



BRANZ Appraised
Appraisal No. 1010 [2023]

SNUG UNDERFLOOR INSULATION

Appraisal No. 1010 [2023]

This Appraisal replaces BRANZ
Appraisal No. 1010 [2018]

Amended 19 August 2024



HEALTHYLIVING

BRANZ Appraisals

Technical Assessments of
products for building and
construction.



TEXTILE PRODUCTS

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Product

- 1.1 Snug Underfloor Insulation is a polyester thermal insulating blanket for use in timber-framed floors. It is supplied in various widths to fit floor joist spacings.

Scope

- 2.1 Snug Underfloor Insulation has been appraised as a thermal insulating material for timber-framed floors in new or existing domestic and commercial buildings.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Snug Underfloor Insulation, 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 (c) 5 years. Snug Underfloor Insulation meets these requirements. See Paragraphs 8.1 and 8.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Snug Underfloor Insulation meets this requirement.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 (a) and H1.3.2 E. Snug Underfloor Insulation contributes to meeting these requirements. See Paragraphs 14.1 and 14.2.



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Technical Specification

- 4.1 Snug Underfloor Insulation is manufactured from non-woven thermally-bonded polyester fibres. The fibres are blended, carded and thermally bonded to produce blankets, which are then slit to the required width, compressed and packaged. Snug Underfloor Insulation is available as set out in Table 1.

Table 1: Snug Underfloor Insulation Product Range

R-value	Nominal thickness [mm]	Width [mm]	Area per pack [m ²]	Density [kg/m ³]
1.8	100	450, 510, 550, 600 or 650	20	10
2	115	450, 510, 550, 600 or 650	15	10

- 4.2 Snug Underfloor Insulation is white in colour and is compression packed in clear polythene bags with labelling in compliance with AS/NZS 4859.1.
- 4.3 Accessories used with Snug Underfloor Insulation, which are supplied by the insulation installer, are staples.

Handling and Storage

- 5.1 Snug Underfloor Insulation must be stored under cover and in dry conditions. Heavy objects must not be stacked on the packs. The packs must be stored in an orientation that avoids excessive compression of the product.
- 5.2 Compression packaged polyester can be subjected to a maximum combination of compression density and storage time after which the product may not achieve its designed thermal performance.
- 5.3 In general, insulation products are sensitive to the length of time they are stored under compression packaging. Product that does not recover to its nominal thickness may not achieve the stated thermal resistance [R-value].

Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- Textile Products – Snug Polyester Insulation Brochure, Dec 23, v1/1.
 - Snug Polyester Installation Instructions, Dec 23, v1.1.
- 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 Snug Underfloor Insulation is intended for use as thermal insulation to meet the requirements of the NZBC. Snug Underfloor Insulation can be used to meet the minimum schedule method R-values of the NZBC Verification Methods H1/VM1, H1/VM2, NZBC Acceptable Solutions H1/AS1 or H1/AS2. Greater construction R-values can be achieved where specific design is used. For construction R-values, refer to the BRANZ House Insulation Guide. Product R-values and dimensions are given in Table 1.
- 7.2 Snug Underfloor Insulation R-values have been determined by testing to AS/NZS 4859.1.
- 7.3 Snug Underfloor Insulation is designed to be fitted between joists with the sides folded down at right angles and stapled in place.
- 7.4 Snug Underfloor Insulation is suitable for use without additional lining material under floors which have an “enclosed perimeter foundation” as defined by NZS 4246, or a semi-enclosed perimeter foundation in accordance with NZS 3604, Paragraph 6.14.2. Where the subfloor area is fully open and therefore wind penetration is not reduced or eliminated, the insulation shall be protected by suitable lining material.

- 7.5 The building envelope must be constructed to ensure the insulation remains dry during installation, and throughout the life of the building.
- 7.6 The clearance requirements for downlights must be met and reference made to the manufacturer's instructions and NZS 4246.

Durability

- 8.1 The durability assessment of Snug Underfloor Insulation to meet the requirements of the NZBC is based on the difficulty of access and replacement, and the ability to detect failure of the insulation, both during normal use and maintenance of the building.

Serviceable Life

- 8.2 Where the building is maintained so that provisions of NZBC Clause E2 and E3 are met, and where the insulation is not crushed or exposed to conditions that will diminish its thermal performance (e.g. moisture), Snug Underfloor Insulation is expected to have a serviceable life of at least 50 years. Support accessories must also be selected according to the required serviceable life.

Maintenance

- 9.1 Insulation that has become damp must be removed and the cause of dampness repaired. Cavities must be clean and dry before fitting new insulation of an equivalent thermal rating. NZS 4246 gives guidance on thermal insulation maintenance due to water damage.

Prevention of Fire Occurring

- 10.1 Where the completed floor system is above an occupied space, the insulation including any surface lining product enclosing Snug Underfloor Insulation from the adjacent occupied space, must achieve the Group Number for internal surface finish requirements as specified in NZBC Acceptable Solution C/AS1, Paragraph 4.2.2.1 or NZBC Acceptable Solution C/AS2, Paragraph 4.17.2 and Table 4.3.

Downlights

- 10.2 Insulation should maintain 100 mm clearance from all undefined recessed luminaires, treating them as a heat source. For insulation to abut or cover recessed luminaires these must be clearly marked as being suitable for having insulation abutting and covering them and have been installed in accordance with NZBC Acceptable Solution G9/AS1.

Fire Affecting Areas Beyond the Fire Source

- 11.1 Snug Underfloor Insulation has not been assessed for use in locations where a fire resistance rating (FRR) is required.

External Moisture

- 12.1 The total building envelope must be weathertight and comply with the requirements of NZBC Clause E2 to ensure that the insulation remains dry in use.
- 12.2 The moisture content of the construction materials at the time of enclosing the insulation must meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 10.2 a), or a lower moisture content if required by the lining manufacturer.

Internal Moisture

- 13.1 Buildings must provide an adequate combination of thermal resistance, ventilation and space temperature to all habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or may accumulate. This does not apply to Communal Non-residential, Commercial, Industrial Outbuildings or Ancillary buildings.

Energy Efficiency

- 14.1 Snug Underfloor Insulation will contribute to meeting the requirements of NZBC Clause H1, Performance H1.3.1 (a) and H1.3.2 E by compliance with NZBC Verification Methods H1/VM1, H1/VM2, NZBC Acceptable Solutions H1/AS1 or H1/AS2. Refer to Paragraphs 7.1–7.6.
- 14.2 Snug Underfloor Insulation R-values have been determined by BRANZ testing to AS/NZS 4859.1 and are given in Table 1.

Installation Information

Installation Skill Level Requirement

- 15.1 All design and building work must be carried out in accordance with Snug Underfloor Insulation Technical Literature and this Appraisal. All building work must be undertaken by competent and experienced tradespersons conversant with Snug Underfloor Insulation.

General

- 16.1 Installation of Snug Underfloor Insulation must be in accordance with the Technical Literature and this Appraisal. NZS 4246 should be used as a guide for installing insulation in residential buildings.
- 16.2 Snug Underfloor Insulation must be installed only when the building is enclosed and when the construction materials have achieved the required maximum moisture content or less.
- 16.3 Snug Underfloor Insulation must be released from the packaging and allowed to re-loft prior to installation. The time to loft will depend upon the length of time the product has been packaged and stored.
- 16.4 Snug Underfloor Insulation is supplied in blanket form (refer to Table 1) to suit framing layouts. The insulation is designed to fit between the floor joists with the sides folded down. There must be no gaps between subsequent installed insulation otherwise the thermal performance will be compromised. Care during installation is important to avoid gaps that can create convective heat loss.
- 16.5 The insulation should be folded down at right angles on either side and fixed with staples 50 mm from the underside of the flooring. The insulation is to be secured in place with staples along the edge of the insulation at 300-400 mm centres.
- 16.6 A minimum of 100 mm gap must be maintained between Snug Underfloor Insulation and plumbing downpipe work. This gap will also ensure that there is adequate access for servicing.
- 16.7 The clearance requirements for heating appliances and downlights must be followed. Refer also to NZS 4246.

Inspections

- 16.8 The Technical Literature, this Appraisal and NZS 4246 must be referred to during the inspection of Snug Underfloor Insulation installations.

Health and Safety

- 17.1 Refer to the Technical Literature and NZS 4246 for guidance on health and safety requirements such as personal protective clothing and installation hazard assessment.

Basis of Appraisal

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

Tests

- 18.1 BRANZ has carried out thermal resistance testing of Snug Underfloor Insulation in accordance with AS/NZS 4859.1.

Other Investigations

- 19.1 An assessment of the durability of Snug Underfloor Insulation has been made by BRANZ technical experts.
- 19.2 The manufacturer's Technical Literature has been reviewed by BRANZ and found to be satisfactory.
- 19.3 Site inspections have been undertaken by BRANZ to assess the practicability of installation.

Quality

- 20.1 The manufacture of Snug Underfloor Insulation has been examined by BRANZ, including methods adopted for quality control. Details of the manufacturing processes, and quality and composition of the raw materials used were obtained and found to be satisfactory.
- 20.2 Textile Products 1971 Ltd is responsible for the quality of the product supplied.
- 20.3 Quality of installation of the product on-site is the responsibility of the installer.
- 20.4 Quality of maintenance of the building to ensure the insulation material remains dry is the responsibility of the building owner.

Sources of Information

- AS/NZS 4859.1:2018 Thermal insulation materials for buildings.
- BRANZ House Insulation Guide (Sixth Edition), January 2023.
- NZS 4246:2016 Energy efficiency – Installing bulk thermal insulation in residential buildings.
- Ministry of Business, Innovation and Employment Record of amendments – Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 19 August 2024.

This Appraisal has been amended to include the R2 product into Table 1 and update the wording in regard to lining requirements in different subfloor scenarios (Paragraph 7.4).



In the opinion of BRANZ, **Snug Underfloor Insulation** 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 **Textile Products 1971 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. **Textile Products 1971 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 **Textile Products 1971 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 **Textile Products 1971 Ltd** or any third party.

For BRANZ



Claire Falck

Chief Executive

Date of Issue:

14 December 2023