



BRANZ Appraised
Appraisal No. 724 [2023]

AQUABLOK INTERIOR WATERPROOFING MEMBRANES

Appraisal No. 724 [2023]

This Appraisal replaces BRANZ
Appraisal No. 724 [2017]

CTA™ CONSTRUCTION
TECHNOLOGIES
AUSTRALIA



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 AquaBlok Interior Waterproofing Membranes are single and two-part waterproofing membranes for use under trafficable floor finishes in internal wet areas.

Scope

- 2.1 AquaBlok Interior Waterproofing Membranes have been appraised for use as waterproofing membranes for the 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 trafficable floor finishes; and,
 - where floors are designed and constructed such that deflections do not exceed 1/360th of the span.
- 2.2 The use of AquaBlok Interior Waterproofing Membranes on concrete slabs where hydrostatic or vapour pressure is present from below is outside the scope of this Appraisal.
- 2.3 Movement and control joints in the substrate must be carried through to the membrane and trafficable floor 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 trafficable floor finishes are outside the scope of this Appraisal.
- 2.5 The membranes must be installed by trained applicators, approved by Sika (NZ) Ltd.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, AquaBlok Interior Waterproofing 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. AquaBlok Interior Waterproofing Membranes meet this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating AquaBlok Interior Waterproofing Membranes meet this requirement. See Paragraphs 11.1-11.6.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. AquaBlok Interior Waterproofing Membranes meet this requirement.

Technical Specification

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

- **AquaBlok SBR** is a styrene-butadiene copolymer-based, one-part, ready-to-use, liquid-applied membrane supplied as a thixotropic paste in 4 and 15 L pails.
- **AquaBlok 2 Part** is a quick drying, latex-based, two-part, flexible, cementitious-based, liquid-applied membrane. It is supplied as AquaBlok Part A liquid in 10 L pails and AquaBlok Part B powder in 15 kg bags. When dry, the membrane is light grey in colour.
- **AquaBlok WPU** is a one-part, water-based, micro fibre reinforced elastomeric waterproofing membrane. It is supplied in 15 L pails.
- **Eco Prime WB Primer** is a synthetic, latex-based liquid which is used for priming a variety of substrates prior to the application of the AquaBlok Waterproofing Membranes. It is supplied in 5 and 20 L containers.
- **Eco Prep N Primer** is suitable for the priming of non-porous substrates prior to the application of Aquablok waterproofing membranes. It is supplied in 1 and 4 L containers.
- **Sika SealTape** is a reinforcement tape with a woven bonding mesh and an expansion zone in the middle, to be used to reinforce all changes of direction. It comes as preformed 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 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:

- Technical Data Sheet Aqua Blok SBR, Issue 1.
- Technical Data Sheet AquaBlok WPU, Issue 6/11/2017.

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 AquaBlok Interior Waterproofing 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 by the application of trafficable floor finishes.
- 7.3 Movement and control joints may be required depending on the shape and size of the building or room, and the floor finish specified. Design guidelines can be found in the BRANZ Good Practice Guide: Tiling.
- 7.4 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 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. The plywood must be supported with dwangs or framing with a maximum span of 400 mm in each direction and fixed with 10 g x 50 mm stainless steel countersunk head screws at 150 mm centres on the edges and 200 mm through the body of the sheets.

Fibre Cement Compressed Sheet/Fibre Cement Sheet Tile Underlay

- 8.3 Fibre cement compressed sheet and tile underlay 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 membrane substrate. Installation must be carried out 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 comply with AS/NZS 2908.2 and be suitable for use in wet areas.
- 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 AquaBlok Interior Waterproofing 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 trafficable floor 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 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.

Internal Moisture

- 11.1 AquaBlok Interior Waterproofing 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 Surfaces must be finished with trafficable floor finishes. A means of compliance to NZBC Clause E3.3.3 and E3.3.4 is given in NZBC Acceptable Solution E3/AS1, Paragraph 3.1.1 b), 3.1.2 b) and 3.3.1 b).
- 11.3 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.
- 11.4 AquaBlok Interior Waterproofing Membranes are suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of compliance for overflow is given in NZBC Acceptable Solution E3/AS1, Section 2.
- 11.5 The waterproofing membranes 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, the BRANZ Good Practice Guide: Tiling, and flooring and wall lining manufacturers.
- 11.6 Where water resistant wall finishes such as prefinished sheet materials are used, they must overlap the membrane by a minimum of 30 mm.

Installation Information

Installation Skill Level Requirement

- 12.1 Installation of the membranes must be completed by trained applicators, approved by Sika (NZ) Ltd.
- 12.2 Installation of substrates must always be carried out in accordance with the AquaBlok Interior Waterproofing Membranes Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence Class.



Preparation of Substrates

- 13.1 Substrates must be dry, clean and stable before installation commences. Surfaces must be even 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. The concrete 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 reinforcements installed as set out in the Technical Literature.
- 13.4 Porous substrates must be primed with Eco Prime WB Primer and allowed to dry fully 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 AquaBlok Part B liquid and AquaBlok Part A powder must be mixed and left to stand for 5 minutes before re-mixing, then applying. AquaBlok SBR and WPU 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 to give a total minimum finished thickness of 2 mm. Subsequent coats must be applied in an opposite direction to the previous coat.
- 14.4 Application can be made by roller (medium/long nap), brush (long bristle), or a non-edge serrated flat steel trowel.
- 14.5 The installation and use of any reinforcing must comply with the instructions in the Technical Literature.
- 14.6 Clean up may be undertaken with water.

Floor Finishes

- 15.1 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.
- 15.2 Any tiling must be undertaken in accordance with AS 3958.1 and the BRANZ Good Practice Guide: Tiling. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Sika [NZ] 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 and use of reinforcement.
 - Membrane curing and integrity prior to the installation of trafficable floor finish, including protection from mechanical damage during curing and prior to the floor finish installation.

Health and Safety

- 17.1 Safe use and handling procedures for the membranes 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 AquaBlok Interior Waterproofing Membranes has been undertaken by the following organisations:
- Amdel Limited, Australia – water absorption; tensile strength and elongation; shore A hardness; water vapour transmission; accelerated weathering and low temperature flexibility.
 - CSIRO, Australia – mass per unit area and gravimetric thickness; tensile strength and elongation at break; tensile strength and elongation at break after UV exposure, including immersion in water, bleach and detergent; loss on heating; moving joint test and cyclic strain.
- Test methods and results have been reviewed by BRANZ and found to be satisfactory.
- 18.2 The following testing of AquaBlok Interior Waterproofing Membranes has been undertaken by Amdel Limited, Australia – wet area durability testing in accordance with AS/NZS 4858 covering immersion in water, bleach, detergent, and heat ageing; UV ageing; water absorption; low temperature flexibility and water vapour transmission. Test methods and results have been reviewed by BRANZ and found to be satisfactory.
- 18.3 Although not required by the standard AS/NZS 4858 as water vapour transmission testing had already shown compliance, additional testing of AquaBlok Interior Waterproofing Membranes was also undertaken by Amdel Limited for suitability over particleboard in accordance with AS/NZS 4858, Appendix C, and found to be satisfactory. Test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 19.1 An assessment was made of the durability of AquaBlok Interior Waterproofing Membranes by BRANZ technical experts.
- 19.2 Site inspections were 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 membranes 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 to the market is the responsibility of Sika [NZ] Ltd.
- 20.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the framing systems and the substrates.
- 20.5 Quality on-site is the responsibility of the trained applicators, approved by Sika [NZ] Ltd.
- 20.6 Building owners are responsible for the maintenance of the floor finishes, in accordance with the instructions of Sika [NZ] Ltd.



Sources of Information

- AS 3740-2010 Waterproofing of wet areas within residential buildings.
- AS 3958.1:2007 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.
- BRANZ Good Practice Guide: Tiling, April 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 reinforced 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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08 February 2023

AQUABLOK INTERIOR
WATERPROOFING MEMBRANES



In the opinion of BRANZ, **AquaBlok Interior Waterproofing 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 **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:

08 February 2023