 23 **Rigid Wall Underlay Properties**	**Property Performance Requirement**	**James Hardie Rigid Air Barriers Actual Property Performance**
Vapour Resistance	< 7 MN s/g	0.6 MN s/g
Water Resistance	> 20 mm	Pass

Structure

Mass

8.1 The mass of HomeRAB® Pre-Cladding is approximately 6.5 kg/m^2 at equilibrium moisture content. The mass of RAB® Board is approximately 8.6 kg/m^2 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 HomeRAB® Pre-Cladding is suitable for use in all Wind Zones of NZS 3604, up to, and including, Very High. The sheets must be fixed at centres as specified in Table 2. The fixings must be positioned a minimum of 12 mm from all sheet edges, and a minimum of 50 mm horizontally and 75 mm vertically from sheet corners. The fastener heads must finish flush with the sheet surface.

Table 2: HomeRAB® Pre-Cladding Fixing Centres

NZS 3604 Wind Zone	**Framing Set Out**	**HomeRAB® Pre-Cladding Nailing Centres to Studs, Plates and Dwangs**
Low, Medium, High and Very High	Studs at 600 mm centres maximum and dwangs at 1200 mm centres	200 mm

8.3 RAB® Board is suitable for use in design wind pressures up to and including 4.5 kPa ULS when used in conjunction with wall cladding systems able to resist the same face load pressures. The sheets must be fixed at centres as specified in Table 3. The fixings must be positioned a minimum of 12 mm from all sheet edges, and a minimum of 50 mm horizontally and 75 mm vertically from sheet corners. The fastener heads must finish flush with the sheet surface.

Table 3: RAB® Board Fixing Centres

Wind Pressure	Framing Set Out	RAB® Board Nailing Centres to Studs, Plates and Dwangs
≤ 1.5 kPa ULS (NZS 3604 Wind Zone Very High)	Studs at 600 mm centres and dwangs at 1200 mm	200 mm
> 1.5 kPa ULS and ≤ 4.5 kPa ULS	Studs at 400 mm centres and dwangs at 1200 mm	200 mm

Top Plate Hold Down Connections

8.4 James Hardie Rigid Air Barriers can be used as an alternative to wire dog connectors to achieve a top plate connection capacity of 4.7 kN in accordance with Fixing Type B of NZS 3604 Table 8.18. To achieve the connection strength, the HomeRAB® Pre-Cladding and RAB® Board sheets must be fixed along the top edge into the top plate with 50 x 2.8 mm hot-dip galvanised or ring shank stainless steel round head nails, or hand driven 40 x 2.8 mm hot-dip galvanised or ring shank stainless steel HardieFlex™ nails at 75 mm centres. The fixings must be positioned a minimum of 20 mm from the sheet edge. The fastener heads must finish flush with the sheet surface. The remainder of the sheet is fixed in accordance with Table 2 or Table 3.

Wall Cladding Fixing

8.5 The length of the selected wall cladding fixing must be increased by a minimum of the thickness of the James Hardie Rigid Air Barrier to maintain the face load strength of the wall cladding system.

Bracing

8.6 HomeRAB® Pre-Cladding and RAB® Board can be used to provide structural bracing. This has not been assessed by this Appraisal and is outside its scope.

Durability

9.1 James Hardie Rigid Air Barriers meet code compliance with NZBC Clause B2.3.1 (a), not less than 50 years when used 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 they are 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, James Hardie Rigid Air Barriers are expected to have a serviceable life of at least 50 years.

9.3 Areas of geothermal activity and coastal locations can be very corrosive to fasteners, especially coastal locations within distances of up to 500 metres of the sea including harbours, or 100 metres from tidal estuaries and sheltered inlets in some instances. These coastal locations are defined in NZS 3604: 2011 as Zone D and Zone C. For the James Hardie Rigid Air Barriers when used as a rigid sheathing to achieve a 50 year serviceable life in Zone D and Zone C where increased corrosion resistance is required, they must be fixed with stainless steel fasteners. Fasteners outside the Zone D and Zone C may be hot dipped galvanised steel.

Maintenance

10.1 James Hardie Rigid Air Barriers will not normally require maintenance. However, if damage occurs to the cladding or lining protecting the sheathing or to the sheathing itself, the repairs or replacement must be carried out to ensure the integrity of the rigid wall underlay.

Prevention of Fire Occurring

11.1 RAB® Board 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.

11.2 Separation or protection must be provided to HomeRAB® Pre-Cladding 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.

External Moisture

12.1 James Hardie Rigid Air Barriers must be used behind claddings that meet the performance requirements of NZBC Clause E2.

12.2 James Hardie Rigid Air Barriers, when installed in accordance with the Installation Manual and this Appraisal, will assist in the total cladding system's compliance with NZBC Clause E2.

Installation Information

Installation Skill Level Requirements

13.1 Installation must always be carried out in accordance with the James Hardie Rigid Air Barriers Installation Manual and this Appraisal, by competent tradespersons with an understanding of rigid wall underlay installation.

System Installation

James Hardie Rigid Air Barriers Installation

14.1 James Hardie Rigid Air Barriers 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.

14.2 Sheets must be dry prior to installation. Cut edges that are left exposed must be sealed prior to installation.

14.3 Prior to fixing James Hardie Rigid Air Barriers, a check must be made to ensure all sheet edges will be supported by framing. At the base of the wall, the sheet must hang below the bottom plate by a minimum of 15 mm.

14.4 James Hardie Rigid Air Barriers must be fixed to the timber framing with 50 x 2.8 mm hot-dip galvanised or ring shank stainless steel round head nails, or hand driven 40 x 2.8 mm hot-dip galvanised or ring shank stainless steel HardieFlex™ nails. Refer to Table 2, Table 3 and Paragraph 8.4 for fixing centres and Paragraph 9.3 for material selection.

14.5 At vertical joints, James Hardie Rigid Air Barriers must be installed with a 2-3 mm gap between the sheet edges and must be supported over vertical framing. At horizontal joints between floor levels, James Hardie Rigid Air Barriers must be installed with a minimum 10 mm gap between the sheet edges and must be supported over horizontal framing. At inter-storey floor levels, James Hardie Rigid Air Barriers 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.

14.6 Any damaged areas, 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

14.7 All vertical sheet joints, internal and external corners must be covered with 3M™ All Weather Flashing Tape 8067, Protecto Sill, or Super-Stick joint sealing tape. Inseal® 3259 tape can also be used, however it must be covered with cavity battens as soon as it is installed. 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.

14.8 James Hardie Rigid Air Barriers 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

14.9 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 James Hardie Rigid Air Barriers 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

14.10 The Installation Manual must be referred to during the inspection of James Hardie Rigid Air Barriers installations. When the construction sequence is followed in accordance with Paragraph 7.10 and the Installation Manual, the BCA inspections for pre-cladding and pre-lining may be combined.

Health and Safety

15.1 Cutting of James Hardie Rigid Air Barriers must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.

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

15.3 Safe use and handling procedures for James Hardie Rigid Air Barriers 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

16.1 Testing has been carried out by James Hardie Building Products to determine the face load pressure resistance of HomeRAB® Pre-Cladding. Testing has also been carried out by James Hardie Building Products to determine the face load pressure resistance of RAB® Board in conjunction with Titan Facade Panels. The testing was completed in a NATA Accredited laboratory and was observed by BRANZ. The test method and results have been reviewed by BRANZ and found to be satisfactory.

16.2 The resistance of James Hardie Rigid Air Barriers 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

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

17.2 BRANZ expert opinion on NZBC E2 code compliance for James Hardie Rigid Air Barriers was based on evaluation of all details within the scope and as stated within this Appraisal. The details contained within the Installation Manual 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 wall underlays.

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

17.4 The Installation Manual for James Hardie Rigid Air Barriers has been examined by BRANZ and found to be satisfactory.

Quality

18.1 The manufacture of James Hardie Rigid Air Barriers 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.

18.2 The quality of materials, components and accessories supplied by James Hardie New Zealand is the responsibility of James Hardie New Zealand. The quality control system of James Hardie New Zealand has been assessed and registered as meeting the requirements of ISO 9001: 2008 by Telarc SAI Limited.

18.3 Quality of installation on site of components and accessories supplied by James Hardie New Zealand and the building contractor is the responsibility of the installer.

18.4 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 James Hardie New Zealand.

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.
- Acceptable Solutions and Verification Methods for the New Zealand Building Code External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 (Amendment 6, 14 February 2014).
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendment No. 1, 3 September 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.
Amendment No. 2, 15 December 2014.
This Appraisal has been amended to replace 3.5 mm thick HomeRAB® PreClad™ Lining with 4.5 mm thick HomeRAB® Pre-Cladding. The use of James Hardie Rigid Air Barriers as an alternative to the NZS 3604 top plate hold down connections has also been included.

BRANZ

In the opinion of BRANZ, James Hardie Rigid Air Barriers are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.
The Appraisal is issued only to James Hardie New Zealand 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. James Hardie New Zealand
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 James Hardie New Zealand
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 James Hardie New Zealand or any third party.

For BRANZ

P Burghout
Chief Executive

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