



BRANZ Appraised

Appraisal No.542 [2013]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 542 (2013)**

This Appraisal replaces BRANZ
Appraisal No. 541 (2007).
Amended 1 April 2015

**TECHNOKOLLA
RASOLASTIK AND
RASOGUM WET AREA
MEMBRANES**

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Product

1.1 **TECHNOKOLLA** Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Wet Area Membranes are liquid-applied waterproofing membranes for use under ceramic or stone tile finishes in internal wet areas.



Scope

2.1 Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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, plywood, 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 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 Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Wet Area Membranes on concrete slabs where hydrostatic or vapour pressure is present has not been assessed by BRANZ and 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 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 finishes are outside the scope of this Appraisal.

2.5 The membranes must be installed by Tiling Trade Supplies Ltd Trained and Approved Applicators.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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. Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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 Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Wet Area Membranes will meet this requirement. See Paragraphs 11.1 - 11.7.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Wet Area Membranes meet 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 Materials supplied by Tiling Trade Supplies Ltd are as follows:

Rasogum

- A single component, water-based, fast drying, polymer-based, ready-to-use, liquid-applied membrane. It is supplied as a white or manhattan coloured paste in 5 and 25 kg buckets.

Rasolastik

- A two-part, elastic, cementitious, liquid-applied membrane. It is supplied as a Part A, grey powder in 25 kg multi-wall bags and a Part B, white latex liquid in 8.35 lt plastic containers. When dry, the membrane is grey in colour.

Rasolastik ADV

- A two-part, highly elastic, cementitious, liquid applied membrane. It is supplied as a Part A, grey-blue powder in 22 kg multi-wall bags and a Part B, white latex liquid in 11 lt plastic containers.

Rasolastik EVO

- A single component, highly elastic, cementitious, liquid applied membrane. It is supplied as a grey powder in 20 kg multi-wall bags to which water is added at the correct ratio.

Strip RL 80 S

- A cold adhesive strip made from a viscoelastic layer covered with a non woven fabric made from 30 g/m² polypropylene. This strip is used for reinforcing all floor/wall joints, wall/wall joints, fractionizing joints and floor joints. It is available as a roll 85 mm wide and 10 m long.

Primer - T

- A single component, water-based primer for walls only. It is supplied as a pink coloured emulsion in 5 and 25 kg pails.

Primergum

- A single component, water-based primer for when Rasogum is being applied over wood or polished concrete. It is supplied as a grey coloured emulsion in 6 kg pails.

Fibre Glass Netting

- A 100% glass fibre netting used as a thickness gauge to ensure the correct thickness is applied. It is supplied as a 50 m² roll with a glass weight of 92 g/m².

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 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 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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.

Design Information

General

7.1 Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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 Rasogum 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 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 to Tiling.

7.5 Timber framing systems 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 systems 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 sanded C face upwards and treated to H3.2 (CCA treated). **LOSP treated plywood must not be used.** The Plywood must be supported with dwangs or framing with a maximum span of 400 mm in each direction, fixed with 10g x 50 mm stainless steel countersunk head screws at 150 mm centres around the edges and 200 mm through the body of the sheets.

Fibre Cement Compressed Sheet/Fibre Cement Sheet Tile Underlay

8.2 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 covered by a valid BRANZ Appraisal for use in internal wet areas. Installation must be in accordance with the instructions of the manufacturer.

Concrete and Concrete Masonry

8.3 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 floors to NZS 3604 and Concrete masonry to NZS 4229 and NZS 4230.

Wet Area Wall Linings

8.4 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588, and be covered by a valid BRANZ Appraisal for use in internal wet areas.

8.5 Fibre cement sheet must be covered by a valid BRANZ Appraisal for use as a wall lining system in wet areas.

Durability

Serviceable Life

9.1 The Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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 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 membranes, 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 Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum 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 Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Wet Area Membranes are suitable for use to contain accidental overflow to meet code compliance with NZBC Clause E3.3.2. A means of code compliance for overflow is given in NZBC Acceptable Solution E3/AS1 Section 2.

11.3 Surfaces must be finished with ceramic or stone tile finishes. A means of code compliance with NZBC Clause E3.3.3 is given in NZBC Acceptable Solution E3/AS1 Paragraphs 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 1500 mm out from the shower rose. Floor wastes must be provided and the floor must fall to the outlet.

11.5 The waterproofing membranes must completely cover shower bases, and for unenclosed showers it must extend a minimum of 1500 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 to 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 where plywood floors are used.

Installation Information

Installation Skill Level Requirement

12.1 Installation of the membranes must be completed by Tiling Trade Supplies Ltd Trained and Approved Applicators.

12.2 Installation of substrates must be completed by tradespersons with an understanding of internal wet area construction, in accordance with instructions given within the Tiling Trade Supplies Ltd Technical Literature and this Appraisal.

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 moisture content of a timber substructure must be a maximum of 20% and plywood sheet substrate must be dry to touch at the time of membrane application.

13.3 Concrete substrates 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.

13.4 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 Strip RL 80 S bond breaker joint system installed as set out in the Technical Literature.

13.5 Substrates must be primed and allowed to cure 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 Rasolastik and Rasolastik ADV require that the powder (Part A) and liquid (Part B) are mixed and left to stand for 5 minutes before re-mixing, then applying. Rasolastik EVO requires that the powder is mixed with water and left to stand for 5 minutes before re-mixing, then applying. Rasogum must be thoroughly stirred before application.

14.3 The membranes 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 the Rasogum membrane must be a minimum of 1 mm and the Rasolastik, Rasolastik ADV and Rasolastik EVO Membranes must be a minimum of 2 mm.

14.4 Application can be made by roller (medium/long nap), brush (long bristle), or notched steel trowel (finished with a flat steel trowel).

14.5 Strip RL 80 S reinforcement is laid onto the substrate before the first coat is applied to provide movement protection at wall/wall and wall/floor junctions, or any other areas such as joints in the flooring substrate, floor cracks, or around penetrations in the membrane. In all other situations, reinforcement provisions as set out in this Appraisal and the Technical Literature apply.

14.6 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 'Good Practice Guide to Tiling'. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Tiling Trade Supplies Ltd.

Inspections

16.1 The Technical Literature must be referred to during the inspection of membrane installations by Building Consent Authorities and Territorial Authorities.

16.2 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 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 is provided in the Technical Literature. The materials must be used in conjunction with the relevant Material Safety Data Sheet.

- Rasolastik ADV and EVO in accordance with EN 14891 for tensile adhesion, tensile adhesion after water contact (20 days immersion), tensile adhesion after heat aging (14 days at 70°C), tensile adhesion after lime water contact (7 days at pH>12), waterproofing (7 days at 150 KPa), crack bridging ability (23°C and -20°C), tensile adhesion after freeze-thaw cycles (25 cycles from 15°C to -15°C) and tensile adhesion after chlorinated water contact (7 days)

18.2 Test methods and results were reviewed by BRANZ and found to be satisfactory.

Other Investigations

19.1 An assessment was made of the durability of the Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Wet Area Membranes by BRANZ technical experts.

19.2 Site visits 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 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.

20.2 The quality management system of the membranes manufacturer has been assessed and found to be satisfactory.

20.3 The quality of manufacture of the membranes is the responsibility of the manufacturer.

20.4 The quality of supply of the membrane system materials to the market is the responsibility of Tiling Trade Supplies Ltd.

20.5 Quality on site is the responsibility of the Tiling Trade Supplies Ltd Trained and Approved applicators.

20.6 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, Tiling Trade Supplies Ltd and this Appraisal.

20.7 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of Tiling Trade Supplies Ltd.

Basis of Appraisal

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

Tests

18.1 Testing has been undertaken by various organisations on the Rasolastik, Rasolastik ADV, Rasolastik EVO and Rasogum Waterproofing Membranes:

- Rasolastik and Rasogum in accordance with; EN 14891 for strength as a function of heat aging, water immersion, exposure to chlorinated water, exposure to alkali, freeze-thaw, static head, water vapour permeability, crack bridging and joint strength.
- Rasogum for water tightness, adhesion and stability to deformation.

Sources of Information

- AS/NZS 1170: 2002 Structural design actions.
- AS/NZS 2908.2: 2000 Cellulose-cement products – Flat sheet.
- AS/NZS 2269: 2008 Plywood-Structural
- AS 3958.1 Guide to the installation of ceramic tiles.
- EN 14891 March 2003 Liquid applied waterproofing membranes for use beneath ceramic tiling – Definitions, specifications and test methods.
- NZS 3101: 2006 The design of concrete structures.
- NZS 3604: 2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.
- Good Practice Guide to Tiling, BRANZ, March 2004.



BRANZ

In the opinion of BRANZ, **Rasolastik and Rasogum 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 **Tiling Trade Supplies 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. **Tiling Trade Supplies 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 **Tiling Trade Supplies 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 **Tiling Trade Supplies Ltd** or any third party.

For BRANZ

C Preston
Chief Executive

Amendment No. 1, dated 1 April 2015.

This Appraisal has been amended to add Rasolastik ADV and Rasolastik EVO products.

Date of issue: 19 August 2013