



BRANZ Appraised
Appraisal No. 1121 [2021]

BARRIERBOND WPM AND BARRIER BOND FAST (2P) WET AREA MEMBRANES

Appraisal No. 1121 [2021]



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes are liquid-applied waterproofing membranes for use under vinyl, ceramic or stone tile finishes in internal wet areas.

Scope

- 2.1 Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes have been appraised for use as waterproofing membranes for internal wet areas of buildings, within the following scope:
 - on floor substrates of concrete, compressed fibre cement sheet and fibre cement sheet tile underlay, and on wall substrates of concrete, concrete masonry, wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
 - when protected from physical damage by vinyl, ceramic or stone tile finishes; and,
 - where floors are designed and constructed such that deflections do not exceed 1/360th of the span.
- 2.2 The use of Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes on concrete slabs where hydrostatic or vapour pressure is present from below is outside the scope of this Appraisal.
- 2.3 Movement and control joints in the substrate must be carried through to the tile finish. The design and construction of the substrate and movement and control joints are specific to each building, and are therefore the responsibility of the building designer and building contractor and are outside the scope of this Appraisal.
- 2.4 The vinyl, ceramic or stone tile finishes are outside the scope of this Appraisal.
- 2.5 The membranes must be installed by trained applicators, approved by Bonded Technologies Pty Ltd.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes, 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 B2 DURABILITY: Performance B2.3.1 (b), 15 years and B2.3.2. Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes meet this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes will meet this requirement. See Paragraphs 11.1-11.7.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Barrierbond WPM and Barrierbond Fast (2P) Wet Area Membranes meet this requirement.

Technical Specification

- 4.1 Materials supplied by Bonded Technologies Pty Ltd are as follows:
- **Barrierbond WPM Membrane** - is a Class III, highly elastomeric, one-part SBR waterproofing membrane. It is supplied as a liquid paste in 5 and 15 L containers.
 - **Barrierbond Fast [2P]**- is a fast drying, two-part waterproofing membrane. It is supplied as a powder in 15 kg bag and a liquid in 10 L pails, coloured light grey when mixed.
 - **Prepbond AP** - is an acrylic-based wall and floor primer for use on all porous substrates.
 - **Prepbond NP Grip** - is a solvent-free primer specifically designed for use on all non-porous substrates.

Handling and Storage

- 5.1 All materials must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions. The materials in the original unopened packaging have a shelf life of 12 months from date of manufacture. Once opened, the materials must be used within 3 months.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for reference to the current Technical Literature for the Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes. 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. The Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes listing on the BRANZ website excludes specific details. These details have not been assessed by BRANZ and are outside the scope of the Appraisal.

Design Information

General

- 7.1 Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes are for use in buildings where an impervious waterproof membrane is required to floors and walls to prevent damage to building elements and adjoining areas.
- 7.2 Barrierbond Fast [2P] is designed to be used where a quicker curing time is required, such as in cool or humid conditions.
- 7.3 The membranes must be protected from physical damage by the application of vinyl, ceramic or stone tile finishes.
- 7.4 Movement and control joints may be required depending on the shape and size of the building or room, and the tile finish specified. Design guidelines can be found in the BRANZ Good Practice Guide - Tiling.
- 7.5 Timber framing must comply with NZS 3604, or where specific engineering design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604, or comply with the serviceability criteria of AS/NZS 1170. In all cases, framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported. Timber framing supporting the substrates must be constructed such that deflections do not exceed 1/360th of the span. Where NZS 3604 is used, the allowable joist spans given in Table 7.1 shall be reduced by 20%.

Substrates

Fibre Cement Compressed Sheet/Fibre Cement Sheet Tile Underlay

- 8.1 Fibre cement compressed sheet must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use as a wet area substrate. Fibre cement sheet tile underlay must be suitable for use in internal wet areas. Installation must be in accordance with the instructions of the manufacturer.



Concrete and Concrete Masonry

- 8.2 Concrete and concrete masonry substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101, concrete slab-on-ground to NZS 3604, and concrete masonry to NZS 4229 and NZS 4230.

Wet Area Wall Linings

- 8.3 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588 and be suitable for use in internal wet areas.
- 8.4 Fibre cement sheet must be suitable for use in wet areas and comply with the requirements of AS 2908.2.

Durability

Serviceable Life

- 9.1 The Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes, when subjected to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15-25 years.

Maintenance

- 10.1 No maintenance of the membranes will be required provided significant substrate movement does not occur and the vinyl or tile finish remains intact. Regular checks must be made of vinyl and tiled areas to ensure they are sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the vinyl or tiles, grouts and sealants.
- 10.2 In the event of damage to the membranes, the vinyl or tiling must be removed and the membrane repaired by removing the damaged portion and applying a patch as for new work.
- 10.3 Drainage outlets must be maintained to operate effectively, and vinyl, ceramic or stone tile finishes must be kept clean.

Internal Moisture

- 11.1 Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes are impervious to water and when appropriately designed and installed will avoid the likelihood of water penetrating behind linings or entering concealed spaces.
- 11.2 Barrierbond WPM Membrane and Barrierbond Fast [2P] are suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of code compliance for overflow is given in NZBC Acceptable Solution E3/AS1, Paragraph 2.1.
- 11.3 Surfaces must be finished with vinyl, ceramic or stone tile finishes. A means of code compliance to NZBC Clause E3.3.3 for ceramic or stone tile finishes is given in NZBC Acceptable Solution E3/AS1, Paragraph 3.1.1 b) and 3.1.2 b).
- 11.4 Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1,500 mm out from the shower rose. Floor wastes must be provided and the floor must fall to the outlet.
- 11.5 The waterproofing membrane must completely cover shower bases, and for unenclosed showers it must extend a minimum of 1,500 mm out from the shower rose. Further design guidance on waterproofing wet areas, including waterproofing walls and junctions can be obtained from AS 3740, the BRANZ Good Practice Guide – Tiling, and flooring and wallboard manufacturers.
- 11.6 Where water resistant wall finishes such as prefinished sheet materials are used, they must flash over the membrane a minimum of 30 mm.
- 11.7 BRANZ recommends the entire floor be covered by a waterproof membrane for bath, shower and spa rooms.

Installation Information

Installation Skill Level Requirement

- 12.1 Installation of the membranes must be completed by trained applicators, approved by Bonded Technologies Pty Ltd.
- 12.2 Installation of substrates must be completed in accordance with instructions given within the Bonded Technologies Pty Ltd Technical Literature and this Appraisal by, or under the supervision of a Licensed Building Practitioner [LBP] with the relevant Licence Class.

Preparation of Substrates

- 13.1 Substrates must be dry, clean and stable before installation commences, with surfaces that are even and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents.
- 13.2 The relative humidity of concrete substrates must be 75% or less before membrane application. The concrete can be checked for dryness by using a hygrometer as set out in BRANZ Bulletin No. 585.
- 13.3 All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface.
- 13.4 Substrates must be primed with Prepbond AP or Prepbond NP Grip, depending on substrate and allowed to dry fully before the membrane is installed.

Membrane Installation

- 14.1 Installation must not be undertaken where the substrate surface temperature is below 5°C or above 35°C.
- 14.2 Barrierbond Fast [2P] liquid and Barrierbond Fast [2P] powder must be mixed and left to stand for 5 minutes before re-mixing, then applying. Barrierbond WPM Membrane must be thoroughly stirred before application.
- 14.3 The membrane must be applied in a minimum of two coats at the rates set out in the Technical Literature to give a total minimum finished thickness of 1.2 mm. Subsequent coats must be applied in an opposite direction to the previous coat.
- 14.4 Application can be made by roller [medium/long nap], brush [long bristle], or a non-edge serrated flat steel trowel.
- 14.5 Clean up may be undertaken with water.

Tiling

- 15.1 The membranes must be fully cured before tiling. The cured membranes must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.
- 15.2 Tiling must be undertaken in accordance with AS 3958.1 and the BRANZ Good Practice Guide - Tiling. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Bonded Technologies Pty Ltd.

Inspections

- 16.1 Critical areas of inspection are:
 - Construction of substrates, including crack control and installation of under flashings and movement control joints.
 - Moisture content of the substrate prior to the application of the membrane.
 - Acceptance of the substrate by the membrane installer prior to application of the membrane.
 - Installation of the membrane to the manufacturer's instructions, particularly installation to the correct thickness and use of reinforcement.
 - Membrane curing and integrity prior to the installation of tiles including protection from mechanical damage during curing and prior to tile installation.

Health and Safety

- 17.1 Safe use and handling procedures for the membranes are provided in the Technical Literature. The materials must be used in conjunction with the relevant Material Safety Data Sheet.

Basis of Appraisal

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

Tests

- 18.1 The following testing of Barrierbond WPM Membrane has been undertaken by the following organisations:
- Amdel Limited, Australia – water absorption; tensile strength and elongation; shore A hardness; water vapour transmission; accelerated weathering and low temperature flexibility.
 - CSIRO, Australia – mass per unit area and gravimetric thickness; tensile strength and elongation at break; tensile strength and elongation at break after UV exposure, including immersion in water, bleach and detergent; loss on heating; moving joint test and cyclic strain.
 - Test methods and results have been reviewed by BRANZ and found to be satisfactory.
- 18.2 The following testing of Barrierbond WPM Membrane has been undertaken by Amdel Limited, Australia – wet area durability testing in accordance with AS/NZS 4858 covering immersion in water, bleach, detergent, and heat ageing; UV ageing; water absorption; low temperature flexibility and water vapour transmission. Test methods and results have been reviewed by BRANZ and found to be satisfactory.
- 18.3 Test methods and results have been reviewed by BRANZ and found to be satisfactory.
- 18.4 Although not required by the standard AS/NZS 4858 as water vapour transmission testing had already shown compliance, additional testing of Barrierbond WPM Membrane and Barrierbond Fast [2P] was also undertaken by Amdel Limited for suitability over particleboard in accordance with AS/NZS 4858, Appendix C, and found to be satisfactory.

Other Investigations

- 19.1 An assessment was made of the durability of the Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes by BRANZ technical experts.
- 19.2 Site inspections have been carried out by BRANZ to assess the practicability of installation and to examine completed installations.
- 19.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 20.1 The manufacture of the membranes has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 20.2 The quality management system of the membrane's manufacturer has been assessed and found to be satisfactory.
- 20.3 The quality of supply of the membrane system to the market is the responsibility of Bonded Technologies Pty Ltd.
- 20.4 Quality on site is the responsibility of the trained applicators, approved by Bonded Technologies Pty Ltd.
- 20.5 Designers are responsible for the substrate design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of the substrate manufacturer, Bonded Technologies Pty Ltd and this Appraisal.
- 20.6 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of Bonded Technologies Pty Ltd.



Sources of Information

- AS 2908.2 – 2000 Cellulose-cement products - flat sheet.
- AS 3740 – 2010 Waterproofing of domestic areas.
- AS 3958.1 – 1991 Guide to the installation of ceramic tiles.
- ASTM D2919-01 Standard test method for determining durability of adhesive joints stressed in shear by tension loading.
- AS/NZS 2270: 2002 Structural design actions.
- AS/NZS 4858: 2004 Wet area membranes.
- BRANZ Bulletin No. 585 Measuring Moisture in Timber and Concrete, June 2015.
- BRANZ Good Practice Guide – Tiling, April 2015.
- NZS 3101: 2006 The design of concrete structures.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4229: 2013 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230: 2004 Code of practice for the design of masonry structures.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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28 July 2021

BARRIERBOND WPM AND
BARRIERBOND FAST [2P] WET
AREA MEMBRANES



In the opinion of BRANZ, **Barrierbond WPM and Barrierbond Fast [2P] Wet Area Membranes** 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 **Bonded Technologies Pty Ltd**, 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. **Bonded Technologies Pty Ltd:**
 - 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 **Bonded Technologies Pty Ltd**.
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 **Bonded Technologies Pty Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

28 July 2021