



BRANZ Appraised

Appraisal No. 1123 [2020]

WET-SEAL ENVIRO-COAT IS 520 INTERNAL WATERPROOFING MEMBRANE

Appraisal No. 1123 [2020]

This Appraisal replaces BRANZ
Appraisal No. 655 [2019]

Amended 11 January 2023



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane is a liquid-applied waterproofing membrane for use under ceramic or stone tile finishes in internal wet areas.

Scope

- 2.1 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane has been appraised for use as a waterproofing membrane for internal wet areas of buildings, within the following scope:
 - on floor substrates of concrete, flooring grade particleboard, plywood, fibre cement compressed sheet, fibre cement sheet tile underlay and Strandfloor H3.1® or Strandboard™, 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 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane on concrete slabs where hydrostatic or vapour pressure is present is outside the scope of this Appraisal.
- 2.3 Building structural 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 are specific to each building, and therefore the responsibility of the building designer and building contractor 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 membrane must be installed by Wet-seal New Zealand Ltd trained and approved applicators.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Wet-seal Enviro-coat IS 520 Internal 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. Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane meets this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane meet this requirement. See Paragraphs 11.1-11.7.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane meets this requirement.

Technical Specification

4.1 Materials supplied by Wet-seal New Zealand Ltd are as follows:

- **Wet-seal Enviro-coat™ IS 520** - a one-component, elastic, water-based, moisture-curing, co-polymer waterproofing membrane. It is coloured jade and is supplied in 18 kg pails.
- **Polyspun Enviro Fabric** - a high strength, spun-bonded polyester reinforcement for reinforcing any changes of plane and the body of membrane. It is supplied as a 142 mm wide lineal strip x 100 m roll and 1 m wide x 150 m long roll, and is coloured white.
- **Wet-seal Hydroseal** - a two-part, water-based primer for moist or damp concrete or timber substrates. It is a grey colour and is supplied as 'A' and 'B' in 10 L containers
- **Wet-seal Enviro-prime EP 20 + Primer** - a ready-to-use, water-based, spray-applied primer for use on porous substrates. It is coloured bright violet and is supplied in 15 L containers.
- **Wet-seal Ultra-grip Non-porous Primer** - a one-component, flexible, water-based non-porous grip primer for use on non-porous substrates. It is a grey liquid and is supplied in 15 L pails.
- **Wet-seal Top-coat 300** - a two-component, water-based primer for moist or damp concrete or timber substrates. It is a jade green colour and is supplied as 'A' and 'B' in 10 L containers.
- **Superseal 50FC™** - a high strength, one-component, MS-polymer adhesive sealant. It is used as a gap sealant and is supplied in 600 ml sausages.
- **Tape:**
 - A masking and detail tape, supplied as a 48 mm wide roll and coloured light brown.
 - Linear Fibreglass.
 - Metre Fibreglass.

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 Wet-seal Enviro-coat IS 520 Internal 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.

Design Information

General

- 7.1 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane is 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 membrane must be protected from physical damage 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. 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 sanded C face upwards and treated to H3 [CCA treated]. LOSP treated plywood must not be used. The plywood must be supported with framing with a maximum span of 400 mm, with all sheet edges supported, 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.
- 8.2 When F11/F8 19 mm thick Ecoply plywood is used, the plywood must be supported with framing with a maximum span of 450 mm in one direction only, with all sheet edges supported, 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 tiling 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 substrate. 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 for wet areas.

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 and NZS 3604, and concrete slab-on-ground floors 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 covered by a valid BRANZ Appraisal for use in internal wet areas.
- 8.7 Fibre cement sheet must comply with the requirements of AS/NZS 2908.2.



Strandfloor H3.1®

- 8.8 The installation of Strandfloor H3.1® in wet areas must be undertaken in conjunction with the Technical Literature, NZS 3604, Paragraph 4.3.4 and NZS 3602, Table 1. Strandfloor H3.1® must be installed with centres no greater than 450 mm. Refer to the Technical Literature and BRANZ Appraisal No. 677 for more information.

Strandboard™

- 8.9 The installation of Strandboard™ in wet areas must be undertaken in conjunction with the Technical Literature, NZS 3604, Paragraph 4.3.4 and NZS 3602, Table 1. Strandboard™ must be installed with centres no greater than 450 mm. Refer to the Technical Literature and BRANZ Appraisal No. 664 for more information.

Durability

Serviceable Life

- 9.1 The Wet-seal Enviro-coat IS 520 Internal 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 ceramic or stone tile 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 ceramic or stone tile finishes must be kept clean.

Internal Moisture

- 11.1 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane is impervious to water, and when appropriately designed and installed, will avoid the likelihood of water penetrating behind linings or entering concealed spaces.
- 11.2 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane is suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of code compliance for overflow is given in NZBC Acceptable Solution E3/AS1, Paragraph 2.
- 11.3 Surfaces must be finished with ceramic or stone tile finishes. A means of code compliance to NZBC Clause E3.3.3 and E3.3.4 is 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 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, the BRANZ Good Practice Guide: 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 timber, plywood or particleboard floors are used. This is also a requirement of particleboard manufacturers.



Installation Information

Installation Skill Level Requirement

- 12.1 All design and building work must be carried out in accordance with the Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane Technical Literature and this Appraisal. All building work must be undertaken by Wet-seal New Zealand trained and approved applicators. Where the work involves Restricted Building Work, this must also be completed by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant License 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 the concrete 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 reinforcement installed as set out in the Technical Literature.
- 13.4 Substrates when required must be primed with primer as detailed in the Technical Literature 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 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane must be thoroughly stirred before application.
- 14.3 The membrane must be applied in a minimum two-coat at the rates set out in the Technical Literature to give a total finished dry film thickness of between 0.5-1 mm.
- 14.4 Reinforcement fabric (Polyspun Enviro Fabric) is to be used as the carrier mechanism for the liquid membrane when detailing floor areas, vertical and horizontal joints, over bond breakers, around penetrations and all critical areas as set out in the Technical Literature.
- 14.5 Application can be made by special roller (supplied by Wet-seal New Zealand Ltd) or brush (long bristle).
- 14.6 Polyspun Enviro Fabric reinforcement is laid into the first coat of membrane 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.
- 14.7 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 and the BRANZ Good Practice Guide: Tiling. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Wet-seal New Zealand 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 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 Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane has been undertaken:
- AS/NZS 4858 Appendix A, including effect of heat ageing, bleach, detergent and water on tensile and elongation, water vapour transmission, cyclic movement resistance requirements of AS/NZS 4858 Appendix B, water absorption, peel adhesion, dry pull-off/tensile adhesive test on plywood, dry pull-off/tensile adhesive test on fibre cement, puncture resistance and low temperature flexibility.
- 18.2 The above 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 the Wet-seal Enviro-coat IS 520 Internal Waterproofing Membrane by BRANZ technical experts.
- 19.2 Site inspections 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 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 Wet-seal New Zealand Ltd.
- 20.4 Quality on-site is the responsibility of the Wet-seal New Zealand Ltd trained and approved applicators.
- 20.5 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, Wet-seal New Zealand 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 Wet-seal New Zealand Ltd.



Sources of Information

- AS 3740:2021 Waterproofing of domestic wet areas.
- 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 Good Practice Guide: Tiling, [Third Edition] 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 Code of practice for the design of masonry structures.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 10 December 2021

This Appraisal has been amended to update finalised finished film thicknesses.

Amendment No. 2, dated 11 January 2023

This Appraisal has been amended to add a new primer and update installation information.



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01 October 2020

WET-SEAL ENVIRO-COAT IS 520
INTERNAL WATERPROOFING
MEMBRANE



In the opinion of BRANZ, **Wet-seal Enviro-coat IS 520 Internal 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 **Wet-seal 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. **Wet-seal 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 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 **Wet-seal 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 **Wet-seal New Zealand Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

01 October 2020