



BRANZ Appraised
Appraisal No. 865 [2014]

LATICRETE HYDRO BAN® EXTERIOR WATERPROOFING MEMBRANE

Appraisal No. 865 [2014]
Amended 09 September 2016



BRANZ Appraisals

Technical Assessments of
products for building and
construction.

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Product

- 1.1 Laticrete Hydro Ban® is a liquid applied waterproofing membrane for use under ceramic or stone tile finishes on external decks and balconies.

Scope

- 2.1 Laticrete Hydro Ban® has been appraised for use as a deck waterproofing membrane for buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regard to building height, floor plan area; and,
 - situated in NZS 3604 Wind Zones up to and including Extra High; and,
 - the building is subject to specific structural design; and,
 - a substrate of suspended concrete slab; and,
 - with a minimum fall for decks of 1:40.
- 2.2 Decks and balconies must be designed and constructed in accordance with the following limitations:
 - with the membrane continually protected from exposure to ultra violet (UV) light and from physical damage by (ceramic or stone) tile finishes; and,
 - with no steps within the deck level and no down pipe direct discharge to deck.
- 2.3 Movement and control joints in the substrate must be carried through the membrane and tile finish. The design and construction of the substrate and movement and control joints is specific to each building, and is therefore the responsibility of the building designer and building contractor and is outside the scope of this Appraisal.
- 2.4 The membrane must be installed by trained applicators, approved by Global Tile Ltd.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Laticrete Hydro Ban®, 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. Laticrete Hydro Ban® meets this requirement. See Paragraph 9.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1 and E2.3.2. Decks and balconies incorporating Laticrete Hydro Ban® meet these requirements. See Paragraphs 12.1 - 12.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Laticrete Hydro Ban® meets this requirement and will not present a health hazard to people.

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

Technical Specification

4.1 Laticrete Hydro Ban® is a single component, self-curing, liquid rubber polymer. It is supplied as a light sage colour which dries to an olive green colour when cured. It is supplied in 1 or 5 US gallon (3.785 or 18.9 litre) pails.

Handling and Storage

5.1 The material must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions. The material in the original unopened pail has a shelf life of 24 months from date of manufacture. Once opened, the material must be used within 3 months.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Laticrete Hydro Ban®. 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

General

- 7.1 Laticrete Hydro Ban® is for use on decks and balconies where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas.
- 7.2 The membrane must be protected from exposure to UV light and from physical damage by ceramic or stone tile finishes. Ceramic or stone tile finishes are outside the scope of this Appraisal.
- 7.3 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membrane. Refer to the BRANZ publication 'Good Practice Guide to Membrane Roofing'.
- 7.4 Movement and control joints may be required depending on the shape and size of the deck and the finish specified. Design guidelines for control joints for tiles can be found in the 'BRANZ Good Practice Guide to Tiling'.

Substrate

Concrete

8.1 Concrete substrates must be to a specific engineering design meeting the requirements of the NZS 3101.

Durability

Serviceable Life

- 9.1 Laticrete Hydro Ban®, when subjected to normal conditions of environment and use, is expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tiling finishes with a design service life of 15 - 25 years.

Maintenance

- 10.1 No maintenance of the membrane will be required provided significant substrate movement does not occur and the tile finish remains intact. Regular checks must be made of the tiling to ensure it is sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the tiling and any grout or sealant.
- 10.2 In the event of damage to the membrane, the 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 tile finishes must be kept clean. Cleaning materials that may affect polymer based membranes must not be used.

Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Laticrete Hydro Ban® 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 Decks and balconies must be designed and constructed to shed precipitated moisture. They must also take account of snowfalls in snow prone areas. A means of meeting code compliance with NZBC Clause E2.3.1 is given by the Technical Literature which gives details aligned with NZBC Acceptable Solution E2/AS1.
- 12.2 When installed in accordance with this Appraisal and the Technical Literature, Laticrete Hydro Ban® will prevent the penetration of water and will therefore meet code compliance with Clause E2.3.2. The membrane is impervious to water and will give a weathertight deck or balcony.
- 12.3 The minimum fall to decks and balconies must be 1 in 40 and gutters must be 1 in 60 and all falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane and tiling finish.
- 12.4 Allowance for deflection and settlement of the substrate must be made in the design of the deck or balcony to ensure falls are maintained and no ponding of water can occur.
- 12.5 Deck and balcony falls must be built into the substrate and not created with mortar screeds applied over the membrane.
- 12.6 Laticrete Hydro Ban® is impermeable, therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with Clause E2.3.6.
- 12.7 Drainage flanges must be used for any outlet and must be fitted with a grate or cage to reduce potential sources of blockages. An overflow must be provided where the deck or balcony does not drain to an external gutter or spouting.
- 12.8 Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by blockage of deck and balcony drainage.
- 12.9 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this Appraisal.

Installation Information

Installation Skill Level Requirement

- 13.1 Installation of the membrane must be completed by Global Tile Ltd Approved and Trained Applicators that have experience in the application of waterproofing membranes and understand waterproofing principles.
- 13.2 Installation of the substrate must be completed by tradespersons with an understanding of deck and balcony construction, in accordance with instructions given within the Global Tile Ltd Technical Literature and this Appraisal.

Preparation of Substrates

- 14.1 Substrates must be dry, clean and stable before installation commences. Surfaces must be smooth and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents. All surface defects must be filled to achieve an even and uniform surface.
- 14.2 The concrete substrate can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 515. The relative humidity of the concrete must be 75% or less before membrane application.

Membrane Installation

- 15.1 Installation must not be undertaken where the substrate surface temperature is below 10°C or above 32°C.
- 15.2 Laticrete Hydro Ban® must be mixed before applying.
- 15.3 The membrane must be applied in a minimum of two coats at the rates set out in the Technical Literature. Subsequent coats must be applied in an opposite direction to the previous coat. The total finished system thickness of Laticrete Hydro Ban® must be a minimum of 1.0 mm.
- 15.4 Application can be made by roller (medium/long nap), brush (long bristle), trowel or airless sprayer.
- 15.5 Reinforcement provisions as set out in the Technical Literature should be followed.
- 15.6 It is strongly recommended that the membrane is protected with temporary covers until it is fully cured in case of mechanical damage or rain wetting.
- 15.7 Clean up may be undertaken with water.

Tiling

- 16.1 The membrane must be fully cured before tiling. The membrane must not be left exposed to ultra-violet (UV) for any longer than 14 days prior to tile application. If the membrane is exposed for longer than 14 days, it will need to be inspected for any damage. If there is evidence of damage, a further coat of Laticrete Hydro Ban® will need to be applied and allowed to cure prior to tiling commencing.
- 16.2 The cured membrane must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.
- 16.3 Tiling must be undertaken in accordance with AS 3958.1 and the 'Good Practice Guide to Tiling'. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Global Tile Ltd.

Inspections

- 17.1 Critical areas of inspection for waterproofing systems are:
 - Construction of substrate, including crack control and installation of bond breakers 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 manufacturers' instructions, particularly installation to the correct thickness and use of reinforcement.
 - Membrane curing and integrity prior to the installation of tiles, including protection from moisture, frost and mechanical damage during curing.

Health and Safety

- 18.1 Safe use and handling procedures for the membrane system is provided in the Technical Literature. The product 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

- 19.1 Testing has been undertaken on Laticrete Hydro Ban® by the following:
- CSIRO Industrial Research Services to AS/NZS 4858 Appendix A, Water Vapour Transmission to ASTM E96-92, cyclic movement resistance requirements, water absorption.
 - SGS US Testing Inc for breaking strength & seam strength, static head, dimensional stability, resistance to fungi and shear strength to ceramic tile and cement mortar.
 - BRANZ has tested the tensile adhesion and low temperature flexibility of the membrane.
- Test methods and results were reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 20.1 An assessment was made of the durability of the Laticrete Hydro Ban® by BRANZ technical experts.
- 20.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 20.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 21.1 The manufacture of Laticrete Hydro Ban® has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory. BRANZ has taken note of a certification covering quality aspects associated with the product.
- 21.2 The quality of supply of the membrane system to the market is the responsibility of Global Tile Ltd.
- 21.3 Quality on site is the responsibility of the Global Tile Ltd Approved and Trained Applicators.
- 21.4 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, Global Tile Ltd and this Appraisal.
- 21.5 Building owners are responsible for the maintenance of the tiling systems in accordance with the instructions of Global Tile Ltd.

Sources of Information

- AS/NZS 1170: 2002 Structural design actions.
- AS 3958.1: 2007 Ceramic tiles - Guide to the installation of ceramic tiles.
- NZS 3101: 2006 The design of concrete structures.
- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods, Acceptable Solutions E2/AS1 [including Amendment 6, 14 February 2014].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.
- BRANZ Good Practice Guide, Tiling, April 2015.
- BRANZ Good Practice Guide, Membrane Roofing, October 2015.

Amendments

Amendment No. 1, dated 09 September 2016

This Appraisal has been amended to update the Appraisal Holders details.



In the opinion of BRANZ, **Laticrete Hydro Ban® Exterior Waterproofing Membrane** 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 **Global Tile 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. **Global Tile 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 **Global Tile 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 **Global Tile Ltd** or any third party.

For BRANZ



Chelydra Percy

Chief Executive

Date of Issue:

01 July 2014