



BRANZ Appraised
Appraisal No. 1114 [2020]

DEMTECH SHOWER BASE SYSTEM



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BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 The Demtech Shower Base System is a pre-formed shower base to be used as a substrate for a waterproofing membrane prior to the adhesion of ceramic or stone tiles in internal wet area showers.

Scope

- 2.1 The Demtech Shower Base System is appraised for use as a pre-formed shower base system for wet areas of buildings:
 - on floor substrates of concrete, plywood, particle board and compressed fibre cement sheet; and,
 - on timber or steel wall framing with wet area wall lining; and,
 - when protected from physical damage by ceramic or stone tiles; and,
 - where floors are designed and constructed such that deflections do not exceed 1/360th of the span; and,
 - there being no control or movement joints in the shower areas.
- 2.2 The waterproofing membrane, tile adhesive and the ceramic or stone tile finish are outside the scope of this Appraisal.
- 2.3 The Demtech Shower Base System must be installed by Demtech Australia Pty Ltd trained installers.

Building Regulations

Building Code of Australia [BCA]

- 3.1 In the opinion of BRANZ, the Demtech Shower Base System, 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 National Construction Code [NCC]:

NCC 2019 Building Code of Australia - Volume One [NCC Volume One]

Part F1 – DAMP AND WEATHERPROOFING: Performance FP 1.7. The Demtech Shower Base System contributes to meeting this requirement. See Paragraphs 15.1-15.4.

NCC 2019 Building Code of Australia - Volume Two [NCC Volume Two]

Part 2.4 – HEALTH AND AMENITY: Performance P2.4.1 The Demtech Shower Base System contributes to meeting this requirement. See Paragraph 15.1-15.4.



Technical Specification

- 4.1 The Demtech Shower Base System consists of the following components:
- **Shower base** - made from a high density polyurethane foam with a factory-applied protective coating. It is supplied in various dimensions. It is factory-sealed with the BRANZ Appraised Cureflex waterproofing membrane, Appraisal No. 1003 [2018].

Accessories

- **Aluminium trim** - used as a perimeter around the shower base.
 - **Connectors** - ABS connectors that merge the aluminium trim together.
 - **Waste system** - specified by Demtech Australia Pty Ltd and covered by a WaterMark certification.
 - **Construction adhesive** - specified by Demtech Australia Pty Ltd, used to adhere the shower base to the floor.
 - **Sealant** - specified by Demtech Australia Pty Ltd, used to seal the aluminium trim against the wall and the base; and is also used for the PVC unexposed flashings and waste system components.
- 4.2 Accessories used with the Demtech Shower Base System which are supplied by the building contractor, such as waterproofing membrane, tile adhesive and tiles, are outside the scope of this Appraisal:

Handling and Storage

- 5.1 The Demtech Shower Base System is supplied in cardboard boxes. It must be stored inside, in dry conditions, out of direct sunlight and extremes of temperature. Care must be taken to avoid damage to the edges, ends and surfaces of the components. The shower base must always be carried on edge.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Demtech Shower Base System. 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 The Demtech Shower Base System is designed as a tile substrate for interior showers fixed over new or existing floors. It provides a screed replacement panelling system, allowing for a waterproofing membrane to be applied and then the direct adhesion of ceramic tiles.
- 7.2 Waterproofing of the walls is outside of the scope of this Appraisal but must be completed after the installation of the Demtech Shower Base System.
- 7.3 Once the installation of the Demtech Shower Base System is completed, a suitable BRANZ appraised waterproofing system meeting AS 3740 shall then be installed. Tiles shall then be adhered to the waterproofed system and grouted to provide an impervious and easily cleaned surface.

Substrates

Floor linings

- 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 internal substrate. The fibre cement sheet must be of a thickness to meet specific structural design requirements, such as deflection from gravity and live loads. Installation must be in accordance with the instructions of the manufacturer.
- 8.2 Concrete substrates must be to a specific engineering design meeting the requirements of the BCA, AS 3600 and AS 2870.



- 8.3 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.
- 8.4 The plywood must be laid with the face grain at right angles to the floor joists. Joists must be at 450 mm centres maximum and the edges of the sheets must be supported with blocking or framing. The plywood must be fixed with 10 g x 50 mm stainless steel countersunk head screws at 150 mm centres along the sheet edges and 200 mm centres to all framing through the body of the sheets.
- 8.5 Flooring grade particle board sheeting manufactured accordance with AS/NZS 1860.1 and installed in accordance with AS 1860.2

Structure

- 9.1 Existing floors must be inspected and be of good condition and have equivalent performance to a new floor. If present, mould or fungal growth on the wall or floor substrate should be treated prior to fixing the Demtech Shower Base System. Demtech Australia Pty Ltd may need to be consulted for suitable anti-fungal products.
- 9.2 All floors, new and existing, will be structurally suitable for tiling when the maximum deflection of the floor joists is 1/360th of the span.
- 9.3 The Demtech Shower Base System is capable of resisting a uniformly distributed load of 1.5 kN/m² with minimal deflection. The level of resistance to concentrated loads will depend upon the size and strength of the tiles used to cover the Demtech Shower Base System components.

Wet Area Wall Linings

- 10.1 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588 and be suitable for use in internal wet areas.
- 10.2 Fibre cement sheet must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable in wet areas.

Durability

Serviceable Life

- 11.1 The Demtech Shower Base System will be durable for at least 15 years, provided the tiling system is maintained to ensure the components remain dry in service. Tiles, tile adhesive, and grout have not been assessed and are outside the scope of this Appraisal.

Maintenance

- 12.1 No maintenance of the Demtech Shower Base System 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, grout and sealant.
- 12.2 Drainage outlets must be maintained to operate effectively, and the tile finishes must be kept clean.

Outbreak of Fire

- 13.1 The Demtech Shower Base System must be protected or separated from fireplaces, heating appliances, chimneys and flues in accordance with the requirements of NCC Volume One, Performance GP 2.1, and NCC Volume Two, Performance P2.3.3 and Performance 3.7.3.

Spread of Fire

- 14.1 The Demtech Shower Base System is considered an exempt building material, as listed in BCA Specifications C1.10.



Internal Moisture

- 15.1 Surfaces must be finished with ceramic or stone tile finishes.
- 15.2 Design guidance on waterproofing wet areas, including waterproofing junctions, can be obtained from AS 3740 and the BRANZ Good Practice Guide – Tiling.
- 15.3 The Demtech shower bases are supplied with appropriate falls which must be maintained during the tiling process.
- 15.4 To minimise internal condensation, adequate levels of ventilation and thermal resistance must be provided to all spaces where moisture may be generated.

Installation Information

Installation Skill Level Requirement

- 16.1 Installation of the floor substrates for the Demtech Shower Base System must be completed by trades people with an understanding of internal wet area constructions.
- 16.2 Installation of the Demtech Shower Base System must always be carried out in accordance with the Demtech Shower Base System Technical Literature, by Demtech Australia Pty Ltd trained installers, before waterproofing the walls.

Preparation

- 17.1 The substrate of the existing floor must be clean, level and structural sound.
- 17.2 The relative humidity of concrete substrates must be 75% or less before installation of the Demtech Shower Base System components. The concrete can be checked for dryness using a hygrometer as set out in BRANZ Bulletin No. 585.
- 17.3 The floor must be free of dirt, dust and grease before installing prefabricated shower tray.

System Installation

- 18.1 It is recommended that the installer dry fit the components of the Demtech Shower Base System before final fixing to ensure a good fit.
- 18.2 The installation of the Demtech Shower Base System must be in accordance with the instructions given within the Demtech Australia Pty Ltd Technical Literature and this Appraisal.
- 18.3 After the Demtech Shower Base System is installed, a suitable BRANZ Appraised membrane shall be installed.

Tiling

- 18.4 Tiling must be carried out using a flexible polymer-modified cementitious based tile adhesive in accordance with the tile adhesive manufacturer's instructions.
- 18.5 Tiling must be undertaken in accordance with AS 3958.1 and the BRANZ Good Practice Guide – Tiling.

Inspections

- 19.1 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 shower base system.
 - Acceptance of the substrate by the shower base system installer prior to application of the shower base system.
 - Installation of the shower base system to the manufacturer's instructions, particularly use of the correct reinforcement.

Health and Safety

- 20.1 Safe use and handling procedures for the Demtech Shower Base System is 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

- 21.1 The following testing of the Demtech Shower Base System 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.
 - The following testing of Demtech Shower Base System 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.
 - Although not required by the standard AS/NZS 4858 as water vapour transmission testing had already shown compliance, additional testing of Demtech Shower Base System was also undertaken by Amdel Limited for suitability over particleboard in accordance with AS/NZS 4858, Appendix C, and found to be satisfactory.
- 21.2 Test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 22.1 An assessment was made of the durability of the Demtech Shower Base System by BRANZ technical experts.
- 22.2 Site inspections were carried out by BRANZ to assess the practicability of installation.
- 22.3 The Technical Literature for the Demtech Shower Base System has been examined by BRANZ and found to be satisfactory.

Quality

- 23.1 The manufacture of the prefabricated shower tray of the Demtech Shower Base System has been examined by BRANZ, including methods adopted for the quality control. Details of the manufacturing processes, and quality and composition of the raw materials used were obtained and found to be satisfactory.
- 23.2 The quality of supply to the market is the responsibility of Demtech Australia Pty Ltd.
- 23.3 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the framing systems and substrates.
- 23.4 Quality on site is the responsibility of the Demtech Australia Pty Ltd trained installers.
- 23.5 Building owners are responsible for the maintenance of the tile finish in accordance with the instructions of Demtech Australia Pty 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 2908.2: 2000 Cellulose-cement products – flat sheet.
- AS/NZS 2269: 2012 Plywood – Structural.
- BRANZ Bulletin No. 585. Measuring Moisture in Timber and Concrete.
- BRANZ Good Practice Guide - Tiling [3rd Edition], 2015.
- National Construction Code Series, Building Code Australia 2019, Australian Building Codes Board.



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19 October 2020

DEMOTECH SHOWER BASE
SYSTEM



In the opinion of BRANZ, the **Demtech Shower Base System** 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 **Demtech 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. **Demtech 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 **Demtech 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 **Demtech Australia Pty Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

19 October 2020