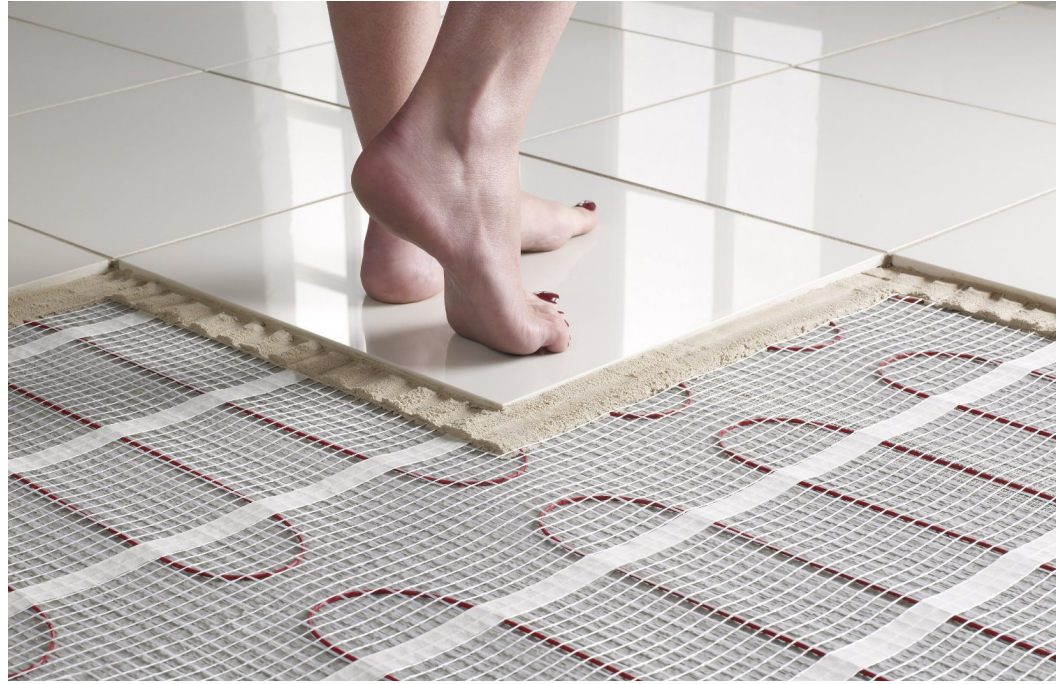




BRANZ Appraised
Appraisal No. 1275 [2024]

THERMAFLOOR UNDERTILE HEATING

Appraisal No. 1275 [2024]



BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 Thermafloor Undertile Heating is an electric heating system intended for floor surface warming of stone and ceramic tile finishes in residential and commercial buildings, including wet areas.

Scope

- 2.1 Thermafloor Undertile Heating has been appraised for use in internal wet and dry areas of buildings, within the following scope:
 - on a structural substrate of concrete, plywood or fibre cement compressed sheet [excluding particle board flooring]; and
 - with fibre cement tile underlay where required; and
 - when protected from physical damage by a screed and ceramic or stone tiles; and
 - where floors are designed and constructed such that deflections do not exceed 1/360th of the span; and
 - where the position of movement and control joints within the substrate are accounted for and reflected in the screed and ceramic or stone tile finish; and
 - where floors are designed not to exceed a continuous operating temperature of 35°C.
- 2.2 Thermafloor Undertile Heating must be finished with a stone or ceramic tile floor covering. Stone and ceramic tile finishes are outside the scope of this Appraisal.
- 2.3 A BRANZ appraised membrane system must be used in wet areas. The design and application of the wet area membrane system is outside the scope of this Appraisal.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Thermafloor Undertile Heating, 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 NZBC:

Clause B2 DURABILITY: Performance B2.3.1 [b] 15 years and B2.3.1 [c] 5 years. Thermafloor Undertile Heating meets these requirements. See Paragraphs 8.1 and 8.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Thermafloor Undertile Heating meets this requirement.

Clause G9 ELECTRICITY: Performance G9.3.1. Thermafloor Undertile Heating meets this requirement. See Paragraphs 9.1 and 12.1



Technical Specification

4.1 Thermafloor Undertile Heating is electric element heating cable embedded into a screed or levelling compound over various substrates and finished with stone or ceramic tiles. Temperature is controlled by a floor sensing Thermafloor programmable thermostat. The heating products and accessories used in Thermafloor Undertile Heating, supplied, or specified by Thermafloor Limited are as follows:

- **Thermafloor Thermostat** – programmable thermostat with optional WiFi capability, available in white or black.
- **Thermafloor Cable** – single strand single resistance conductor, FEP insulation, CuSn Braid screen earthed, with an outer PVC insulation. Heating elements are factory terminated and available in different sizes.

Handling and Storage

5.1 Thermafloor Undertile Heating components must be stored inside, in dry conditions.

Technical Literature

6.1 This Appraisal must be read in conjunction with:

- Thermafloor Undertile Heating Installation Manual, version 1, dated 08 April 2024.

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 Thermafloor Undertile Heating is a low temperature radiant, electric floor surface warming system. It is suitable for use in most internal tiled areas of buildings where floor warming is desired. It is also suitable for use in wet areas, including shower areas, provided an appropriate wet area membrane system is used.

Heating Design

7.2 The layout of the electric element cables must be carried out in accordance with the Technical Literature published by Thermafloor Limited.

Wet Area Membrane

7.3 A BRANZ appraised wet area membrane must be used in all wet areas, in accordance with the relevant requirements of NZBC Clause E3 Internal Moisture.

Durability

8.1 Under normal usage and maintenance conditions, Thermafloor Undertile Heating will provide a serviceable life of at least 15 years. The thermostat is readily accessible for servicing should it be required.

Maintenance

8.2 No servicing of the electrical elements should be required unless damage has occurred. Should the tile surface require repairs, Thermafloor Limited must be contacted prior to any work commencing. Any electrical repairs must be carried out by a registered electrician.

Electricity

9.1 Electrical components used in Thermafloor Undertile Heating meet the requirements of the Electricity [Safety] Regulations 2010 for electrical safety of fittings and electrical appliances.



Installation Information

Installation Skill Level Requirement

- 10.1 All installation work must be carried out in accordance with the Thermafloor Undertile Heating Installation Manual and this Appraisal by competent and experienced tradespersons conversant with loose cable under tile heating systems.
- 10.2 Thermafloor Limited will provide training and further information on request. It is the responsibility of the installer to seek guidance from Thermafloor Limited where required.
- 10.3 Installation of the electrical wiring and components must be carried out by a registered electrician.

General

- 11.1 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 and grease. All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface.
- 11.2 The Thermafloor heating cable must not be cut. The Thermafloor Undertile Heating Installation Manual provides guidance on selecting the correct length cable for a given floor area.
- 11.3 The Thermafloor heating cables must be spaced a minimum of 50 mm apart and should maintain 100 mm distance from floor/wall junctions and permanent floor mounted fixtures.

Basis of Appraisal

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

Tests

- 12.1 An assessment of electrical safety in compliance with IEC 60800:2021 and IEC 60730-2-9:2015 has been carried out.

Other Investigations

- 13.1 The Technical Literature including installation instructions have been reviewed by BRANZ and found to be satisfactory.
- 13.2 Site inspections were carried out to assess the practicability of installation.

Quality

- 14.1 The manufacture of the Thermafloor Undertile Heating components has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 14.2 The quality of supply to the market is the responsibility of Thermafloor Limited.
- 14.3 Designers are responsible for the building design, and building contractors are responsible for the quality of the installation of the structure, framing systems and the substrates.
- 14.4 Quality of the on-site installation is the responsibility of the building contractor.
- 14.5 Building owners are responsible for the maintenance of the ceramic or stone tile finish.
- 14.6 Electrical components that connect to mains power must be installed by a registered electrician.



Sources of Information

- AS/NZS 3000:2018 Electrical Installations - Known as the Australian/New Zealand Wiring Rules.
- Electricity (Safety) Regulations 2010.
- IEC 60800:2021 Heating cables with a rated voltage up to and including 300/500 V for comfort heating and prevention of ice formation.
- IEC 60730-2-9:2015 Automatic electrical controls - Part 2-9: Particular requirements for temperature sensing control.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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23 July 2024

THERMAFLOOR UNDERTILE
HEATING



In the opinion of BRANZ, **Thermafloor Undertile Heating** 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 **Thermafloor Limited**, 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. **Thermafloor Limited**:
 - 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 **Thermafloor Limited**.
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 **Thermafloor Limited** or any third party.

For BRANZ

Claire Falck
Chief Executive
Date of Issue:
23 July 2024