



## BRANZ Appraised

Appraisal No. 1013 [2024]

## ARMSTRONG FLOORING

### VINYL WET AREA FLOOR AND WALL FINISHES

#### Appraisal No. 1013 [2024]

This Appraisal replaces BRANZ  
Appraisal No. 1013 [2018]

Amended 14 February 2024



#### BRANZ Appraisals

Technical Assessments of  
products for building and  
construction.

#### Armstrong Flooring

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## BRANZ

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## Product

- 1.1 Armstrong Flooring is a range of sheet vinyls for use as floor and wall finishes in internal wet areas.

## Scope

- 2.1 Armstrong Flooring has been appraised for use as waterproofing membranes for 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, cement render, wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
  - where floors are designed and constructed such that deflections do not exceed  $1/360^{\text{th}}$  of the span.
- 2.2 The use of Armstrong Flooring on concrete slabs where a hydrostatic or vapour pressure is present is outside the scope of this Appraisal.
- 2.3 Movement and control joints in the substrate must be carried through to the vinyl finish. The design and construction of the movement and control joints is specific to the building and therefore is the responsibility of the building designer and building contractor, and is outside the scope of this Appraisal.
- 2.4 Installation of Armstrong Flooring must be carried out by trained installers, approved by Armstrong Flooring.

## Building Regulations

### National Construction Code (NCC)

- 3.1 In the opinion of BRANZ, Armstrong Flooring, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NCC:

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

**Part F2 WET AREAS AND OVERFLOW PROTECTION:** Performance F2P1 and F2P2. Armstrong Flooring meets these requirements. See Paragraphs 13.1–13.4.

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

**Part H4 HEALTH AND AMENITY:** Performance H4P1. Armstrong Flooring meets this requirement. See Paragraphs 13.1–13.4.

## Technical Specification

- 4.1 Materials supplied by Armstrong Flooring are as follows:
- **Accolade Range - Plus** is a homogeneous vinyl with a slightly embossed surface and without polyurethane finish. It is available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **Accolade Range - Foothold** is a homogeneous vinyl with an embossed surface and protective polyurethane finish. It is available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **Accolade Range - Safe** is a homogeneous vinyl with an embossed surface and without polyurethane finish. It is available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **Safeguard Range - R10, R11, R12 and Design** are heterogeneous vinyl featuring aluminium oxide, quartz and silicon carbide which provides a slip resistance durability. They are available in rolls 2 m wide x 20 m long and 2 mm thick in various colours.
  - **Wallflex** is a homogeneous wall vinyl with a protective polyurethane finish. It is available in rolls 1.5 m wide x 20 m long and 2 mm thick in various colours.
  - **Australis** is a homogeneous vinyl with an embossed surface and protective polyurethane finish. It is available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **Quantum** is a homogeneous vinyl with an embossed surface and protective polyurethane finish.. It is available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **Natralis Range [Natralis]** is a homogeneous vinyl with an embossed surface and polyurethane finish. It is are available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **Natralis Range [Foothold]** is a homogeneous vinyl with an embossed surface and a polyurethane finish. It is available in rolls 1.83 m wide x 16 m long and 2 mm thick in various colours.
  - **LVT-100 – Luxury Vinyl Tile and Plank Adhesive** is a one-part, water-based acrylic adhesive for indoor applications.
  - **SV-200 – Acrylic Sheet Vinyl Adhesive** is a one-part, water-based acrylic adhesive for indoor applications.
  - **Armstrong SC-100 – Contact Adhesive** is a solvent-based contact adhesive. [Alternative: RLA Brushable Contact Adhesive or Roberts Brushable Contact Adhesive].
  - **ARDEX AF 180 MS** is a one-component, solvent-free, heavy duty MS polymer-based adhesive. It is supplied in 12 kg plastic tubs. [Alternative: NEXUS Adhesives MS570 MS polymer-based adhesive].
  - **Accessories** – Cove Fillet and Weld Rod.

## 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 the 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:
- Deemed to Satisfy Wet Area Solutions, version AW0070, April 2023.
  - National Construction Code Compliant “Deemed to Satisfy” Wet Areas - Installation Guide, Issue 2, April 2023.
- 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 Armstrong Flooring is for use where an impervious waterproof finish is required to floors and walls to prevent damage to building elements and adjoining areas.
- 7.2 Movement and control joints may be required depending on the shape and size of the floor.
- 7.3 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 1/360<sup>th</sup> of the span.

### Substrates

#### Plywood

- 8.1 Structural plywood must be a minimum of 17 mm thick complying with AS/NZS 2269. LOSP treated plywood must not be used. The structural plywood must be supported with joists at a maximum spacing as detailed in AS 1684.3, Table 3.2. The plywood must be fixed with either 2.8 mm diameter flat head or bullet head hand-driven nails, or 2.5 mm diameter gun-driven nails with a length not less than 2.5 times the thickness of the plywood sheet. The plywood must be fixed at 150 mm centres along the sheet ends and 300 mm centres at intermediate joists and along noggings.

#### Particleboard

- 8.2 Particleboard must be specified for the end use in accordance with AS 1860.

#### 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.

#### Concrete and Concrete Masonry

- 8.4 Concrete and concrete masonry substrates must be to a specific engineering design meeting the requirements of the NCC.

#### Wet Area Wall Linings

- 8.5 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588 and be suitable for use in internal wet areas.
- 8.6 Fibre cement sheet must be suitable for use in wet areas and comply with AS/NZS 2908.2.
- 8.7 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 Armstrong Flooring, when subjected to normal conditions of environment and use, is expected to have a serviceable life of at least 15 years. Armstrong Flooring meets the requirements of AS/NZS 4858 and is compatible and resists exposure as required by AS 3740 Clause 2.2 [b].

### Maintenance

- 10.1 The normal/routine maintenance for vinyl will be required to ensure that the deemed-to-satisfy requirements are maintained. Regular checks must be made of the vinyl areas to ensure they are sound and will not allow moisture to penetrate.
- 10.2 In the event of damage to the vinyl, the vinyl must be removed and repaired as for new work.
- 10.3 Drainage outlets must be maintained to operate effectively, and vinyl finishes must be kept clean.

## Outbreak of Fire

- 11.1 Armstrong Flooring 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 Armstrong Flooring 'Quantum' vinyl wall cladding achieves product Group Number of 3, in accordance with AS 5637.1. Quantum vinyl flooring has a mean CHF value of 7.9 kW/m<sup>2</sup>, with mean non-directional smoke value of 148%.minutes, in accordance with AS ISO 9239.1.
- 12.2 Armstrong Flooring 'Natalis' range [Natalis and Foothold] has a CHF value of 9.7 kW/m<sup>2</sup>, with mean non-directional smoke value of 91%.minutes in accordance with AS ISO 9239.1.
- 12.3 Armstrong Flooring 'Australis' range [Australis and Foothold] has a CHF value of 10.9 kW/m<sup>2</sup>, with mean non-directional smoke value of 82%.minutes in accordance with AS ISO 9239.1.
- 12.4 The spread of fire risk for the Natalis and Australis range as detailed above is not exhaustive and is to be assessed on a use case basis.

## Waterproofing of Wet Areas

- 13.1 Armstrong Flooring/Walling can be used to prevent water from penetrating behind fittings and linings or into concealed spaces and therefore meets NCC Volume One, Part F2 Wet areas and overflow protection, Performance F2P1 and F2P2 and NCC Volume Two, Part H4 Health and amenity, Performance H4P1.
- 13.2 NCC Volume One Deemed-to-Satisfy Provision F2D2 [1] [b] and NCC Volume Two Deemed-to-Satisfy Provision H4D2 require compliance with AS 3740 which requires that membranes meet the requirement of AS/NZS 4858. Armstrong Flooring meets the requirements of AS/NZS 4858 and is deemed to be a waterproof material as required by AS 3740 Clause 2.4.1 [d].
- 13.3 Installation must be in accordance with NCC Volume One Deemed-to-Satisfy Provision F2D2, NCC Volume Two Deemed-to-Satisfy Provision H4D3 and AS 3740.
- 13.4 Falls within shower areas must be between 1:60 and 1:80 and other wet areas between 1:80 and 1:100. In unenclosed showers, falls must extend 1,500 mm from the shower rose. Floor wastes and drainage flanges must be provided and must fall to an outlet.

## Installation Information

### Installation Skill Level Requirement

- 14.1 Installation and finishing of materials supplied by Armstrong Flooring must be completed in accordance with the Technical Literature, by trained installers, approved by Armstrong Flooring.
- 14.2 Installation of substrates must be completed by tradespersons with an understanding of internal wet area construction, in accordance with instructions given within the Technical Literature and this Appraisal.

### Preparation of Substrates

- 15.1 Substrates must be dry and sound before installation proceeds. Concrete and timber substrates must be checked for dryness. Moisture content shall be tested in accordance with the requirements and test methods outlined in AS1884. Where moisture content exceeds the relative humidity [RH] or moisture vapour evaporation rate [MVER] stated in AS1884, a suitable damp-proof membrane [DPM] is to be installed as part of the complete flooring system.
- 15.2 The ambient and substrate temperatures must be between 15°C and 28°C before laying the membrane.
- 15.3 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.

- 15.4 Sheet materials must be installed in accordance with the relevant manufacturer's instructions. All sheet edges must be supported by framing.
- 15.5 Plywood must be installed in accordance with the NCC and the relevant manufacturer's instructions.

### Membrane Installation

- 16.1 The vinyl must be installed in accordance with Armstrong Flooring installation instructions, with all joints heat welded.

### Inspections

- 17.1 Critical areas of inspection 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 membrane.
  - Acceptance of the substrate by the vinyl installer prior to application of the vinyl.
  - Installation of the vinyl to the manufacturer's instructions.

### Health and Safety

- 18.1 Safe use and handling procedures for the products 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

- 19.1 The following testing of Armstrong Flooring has been undertaken by the following organisations:
  - BRANZ – testing to AS/NZS 4858, Appendix A and Appendix B on welded joints including effect of bleach, detergent and water; cyclic movement on welded joints; water vapour transmission and water absorption on Accolade Safe, Safeguard R10 and Wallflex products.
  - CSIRO, Australia – testing to AS/NZS 4858, Appendix A and Appendix B including effect of bleach, detergent and water; cyclic movement on welded joints; water vapour transmission and water absorption on Safeguard range R10, R11, R12 and Design.
  - CSIRO, Australia – testing to AS/NZS 4858, Appendix A and Appendix B including effect of bleach, detergent and water; cyclic movement on welded joints; water vapour transmission and water absorption on Accolade Range [Plus, Foothold, Safe] Natralis Range [Natalis, Natralis Foothold], Australis, Quantum and Wallflex.
- 19.2 Test methods and results have been reviewed by BRANZ and found to be satisfactory.

### Other Investigations

- 20.1 An assessment was made of the durability of Armstrong Flooring 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 vinyl flooring 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.
- 21.2 The quality of supply to the market is the responsibility of Armstrong Flooring.
- 21.3 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the framing systems and the substrates.
- 21.4 Quality on-site is the responsibility of the trained installers, approved by Armstrong Flooring.
- 21.5 Building owners are responsible for the maintenance of the vinyl flooring in accordance with the instructions of Armstrong Flooring.

## Sources of Information

- AS 1860.2:2006 Particleboard flooring installation.
- AS 1884:2021 Floor coverings - Resilient sheet and tiles - Installation practices.
- AS 3740:2021 Waterproofing of domestic wet areas.
- AS 5637.1:2015 Determination of fire hazard properties - Wall and ceiling linings.
- AS ISO 9239.1:2003 Reaction to fire tests for floor coverings - Determination of the burning behaviour using a radiant heat source.
- AS/NZS 2269:2012 Plywood - Structural.
- AS/NZS 2588:2018 Gypsum plasterboard.
- AS/NZS 2908.2:2000 Cellulose-cement products - Flat sheet.
- AS/NZS 4858:2004 Wet area membranes.
- National Construction Code 2022, Australian Building Codes Board.

## Amendments

### Amendment No. 1, dated 14 February 2024

This Appraisal has been amended to clarify the substrate moisture measurement method.



In the opinion of BRANZ, **Armstrong Flooring** 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 **Braeside Mills Operations Pty Ltd T/A Armstrong Flooring**, 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. **Braeside Mills Operations Pty Ltd T/A Armstrong Flooring:**
  - 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 quality of work;
  - 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 **Braeside Mills Operations Pty Ltd T/A Armstrong Flooring**.
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 **Braeside Mills Operations Pty Ltd T/A Armstrong Flooring** or any third party.

For BRANZ



**Claire Falck**

Chief Executive

Date of Issue:

09 January 2024