



BRANZ Appraised

Appraisal No. 1273 [2024]

RLA WPU AND WPM WET AREA MEMBRANES

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BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 RLA WPU and WPM Wet Area Membranes are liquid-applied waterproofing membranes for use under ceramic or stone tile finishes in internal wet areas.

Scope

- 2.1 RLA WPU and WPM 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, flooring grade particleboard, plywood, fibre cement compressed 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 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 RLA WPU and WPM Wet Area Membranes on concrete slabs where hydrostatic or vapour pressure is present is outside the scope of this Appraisal.
- 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 ceramic or stone tile finishes are outside the scope of this Appraisal.
- 2.5 The membrane must be installed by trained applicators, approved by RLA Polymers Pty Ltd.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, RLA WPU and WPM 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. RLA WPU and WPM Wet Area Membranes meets this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating RLA WPU and WPM Wet Area Membranes meet this requirement. See Paragraphs 11.1-11.7.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. RLA WPU and WPM Wet Area Membranes meets this requirement.



Technical Specification

4.1 Materials supplied by RLA Polymers Pty Ltd are as follows:

- **RLA WPU** - an elastomeric, one-part, polyurethane/acrylic, fibre reinforced, water-based waterproofing membrane. It is a grey coloured liquid and supplied in 15 L pails.
- **RLA WPM** - an elastomeric, one-part, latex, fibre reinforced, water-based waterproofing membrane. It is a grey coloured liquid and supplied in 15 L pails.

Accessories

- **RLA BRW PF Tape** - a butyl rubber self-adhesive sealing tape used behind the membranes over all joints and transitions. It has a white face and a grey butyl backing and is available 80 mm wide in a 5 m long roll and 150 mm wide in a 10 m long roll.
- **RLA Elastoproof Joint Band System** - a detailing and bond-breaker system designed for sealing joints, junctions and corners. The joint band is available 120 mm wide in 10 or 50 m lengths. The internal and external prefabricated corners are 200 x 200 mm.
- **RLA MoistureSeal** - a two-component water-based epoxy for use as a primer and protective coating to prevent moisture penetration and rising damp through mineral surfaces. It is white and light grey in colour and supplied in 4, 8 or 20 L kits.
- **RLA Non Porous Primer** - a solvent-free primer, blue in colour and supplied in 1, 5 and 20 L pails.
- **RLA Porous Primer** - a water-based acrylic primer. It is milky-white in colour and is supplied in 5 and 20 L pails.
- **RLA Max SMP 25** - a one-component adhesive/sealant free of isocyanate, solvents and halogens. It is white in colour and supplied in 600 ml sausages.
- **RLA Plastinex** - an acrylic polymer concentrate specifically formulated for use in cement-based compounds. It is white in colour and is supplied in 5 and 20 L pails.
- **RLA UniLite** - a cementitious tile adhesive for commercial applications. It is white in colour and supplied in 12.5 kg bags.
- **RLA Mastik** - a polymer-modified tile adhesive for commercial applications. It is white in colour and supplied in 20 kg bags.
- **RLA AddFlextra** - a rubber-filled polymer-modified tile adhesive designed for use over a variety of substrates. It is off-white in colour and supplied in 20 kg bags.
- **RLA StoneSet** - a fast-set polymer-modified tile adhesive, designed for use with Class [A] moisture sensitive stone. It is white in colour and supplied in 20 kg bags.
- **RLA MoreFlex** - a flexible rubber-modified tile adhesive. It is off-white in colour and supplied in 20 kg bags.
- **RLA TileFlex** - a flexible rubber-modified tile adhesive. It is off-white in colour and supplied in 20 kg bags.
- **RLA TradeMastik** - a polymer-modified, cement-based tile adhesive. It is off-white in colour and supplied in 20 kg bags.
- **RLA Luminous Grout** - a rapid-setting, efflorescence-free ceramic tile grout. It is available in various colours in 4 kg bags.

Handling and Storage

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



Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- RLA WPM TDS, Version 01 NZ, Issue date 01 December 2024.
 - RLA WPU TDS, Version 01 NZ, Issue date 01 December 2024.
- 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 RLA WPU and WPM 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 The membranes must be protected from physical damage and ultraviolet (UV) light by the application of ceramic or stone tile finishes.
- 7.3 Movement and control joints may be required depending on the shape and size of the building or room, and the tile finish specified.
- 7.4 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.
- 7.5 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

Plywood

- 8.1 Plywood must be a minimum of 17 mm thick complying with AS/NZS 2269, CD Grade Structural with the sanded C face upwards and treated to H3 [CCA treated]. LOSP treated plywood must not be used.
- 8.2 The plywood must be laid with the face grain at right angles to the floor joists. Joists must be at 400 mm centres maximum and the edges of the sheets must be supported with blocking or framing. The plywood must be fixed with 10 g x 50 mm stainless steel countersunk head screws at 150 mm centres along the sheet edges and 200 mm centres to all framing through the body of the sheets.

Fibre Cement Compressed Sheet/Fibre Cement Sheet Tile Underlay

- 8.3 Fibre cement compressed 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 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.

Particleboard

- 8.4 Particleboard must be specified for the end use in accordance with NZS 3602.

Concrete and Concrete Masonry

- 8.5 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 or NZS 4229, and concrete masonry to NZS 4229 and NZS 4230.



Wet Area Wall Linings

- 8.6 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588, and be suitable for use in internal wet areas.
- 8.7 Fibre cement sheet must be suitable for use in wet areas and comply with the requirements of AS/NZS 2908.2
- 8.8 Installation of plasterboard or fibre cement wall linings must be carried out in accordance with the instructions of the manufacturer.

Durability

Serviceable Life

- 9.1 The RLA WPU and WPM 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 serviceable 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 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, grout and 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 ceramic or stone tile finishes must be kept clean.

Internal Moisture

- 11.1 RLA WPU and WPM 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 RLA WPU and WPM Wet Area Membranes are suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of compliance for containment of overflow is given in NZBC Acceptable Solution E3/AS1, Paragraph 2.1.
- 11.3 Surfaces must be finished with ceramic or stone tile finishes. A means of compliance to NZBC Clauses E3.3.3 and E3.3.4 are given in NZBC Acceptable Solution E3/AS1, Paragraphs 3.1.1 (b), 3.1.2 (b) and 3.3.1 (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 and drainage flanges 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 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 substrates must always be carried out in accordance with the RLA WPU and WPM Wet Area Membranes Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence Class.
- 12.2 Installation and finishing of components and accessories supplied by RLA Polymers Pty Ltd and its approved applicators must be completed by trained applicators, approved by RLA Polymers Pty Ltd.

Preparation of Substrates

- 13.1 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.
- 13.2 The relative humidity of concrete substrates must be 75% or less before membrane application. Concrete substrates 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. Junctions of substrate abutments, such as at wall/floor and wall/wall junctions must have a bond breaker installed as set out in the Technical Literature.
- 13.4 All substrates must be primed and the primer allowed to cure before the membrane is installed. Refer to the membrane supplier for primer specification.

Membrane Installation

- 14.1 Installation must not be undertaken where the substrate surface temperature is below 10°C or above 35°C.
- 14.2 All joints, cracks and changes of plane in the membrane must be underlaid with RLA BRW PF Tape if installed where temperatures of 0° C or less are possible.
- 14.3 RLA WPU and WPM Wet Area Membranes must be thoroughly stirred before application.
- 14.4 The membranes must be applied in a minimum of two coats to give a total dry film thickness of 0.9 mm. Subsequent coats must be applied at an opposite direction to the previous coat.
- 14.5 Application can be made by roller [medium/long nap], brush [long bristle], or a rubber or plastic float.
- 14.6 Clean up may be undertaken with water.

Tiling

- 15.1 The membrane must be fully cured before tiling. The cured membrane 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. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer and RLA Polymers Pty Ltd.

Inspections

- 16.1 Critical areas of inspection are:
 - Construction of substrates, 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 manufacturer's instructions, particularly installation to the correct thickness.
 - 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 membrane 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 RLA WPU and WPM Wet Area Membranes has been undertaken by BRANZ: testing to AS/NZS 4858, Appendix A including effect of bleach, detergent and water on tensile and elongation, cyclic movement resistance and water absorption.
- 18.2 RLA BRW PF Tape was tested to the requirements of AS/NZS 4858 and AS 4654.1 by XTecGen Material Testing Laboratory, Adelaide.

Other Investigations

- 19.1 An assessment was made of the durability of the RLA WPU and WPM Wet Area Membranes by BRANZ technical experts.
- 19.2 Site inspections have been carried out by BRANZ to examine the practicability of installation.
- 19.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 20.1 The manufacture of the membrane 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 materials to the market is the responsibility of RLA Polymers Pty Ltd.
- 20.4 Quality on-site is the responsibility of trained applicators, approved by RLA Polymers Pty Ltd.
- 20.5 Designers are responsible for the building design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of the substrate manufacturer, RLA Polymers 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 RLA Polymers Pty Ltd.

Sources of Information

- AS 3740:2010 Waterproofing of domestic wet areas.
- AS 3958.1:2007 Guide to the installation of ceramic tiles.
- AS 4654.1:2012 Waterproofing membranes for external above-ground use.
- AS/NZS 2908.2:2000 Cellulose-cement products - Flat sheet.
- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2269:2012 Plywood - Structural.
- AS/NZS 4858:2004 Wet area membranes.
- BRANZ Bulletin Number 585 Measuring moisture in timber and concrete, June 2015.
- NZS 3101:2006 The design of concrete structures.
- NZS 3602:2003 Timber and wood-based products for use in buildings.
- NZS 3604:2011 Timber-framed buildings.
- NZS 4229:2013 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230:2004 Design of concrete 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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23 December 2024

RLA WPU AND WPM
WET AREA MEMBRANES



In the opinion of BRANZ, **RLA WPU and WPM 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 **RLA Polymers 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. **RLA Polymers 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 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 **RLA Polymers 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 **RLA Polymers Pty Ltd** or any third party.

For BRANZ

Claire Falck

Chief Executive

Date of Issue:

23 December 2024