BRANZ Appraised
Appraisal No. 811 [2019]

SIKALASTIC-152 EXTERIOR WATERPROOFING MEMBRANE

Appraisal No. 811 (2019)

This Appraisal replaces BRANZ Appraisal No. 811 (2013)

Amended 02 June 2022

BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

1.1 Sikalastic-152 Waterproofing Membrane is a two-part waterproofing membrane for use under trafficable floor finishes on external decks and balconies.

Scope

2.1 Sikalastic-152 Waterproofing Membrane has been appraised as a waterproofing membrane on buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas; and,
- with building structures designed and constructed to meet the requirements of the NZBC; and,
- with deck and balcony supporting structures of timber framing with substrates of plywood; and,
- with substrates of suspended concrete slabs; and,
- situated in all Wind Zones of NZS 3604 up to, and including, Extra High.

2.2 Sikalastic-152 Waterproofing Membrane has also been appraised for use as a waterproofing membrane on specifically designed buildings within the following scope:

- with building structures designed and constructed to comply with the NZBC; and,
- with deck and balcony supporting structures of timber framing with substrates of plywood and fibre cement compressed sheet; and,
- with substrates of suspended concrete slab; and,
- subjected to maximum wind pressures [refer to Paragraph 7.8]; and,
- with the weathertightness design of all junctions being the subject of specific design by the designer.

[Note: The design of these junctions has not been appraised by BRANZ and is outside the scope of this Appraisal.]

2.3 Decks and balconies waterproofed with Sikalastic-152 Waterproofing Membrane must be designed and constructed in accordance with the following limitations:

- constructed to suitable falls [refer to Paragraphs 12.3–12.6]; and,
- with the membrane continually protected from physical damage by trafficable floor finishes; and,
- with decks and balconies designed and constructed such that deflections do not exceed 1/360th of the span; and,
- with no steps within the deck level, no integral roof gardens and no down pipes discharging directly onto the deck.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

2.4 Movement and control joints in the substrate must be carried through to the trafficable floor 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 and is outside the scope of this Appraisal.

2.5 Trafficable floor finishes are outside the scope of this Appraisal.

2.6 The membrane must be installed by trained installers, approved by Sika [NZ] Ltd.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, Sikalastic-152 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. Sikalastic-152 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 Sikalastic-152 Waterproofing Membrane meet these requirements. See Paragraphs 12.1-12.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Sikalastic-152 Waterproofing Membrane meets this requirement.

Technical Specification

4.1 Materials supplied by Sika [NZ] Ltd are as follows:

- **Sikalastic-152** is a two-component, fibre reinforced mortar, based on cement-modified polymers. It has a very low elastic modulus and is designed to be used to waterproof substrates that are to be covered by trafficable floor finishes. It is supplied as an 8 kg Part A liquid and a 25 kg Part B powder, with a final mixed colour of grey.
- **Sika Primer-11W** is a water-based primer for cement-based substrates, plaster and plasterboard. It is a red liquid supplied in a 5 kg bottle can.
- **Sika Primer-21W** is an epoxy-based primer for non-porous substrates. It is a light blue liquid and supplied in a 5 kg bottle can.
- **Sika SealTape** is a reinforcement tape with a woven bonding mesh and an expansion zone the middle to be used to reinforce all changes of direction. It comes as performed corners, wall flashings, floor flashings and rolls. It is 0.6 mm thick and coloured yellow/white.

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 details of the current Technical Literature for Sikalastic-152 Waterproofing Membrane. 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.

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Design Information

General

7.1 Sikalastic-152 Waterproofing Membrane 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 from physical damage by trafficable floor finishes.

7.3 The membrane may be exposed in non-trafficable areas such as deck upstands, between tiles and cladding, window and door reveals.

7.4 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membranes. Refer to the BRANZ publication 'Good Practice Guide: Membrane Roofing'.

7.5 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 publication 'Good Practice Guide: Tiling'.

7.6 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 that all sheet edges are fully supported.

7.7 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%.

7.8 Sikalastic-152 Waterproofing Membrane is suitable for use in areas subject to maximum wind pressures of 6 kPa ultimate limit state.

Substrates

Plywood

8.1 Plywood must be treated to H3 (CCA treated). LOSP treated plywood must not be used. Plywood must comply with NZBC Acceptable Solution E2/AS1 Paragraph 8.5.3 and 8.5.5.

Fibre Cement Compressed Sheet

8.2 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 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 instructions of the manufacturer.

Concrete

8.3 Concrete substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101.

Durability

Serviceable Life

9.1 Sikalastic-152 Waterproofing Membrane, 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 trafficable floor finishes with a design service life of 15-25 years.

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Maintenance

10.1 No maintenance of the membrane will be required provided significant substrate movement does not occur and the floor finish remains intact. Regular checks must be made of the floor finish to ensure it is sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately.

10.2 In the event of damage to the membrane, the trafficable floor finish 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 floor 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 Sikalastic-152 Exterior Waterproofing Membrane from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and 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, Sikalastic-152 Waterproofing Membrane 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 weathertight deck or balcony.

12.3 The minimum fall to decks and balconies is 1 in 40, and gutters are 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 Sikalastic-152 Waterproofing Membrane 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.

12.5 Deck and balcony falls must be built into the substrate and not created with mortar screeds applied over the membrane.

12.6 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.

12.7 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.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Installation Information

Installation Skill Level Requirement

13.1 Installation must always be carried out in accordance with the Sikalastic-152 Waterproofing Membrane Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence Class.

13.2 Installation and finishing of components and accessories supplied by Sika [NZ] Ltd and its approved installers must be completed by trained installers, approved by Sika [NZ] Ltd.

13.3 Installation of the accessories supplied by the building contractor must be carried out in accordance with the Sikalastic-152 Waterproofing Membrane Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence 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 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.

14.3 The moisture content of the timber substructure and plywood must be a maximum of 20% and fibre cement and plywood sheets must be dry at time of membrane application. This will generally require plywood and fibre cement sheets to be covered until just before the membrane is laid, to prevent rain wetting.

14.4 Substrates must be primed with the specified primer and allowed to dry fully before the membrane is installed.

Membrane Installation

15.1 Installation must not be undertaken where the substrate surface temperature is below 5°C or above 35°C.

15.2 Sikalastic-152 liquid and Sikalastic-152 powder must be mixed and left to stand for 5 minutes before re-mixing, then 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 maximum recommended thickness for each coat is 2 mm. The total finished system thickness must be a maximum of 4 mm.

15.4 Application can be made by steel trowel as specified in the Technical Data.

15.5 In all situations, reinforcement provisions as set out in the Technical Literature apply.

15.6 It is strongly recommended that the membranes are 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.

Floor Finishes

16.1 The membrane must be fully cured before applying or installing the floor finish. The cured membrane must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.

16.2 Any tiling must be undertaken in accordance with AS 3958.1 and the BRANZ Good Practice Guide: Tiling. The compatibility of tile adhesive must be confirmed with the adhesive manufacturer or Sika [NZ] Ltd.

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Inspections

17.1 Critical areas of inspection for waterproofing systems 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 trafficable floor finishes, including protection from moisture, frost and mechanical damage during curing.

Health and Safety

18.1 Safe use and handling procedures for the membrane systems are provided in the Technical Literature. The products must be used in conjunction with the relevant materials safety data sheet for each membrane.

Basis of Appraisal

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

Tests

19.1 The material properties of Sikalastic-152 Waterproofing Membrane have been assessed by various organisations. The results of this testing have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

20.1 An assessment was made of the durability of Sikalastic-152 Waterproofing Membrane by BRANZ technical experts.

20.2 Site inspections were carried out by BRANZ to examine the practicability of installation.

20.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

21.1 The manufacture of the membrane 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.

21.2 The quality of supply to the market is the responsibility of Sika (NZ) Ltd.

21.3 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the framing system and the substrates.

21.4 Quality on-site is the responsibility of the Sika (NZ) Ltd approved and trained installers.

21.5 Building owners are responsible for the maintenance of the floor finish, in accordance with the instructions of Sika (NZ) Ltd.

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Sources of Information

- AS 3958.1:2007 Ceramic Tiles - Guide to the installation of ceramic tiles.
- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2269:2012 Plywood – Structural.
- AS/NZS 2908.2:2000 Cellulose-cement products – Flat sheet.
- AS/NZS 4858:2004 Wet area membranes.
- BRANZ Bulletin 585. Measuring Moisture in Timber and Concrete, June 2015.S
- BRANZ Good Practice Guide: Tiling, Third Edition, April 2015.
- BRANZ Good Practice Guide: Membrane Roofing, Second Edition, October 2015.
- NZS 3101:2006 Concrete structures standard.
- 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.

Amendments

Amendment No. 1, dated 02 June 2022.

This Appraisal has been amended to reflect building code updates relating to fire and to include trafficable floor finishes.

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BRANZ

In the opinion of BRANZ, Sikalastic-152 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 Sika (NZ) 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. Sika (NZ) 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 Sika (NZ) 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 Sika (NZ) Ltd or any third party.

For BRANZ

Chelydra Percy
Chief Executive

Date of Issue:
14 June 2019

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