



**BRANZ Appraised**  
Appraisal No. 701 [2022]

## ARDEX UNDERTILE EXTERNAL WATERPROOFING MEMBRANES

**Appraisal No. 701 [2022]**

This Appraisal replaces BRANZ  
Appraisal No. 701 [2017]

Amended 27 May 2024



### BRANZ Appraisals

Technical Assessments of  
products for building and  
construction.



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## Product

- 1.1 ARDEX Undertile External Waterproofing Membranes are premixed and two-part, liquid-applied waterproofing membranes for use under ceramic or stone tile finishes, or for under screed, on external decks and balconies.

## Scope

- 2.1 ARDEX Undertile External Waterproofing Membranes have been appraised for use as waterproofing membranes for pedestrian decks and balconies within the following scope:
- on substrates of plywood or fibre cement compressed sheet on timber frame construction; or,
  - on substrates of concrete; and,
  - when protected from ultraviolet (UV) exposure and physical damage by ceramic or stone tiles, or screed; and,
  - where decks and balconies are designed and constructed such that deflections do not exceed 1/360<sup>th</sup> of the span.
- 2.2 The structural and weathertightness design for each specific structure is the responsibility of the building designer.
- 2.3 The ceramic or stone tile finishes, or screed requirement, are outside the scope of this Appraisal.
- 2.4 Installation of ARDEX Undertile External Waterproofing Membranes and accessories must be carried out by trained installers, approved by ARDEX Australia Pty Ltd.

## Building Regulations

### National Construction Code (NCC)

- 3.1 In the opinion of BRANZ, ARDEX Undertile External 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 NCC:

#### NCC 2022 Volume One - Building Code of Australia

**Part F3 ROOF AND WALL CLADDING:** Performance F3P1. ARDEX Undertile External Waterproofing Membranes meet this requirement. See Paragraphs 13.1–13.7.

#### NCC 2022 Volume Two - Building Code of Australia

**Part H2 DAMP AND WEATHERPROOFING:** Performance H2P2. ARDEX Undertile External Waterproofing Membranes meet this requirement. See Paragraphs 13.1–13.7.

## Technical Specification

4.1 Materials supplied by ARDEX Australia Pty Ltd are as follows:

- **ARDEX WPM 002 Two Part Bathroom and Balcony** is a fast drying, two-part, flexible, cementitious-based, liquid-applied membrane containing micro-fibres. It is supplied as WPM 002 Part A Liquid in 20 kg pails and WPM 002 Part B Powder in 20 kg multi-wall bags. When dry, the membrane is light grey in colour.
- **ARDEX WPM 130 Builders Express** is a one-part, water-based polyurethane-acrylic, ready-to-use, liquid-applied, rapid setting membrane. It is supplied in 15 L pails and is a light blue colour.
- **ARDEX WPM 155 Rapid Plus** is a one-part, water-based polyurethane-acrylic, ready-to-use, liquid-applied, rapid setting membrane. It is supplied in 4 and 15 L pails and is a blue colour.
- **ARDEX WPM 265 Primer** is a water-based primer used to seal substrates and enhance the adhesion of the membranes. It is supplied in 20 kg plastic containers as a red coloured liquid.
- **ARDEX WPM 300 Primer** is a two-component, water-based epoxy surface primer used to seal concrete substrates. It is supplied in 4 or 20 L kits and is a grey/black colour.
- **ARDEX STB Tape** is an uncured butyl tape with a fleece layer that is used with ARDEX WPM 002, or ARDEX WPM 155 Rapid Plus, or ARDEX WPM 130 Builders Express.

## 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 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 This Appraisal must be read in conjunction with:

- ARDEX WPM 002 [Superflex Bathroom and Balcony Two Part], February 2021.
- ARDEX WPM 130 Builder's Express Construction and Bathroom Membrane, October 2023.
- ARDEX WPM 155 Rapid Plus, November 2020.

6.2 All aspects of design, use, installation and maintenance contained within the scope of this Appraisal and the Technical Literature must be followed.

## Design Information

### General

- 7.1 ARDEX Undertile External Waterproofing Membranes are for use where impervious waterproof membranes are required on decks and balconies to prevent damage to building elements and adjoining areas.
- 7.2 The membranes must be covered with ceramic or stone tile finishes, or a screed, within 14 days. The finishes must protect the membrane from exposure to UV light and physical damage.
- 7.3 Movement and control joints may be required depending on the shape and size of the deck and the tiling finish. Design guidance can be found in the BRANZ Good Practice Guide: Tiling.
- 7.4 Effective control of moisture in the structure and from within the building must be considered due to the impermeability of the membrane.
- 7.5 Where the system abuts cladding systems, designers must detail the junction to meet their own requirements and the performance requirements of the NCC. Details not included within the Technical Literature have not been assessed and are outside the scope of this Appraisal.

## Substrates

### Fibre Cement Compressed Sheet

- 8.1 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 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 the instructions of the manufacturer.

### Concrete

- 8.2 Concrete substrates must be to a specific engineering design meeting the requirements of the NCC.

## Durability

### Serviceable Life

- 9.1 ARDEX Undertile External 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 ceramic or stone tile finishes with a design serviceable life of 15–25 years. This is conditional on the membranes not being exposed to the weather or UV light for a total of more than 14 days.

## Maintenance

- 10.1 No maintenance of the membranes will be required provided significant substrate movement does not occur and the tiling finish remains intact. Regular checks must be made of 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 sealants.
- 10.2 In the event of damage to the waterproofing membrane, the tiling must be removed. Repair can be carried out by applying a patch of suitable membrane.
- 10.3 Drains and outlets must be maintained to operate effectively, and tiling finishes must remain clean.

## Outbreak of Fire

- 11.1 ARDEX Undertile External Waterproofing Membranes must be protected or separated from fireplaces, heating appliances, chimneys and flues, in accordance with the requirements of NCC Volume One, Part G2, Performance G2P1, and NCC Volume Two, Part H7, Performance H7P3.

## Spread of Fire

- 12.1 ARDEX Undertile External Waterproofing Membranes are considered an exempt building material, in accordance with NCC Volume One, Deemed-to-Satisfy Provision C2D11 [3].

## External Moisture

- 13.1 Decks and balconies must be designed and constructed to meet code compliance with NCC Volume One, Part F3, Performance F3P1 or NCC Volume Two, Part H2, Performance H2P2. They must also take account of snowfalls in snow prone areas.
- 13.2 When installed in accordance with this Appraisal and the manufacturer's Technical Literature, ARDEX Undertile External Waterproofing Membranes will prevent the penetration of water and will therefore meet code compliance with NCC Volume One, Part F3, Performance F3P1 and NCC Volume Two, Part H2, Performance H2P2. The membranes are impervious to water and will give a weathertight deck capable of accepting minor structural movements.
- 13.3 ARDEX Undertile External Waterproofing Membranes are impermeable, therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with NCC Volume One, Part F3, Performance F3P1 and NCC Volume Two, Part H2, Performance H2P2.
- 13.4 BRANZ recommends a minimum fall to decks and balconies of 1:40 and that all falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane and tile finish.

- 13.5 Deck and balcony falls must be built into the substrate and not created with mortar screeds applied over the membranes.
- 13.6 Allowance for deflection and settlement of the substrate must be made in the design of the deck or balcony.
- 13.7 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.

## Installation Information

### Installation Skill Level Requirement

- 14.1 Installation and finishing of materials supplied by ARDEX Australia Pty Ltd must be completed in accordance with the Technical Literature, by trained installers, approved by ARDEX Australia Pty Ltd.
- 14.2 Installation of substrates must be completed by tradespersons with a thorough understanding of deck and balcony construction, in accordance with instructions given within the substrate manufacturers Technical Literature and this Appraisal.

### Preparation of Substrates

- 15.1 Substrates must be dry and sound before installation proceeds. Concrete slabs can be checked for dryness by using a hygrometer. The relative humidity of the concrete surface must be 75% or less, and the moisture content for plywood must be a maximum of 20%, before laying the membrane.
- 15.2 Surfaces must be smooth and free from sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents. All surface defects must be filled to achieve a smooth and uniform surface.
- 15.3 Substrates must be primed with an ARDEX Primer and allowed to dry fully before the membrane is installed.

### Membrane Installation

- 16.1 Installation must not be undertaken where the substrate surface temperature is below 10°C or above 35°C.
- 16.2 ARDEX WPM 002 Two Part Bathroom and Balcony liquid and dry components must be mixed and left to stand for 5 minutes before re-mixing, then applying. ARDEX WPM 155 Rapid Plus and ARDEX WPM 130 Builders Express must be thoroughly stirred before application.
- 16.3 The membranes must be applied in a minimum of two coats at the rates set out in the Technical Literature to give a total finished thickness of 0.5-1 mm. Subsequent coats must be applied in an opposite direction to the previous coat.
- 16.4 Application can be made by roller [medium/long nap] or brush [long bristle].
- 16.5 In all situations, reinforcement provisions as set out in this Appraisal and the Technical Literature apply.
- 16.6 It is strongly recommended to protect the membrane with temporary covers until it is fully cured in case of mechanical damage or rain wetting.
- 16.7 Clean up may be undertaken with water.

### Tiling

- 17.1 The membrane must be fully cured before tiling or a screed is overlaid. The cured membrane must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.
- 17.2 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 ARDEX Australia Pty Ltd

## Inspections

- 18.1 Critical areas of inspection for waterproofing systems are:
- Construction of substrates, including crack control and installation of under flashings and movement control joints.
  - Moisture content of the substrate prior to the application of the membranes.
  - Acceptance of the substrate by the membranes installer prior to application of the membrane.
  - Installation of the membranes 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 moisture, frost and mechanical damage during curing.

## Health and Safety

- 19.1 Additional information on ARDEX Undertile External Waterproofing Membranes and accessories is available in the Material Safety Data Sheets available from ARDEX Australia Pty Ltd

## Basis of Appraisal

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

### Tests

- 20.1 The following testing of ARDEX WPM 002 Two Part Bathroom and Balcony has been undertaken by ARDEX Australia Pty Ltd research and development laboratory: water vapour transmission, water absorption, tensile strength and elongation before and after UV exposure, immersion in bleach, immersion in industrial detergent and immersion in water. Test methods and results were reviewed by BRANZ and found to be satisfactory.
- 20.2 Testing of ARDEX WPM 002 Two Part Bathroom and Balcony has been undertaken by BRANZ for low temperature flexibility and peel adhesion after heat/humidity aging.
- 20.3 The following testing of ARDEX WPM 155 Rapid Plus and ARDEX WPM 130 Builders Express was undertaken by various organisations:
- Durability testing to AS/NZS 4858 Appendix A including effect of heat aging, bleach, detergent and water on tensile strength and elongation.
  - Cyclic movement resistance requirements of AS/NZS 4858 Appendix B.
  - Water vapour transmission using both wet and dry cup methods from ASTM E96.
  - Water transmission behaviour following the procedures of AS/NZS 4858 Appendix C.
- 20.4 The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

### Other Investigations

- 21.1 An assessment was made of the durability of the ARDEX Undertile External Waterproofing Membranes by BRANZ technical experts.
- 21.2 Site inspections have been carried out by BRANZ to examine the practicability of installation.
- 21.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

## Quality

- 22.1 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.
- 22.2 The quality management system of the membrane's manufacturer has been assessed by BRANZ and found to be satisfactory.
- 22.3 The quality of supply to the market is the responsibility of ARDEX Australia Pty Ltd.
- 22.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the framing system and substrates.
- 22.5 Quality on-site is the responsibility of trained installers, approved by ARDEX Australia Pty Ltd.
- 22.6 Building owners are responsible for the maintenance of the ceramic or stone tiles in accordance with the instructions of ARDEX Australia Pty Ltd.

## Sources of Information

- AS 3958.1:2007 Ceramic Tiles - Guide to the installation of ceramic tiles.
- 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.
- National Construction Code 2022 - Australian Building Codes Board.

## Amendments

### Amendment No. 1, dated 27 May 2024

This Appraisal has been amended to update the NCC references and update the Technical Literature.



In the opinion of BRANZ, **ARDEX Undertile External 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.

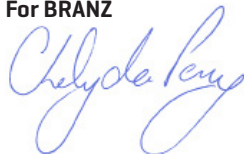
The Appraisal is issued only to **ARDEX Australia Pty Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

### 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. **ARDEX Australia 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 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 **ARDEX Australia 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 **ARDEX Australia Pty Ltd** or any third party.

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**For BRANZ**



**Chelydra Percy**

Chief Executive

Date of Issue:

02 August 2022