



BRANZ Appraised

Appraisal No. 865 [2024]

LATICRETE HYDRO BAN® EXTERIOR WATERPROOFING MEMBRANE

Appraisal No. 865 [2024]

This Appraisal replaces BRANZ Appraisal No. 865 [2019]



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 and slab 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; or,
 - with deck and balcony supporting structures of timber framing with substrates of compressed fibre cement; 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 ultraviolet (UV) light and from physical damage by (ceramic or stone) tile finishes; and,
 - with no steps within the deck level and no downpipes directly discharging to the deck.
- 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 is specific to each building, and therefore the responsibility of the building designer and building contractor. These joints have not been assessed by BRANZ and are outside the scope of this Appraisal.
- 2.4 Ceramic or stone tile and slab finishes are outside the scope of this Appraisal.
- 2.5 The membrane must be installed by LATICRETE New Zealand Ltd trained and approved applicators.



Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, LATICRETE HYDRO BAN® Exterior Waterproofing Membrane, 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® Exterior Waterproofing Membrane 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® Exterior Waterproofing Membrane meet these requirements. See Paragraphs 12.1-12.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. LATICRETE HYDRO BAN® Exterior Waterproofing Membrane meets this requirement.

Technical Specification

4.1 Materials supplied by LATICRETE New Zealand Ltd are as follows:

- LATICRETE HYDRO BAN® Membrane 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 4 or 15 L pails.
- LATICRETE HYDRO BAN® Fillet & Sealant is a one component, fast curing, hybrid elastomeric adhesive and sealant. Used to construct fillets and transitions under HYDRO BAN.
- LATICRETE HYDRO BAN Adhesive & Sealant is a one component, fast curing, hybrid elastomeric adhesive and sealant.
- LATAPOXY® Moisture Shield is a two component, roller applied epoxy coating specifically designed to reduce moisture vapour emissions in concrete and other substrates.
- LATICRETE HYDRO BAN® SLURRY is a cement-based, one component, polymer fortified material that mixes with water and is suitable for areas requiring resistance to negative and positive hydrostatic pressure.

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 membrane product has a shelf life of 24 months from date of manufacture in the original unopened packaging. Once opened, the product must be used within 3 months.

Technical Literature

6.1 This Appraisal must be read in conjunction with:

- Hydro Ban Installation Instructions for New Zealand, TDS-1005NZ 06/2024/Version 2..
- Hydro Ban DS-1036NZ - 0424.
- Safety Data Sheet 0104- May 2021

6.2 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, balconies and other above ground areas 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 and slab finishes. Ceramic or stone tile and slab finishes are outside the scope of this Appraisal.
- 7.3 Do not expose the LATICRETE HYDRO BAN® membrane to UV for more than 30 days.
- 7.4 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membrane. Refer to the BRANZ Good Practice Guide: Membrane Roofing.
- 7.5 Movement and control joints may be required depending on the shape and size of the area and the finish specified. Design guidelines for control joints for tiles can be found in the BRANZ Good Practice Guide: Tiling.

Substrate

Compressed Fibre Cement Sheet

- 8.1 Compressed fibre cement sheet must be manufactured to comply with the requirements of AS/NZS 2908.2 and must be specified by the manufacturer as being suitable for use as an external decking substrate. The fibre cement sheet must be of a thickness to meet specific structural design requirements and must be secured to the structure to resist wind uplift and all other forces acting on the deck or balcony, such as deflection from gravity and live loads. Installation must be in accordance with the instructions of the manufacturer. Many cement backer boards incorporate moisture blocking technology that require the use of a liberal application of LATAPOXY® Moisture Shield prior to the application of LATICRETE HYDRO BAN® membrane.

Concrete

- 8.2 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 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 tiles, grouts and sealants.
- 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 the LATICRETE HYDRO BAN® from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Acceptable Solution C/AS1 and NZBC Acceptable Solution C/AS2 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 NZBC Clause E2.3.2. The membrane is impervious to water and will give a weather-tight 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 NZBC 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 LATICRETE New Zealand 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 always be carried out in accordance with the LATICRETE HYDRO BAN® Exterior Waterproofing Membrane Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant License Class.

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 All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface. Junctions of substrate abutments, such as at wall/floor and wall/wall junctions must have a bond breaker joint system installed as set out in the Technical Literature.
- 14.3 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.
- 14.4 The moisture content of the timber substructure must be a maximum of 20% and fibre cement compressed sheet must be dry at time of membrane application. This will generally require fibre cement sheets to be covered until just before the membrane is laid, to prevent rain wetting.
- 14.5 Where high levels of moisture or moisture vapour emission are present, LATAPOXY® Moisture Shield can be used to mitigate moisture of concern.
- 14.6 Refer to the product manufacturer for correct priming requirements.



Membrane Installation

- 15.1 Maximum allowable variation in the tile substrate – for tiles with edges shorter than 375 mm, maximum allowable variation is 6 mm in 3 m from the required plane, with no more than 1.5 mm variation in 300 mm when measured from the high points in the surface. For tiles with at least one edge 375 mm in length or longer, maximum allowable variation is 3 mm in 3 m from the required plane, with no more than 1.5 mm variation in 600 mm when measured from the high points in the surface.
- 15.2 Installation must not be undertaken where the substrate surface temperature is below 10°C or above 32°C.
- 15.3 LATICRETE HYDRO BAN® membrane must be thoroughly stirred before use.
- 15.4 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 mm.
- 15.5 Application can be made by roller (medium/long nap), brush (long bristle), trowel or airless sprayer.
- 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 UV light for any longer than 30 days prior to tile application. If the membrane is exposed for longer than 30 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 2023 and the BRANZ Good Practice Guide: Tiling. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or LATICRETE New Zealand 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 fillet construction.
 - 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 and 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 inspections 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 BRANZ has taken note of Technical Assessments and Certifications covering quality aspects associated with the product.
- 21.3 The quality of supply of the membrane system materials to the market is the responsibility of LATICRETE New Zealand Ltd.
- 21.4 Quality on-site is the responsibility of the LATICRETE New Zealand Ltd trained and approved applicators.
- 21.5 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, LATICRETE New Zealand Ltd and this Appraisal.
- 21.6 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of LATICRETE New Zealand Ltd.

Sources of Information

- AS 3958:2023 Installation of ceramic and stone tiles
- AS/NZS 1170:2002 Structural design actions.
- BRANZ Bulletin 585 - Measuring moisture in timber and concrete.
- BRANZ Good Practice Guide: Membrane Roofing (Second Edition), October 2015.
- BRANZ Good Practice Guide: Tiling (Third Edition), April 2015.
- NZS 3101:2006 The design of concrete structures.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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23 July 2024

LATICRETE HYDRO BAN®
EXTERIOR WATERPROOFING
MEMBRANE



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 **LATICRETE New Zealand 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. **LATICRETE New Zealand 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 quality of work;
 - 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 **LATICRETE New Zealand 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 **LATICRETE New Zealand Ltd** or any third party.

For BRANZ

Claire Falck

Chief Executive

Date of Issue:

23 July 2024