



BRANZ Appraised

Appraisal No. 873 [2022]

KNAUF GLASSWOOL INSULATION

Appraisal No. 873 [2022]

This Appraisal replaces BRANZ Appraisal No. 873 [2016]

Amended 09 January 2023



BRANZ Appraisals

Technical Assessments of products for building and construction.



Knauf Insulation Pty Limited

23 Corporate Drive
Cannon Hill QLD 4170
Australia

Tel: + 61 7 3343 1989

Web: www.knaufinsulation.com.au



BRANZ

BRANZ

1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand

Tel: 04 237 1170

branz.co.nz

Product

- 1.1 Knauf Glasswool Insulation is a range of thermal and acoustic insulating materials manufactured from ECOSE® Technology resin-bonded, glass wool fibres. The insulation is pre-cut to suit a range of thermal insulation requirements and framing set-outs in walls, ceilings and roofs of buildings.
- 1.2 The Knauf Glasswool Insulation product range includes Earthwool® Glasswool Insulation, Knauf Insulation and EcoInsulation products, as detailed in Tables 1 and 2.

Scope

- 2.1 Knauf Glasswool Insulation has been appraised as a thermal and acoustic insulating material for framed or part-framed walls, ceilings and roofs of domestic and commercial buildings.

Building Regulations

Building Code of Australia (BCA)

- 3.1 In the opinion of BRANZ, Knauf Glasswool 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 National Construction Code (NCC):

NCC 2019 Building Code of Australia - Volume One (NCC Volume One)

Section J ENERGY EFFICIENCY: Performance Requirement JP1. Knauf Glasswool Insulation will satisfy this requirement. See Paragraphs 13.1 and 13.5.

NCC 2019 Building Code of Australia - Volume Two (NCC Volume Two)

Part 2.6 ENERGY EFFICIENCY: Performance Requirement P2.6.1. Knauf Glasswool Insulation will satisfy this requirement. See Paragraphs 13.2-13.6.



Technical Specification

4.1 Knauf Glasswool Insulation is an ECOSE® Technology resin-bonded, fibrous glass wool insulation. It is manufactured from recycled and/or virgin glass and ECOSE® Technology resin and formed into segments, blankets and rolls. Knauf Glasswool Insulation is available as set out in Table 1.

Table 1: Knauf Glasswool Insulation product range

	R-value	Nominal Thickness [mm]	Width [mm]	Length [mm]	Density [kg/m ³]
Earthwool Insulation	Wall Segments				
	R1.5	75	430 or 580	1160	8.1
	R2.0	75	430 or 450 or 580 or 600	1160	17.3
	R2.0	90	430 or 580	1160	9.4
	R2.5	90	430 or 580	1160	20.1
	R2.7	90	430 or 580	1160	28.2
	R4.0	140	430 or 580	1160	22.5
	Ceiling Segments				
	R3.0	145	430 or 580	1160	7.9
	R3.5	175	430 or 580	1160	7.4
	R4.0	195	430 or 580	1160	7.8
	R5.0	210	430 or 580	1160	11.4
	R6.0	275	430 or 580	1160	9.0
	Multi Use Rolls				
	R2.0	90	430 or 580	19000	9.4
Knauf Insulation	Knauf Insulation - Roof Blanket				
	R1.3	55	1200	30000	12.0
	R1.8	75	1200	23000	11.7
	R2.3	100	1200	17500	10.4
	R2.5	105	1200	16500	11.4
	R3.0	120	1200	14500	13.4
	R3.6	145	1200	10000	13.0
	Space Blanket				
	R1.3	55	1200	15000	12.0
R1.8	75	1200	10000	11.7	

4.2 Knauf Glasswool Insulation is brown in colour and is packaged in pre-printed plastic compression bags with labelling in compliance with AS/NZS 4859.1.

4.3 Knauf Insulation Acoustic insulation is available as set out in Table 2. *[Note: These products have not been tested to AS/NZS 4859.1.]*

Table 2: Knauf Insulation Acoustic insulation product range

Nominal Thickness [mm]	Width [mm]	Length [mm]	Density [kg/m ³]
25	600	18900	24
50	450 or 600	2700 or 21000	11
50	450 or 600	1160	14
50	600	7200	32
75	450 or 600	2700 or 11,600	11
75	450 or 600	1160 or 10,000	14
75	600	6200	24
75	600	4800	32
90	600	11600	11
90	600	9100	14
90	600	5300	24
90	450 or 600	4000	32
100	600	3600	32
110	600	1160	11

4.4 Accessories used with Knauf Glasswool Insulation, which are supplied by the insulation installer, are plastic strapping and fixings.

Handling and Storage

- 5.1 Knauf Glasswool 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 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 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Knauf Glasswool Insulation. 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 Knauf Glasswool Insulation is intended for use as thermal insulation to meet the energy efficiency requirements of the BCA. Knauf Glasswool Insulation can be used to meet the Deemed-to-Satisfy provisions of the BCA. Greater construction R-values can be achieved where specific design is used. Product R-values and dimensions are given in Table 1.
- 7.2 Knauf Glasswool Insulation's R-values have been determined by testing to AS/NZS 4859.1.
- 7.3 Knauf Glasswool Insulation is designed to be friction-fitted between wall, ceiling or roof framing. It can also be laid directly on a ceiling lining, over ceiling battens or joist/truss chords. In other horizontal situations, the insulation must be adequately supported by a suitable durable material.
- 7.4 When insulation is installed in a double layer over new or existing insulation, the possibility of compression of the bottom layer must be avoided or reduction of R-values for the bottom layer of the formed system must be taken into account.

- 7.5 The insulation thickness should be selected to suit the framing cavity. Knauf Glasswool Insulation must not be compressed into cavities less than the insulations nominal thickness. In walls, the insulation should be a snug fit between the interior lining and the wall sarking. Support may be needed to prevent insulation encroaching into wall cavity spaces.
- 7.6 To prevent moisture transfer and to provide roof ventilation, a separation of 25 mm minimum is required between the insulation and any rigid substrate or flexible roof underlay.
- 7.7 The building envelope must be constructed to ensure the insulation remains dry during installation and throughout the life of the building.
- 7.8 The clearance requirements for heating appliances and downlights must be met and reference made to the manufacturer's instructions and the BCA. See Paragraphs 10.1 and 15.6. The clearances must be taken into account in the assessment of the BCA Energy Efficiency.

Sound Insulation

- 7.9 Knauf Insulation Acoustic insulation can be used to contribute to the acoustic performance of existing or new constructions. The level of contribution will be dependent on the overall construction design and the specific acoustic properties of the insulation selected. Should a specific level of acoustic performance be required, an evaluation to confirm the acoustic performance should be undertaken by an acoustic consultation. The acoustic performance of Knauf Insulation Acoustic insulation has not been considered by BRANZ and is outside the scope of this Appraisal. Further information regarding acoustic performance is available from Knauf Insulation Pty Limited.

Durability

Serviceable Life

- 8.1 Where the building is maintained so that the Damp and Weatherproofing provisions of the BCA are met, and where the insulation is not crushed or exposed to conditions that will diminish its thermal performance, [e.g. moisture], Knauf Glasswool Insulation can be expected to be fit for its intended purpose and have a serviceable life similar to other glass wool insulation products.

Maintenance

- 9.1 Insulation that has become damp must be removed and the cause of the dampness repaired. Cavities must be clean and dry before fitting new insulation of an equivalent thermal rating.

Fire Safety

- 10.1 The Technical Literature must be read for instructions on the required separation distances from sources of heat. The separation distances must be followed for compliance to the BCA.
- 10.2 Where Knauf Glasswool Insulation is used in bushfire areas and is not protected by non-combustible building elements, consideration must be given to the provisions of NCC Volume Two, Part 3.10.5.

Damp and Weatherproofing

- 11.1 The total building envelope must comply with the Damp and Weatherproofing requirements of the BCA to ensure that the insulation remains dry in use.
- 11.2 The moisture content of the construction materials at the time of enclosing the insulation must meet the requirements of the lining manufacturer.

Internal Moisture

- 12.1 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.

Energy Efficiency

- 13.1 Knauf Glasswool Insulation complies with AS/NZS 4859.1 as required by NCC Volume One Deemed-to-Satisfy Provision J1.2. Knauf Glasswool Insulation satisfies NCC Volume One Performance Requirement JP1 through compliance with the Deemed-to-Satisfy Provisions of J1.1 to J1.6 where required.

- 13.2 Knauf Glasswool Insulation complies with AS/NZS 4859.1 as required by NCC Volume Two Acceptable Construction Practice 3.12.1.1. Knauf Glasswool Insulation satisfies NCC Volume Two Performance Requirement P2.6.1 through compliance with the provisions of Acceptable Construction Practice 3.12.1.1 to 3.12.1.6.
- 13.3 Contribution to the overall thermal performance and energy rating of houses needs to be considered. The individual thermal conductivity of the insulation contributes to the overall thermal energy rating, but thermal conductivity on its own cannot be used to determine the contribution to the overall energy rating and thermal efficiency of the house.
- 13.4 A thermal calculation method that complies with the ABCB Protocol for House Energy Rating Software must be used.
- 13.5 For details of State and Territory Variations, refer to the BCA.

Installation Information

Installation Skill Level Requirement

- 14.1 Installation of Knauf Glasswool Insulation must be completed by an installer with an understanding of insulation installation.

General

- 15.1 Installation of Knauf Glasswool Insulation must be in accordance with the Technical Literature and this Appraisal. AS 3999 should be used as a guide for installing insulation in residential buildings.
- 15.2 The product must be installed only when the building is enclosed and when construction materials have achieved the required maximum moisture content or less.
- 15.3 Knauf Glasswool 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.
- 15.4 Knauf Glasswool Insulation is supplied in batt, blanket and roll form [Table 1]. The batt products are sized to fit between standard framing centres. The product can be cut and fitted between framing centres to suit wall cavities and roof or ceiling framing. In wall cavities, the insulation must be neatly friction-fitted between framing members to prevent sagging and thermal convection. In ceilings or roofs, the insulation must be continuous across the entire roof or ceiling plane between top plates of external walls, and fitted either between or over rafters, ceiling joists or truss chords. The insulation must be butted tightly so that the potential for gaps and convection heat loss is reduced.
- 15.5 The insulation must not be folded, tucked or compressed. A close, even fit provides the most efficient thermal performance. Wherever possible, the insulation should be fitted beneath wiring or plumbing. Electrical installation requirements must be followed.
- 15.6 The clearance requirements for heating appliances and downlights must be followed and reference made to the BCA, local or national safety requirements.

Inspections

- 15.7 The Technical Literature, this Appraisal and AS 3999 must be referred to during the inspection of Knauf Glasswool Insulation installations.

Health and Safety

- 16.1 When handling Knauf Glasswool Insulation, it is recommended that installers follow the recommendations contained in the National Code of Practice for safe use of synthetic mineral fibres. A dust mask and eye protection is recommended when handling the product to provide protection from loose fibres and dust that may be disturbed. The Technical Literature contains additional health and safety information.
- 16.2 The fibre used to manufacture Knauf Glasswool Insulation is certified to the European Certification Board for Mineral Wool Products [EUCEB].

Basis of Appraisal

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

Tests

- 17.1 BRANZ has assessed thermal resistance testing of Knauf Glasswool Insulation in accordance with AS/NZS 4859.1.
- 17.2 Tests have been carried out in accordance with AS 1530.1. Knauf Glasswool Insulation is not deemed combustible according to the test criteria. The results have been reviewed by BRANZ technical experts.

Other Investigations

- 18.1 An assessment of the durability of Knauf Glasswool Insulation has been made by BRANZ technical experts.
- 18.2 The manufacturer's Technical Literature has been reviewed by BRANZ and found to be satisfactory.

Quality

- 19.1 The manufacture of Knauf Glasswool 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.
- 19.2 Knauf Insulation Pty Limited is responsible for the quality of the product supplied.
- 19.3 Quality of installation of the product on-site is the responsibility of the installer.
- 19.4 Maintenance of the building is the responsibility of the building owner.

Sources of Information

- AS 1530.1:1994 Combustibility test for materials.
- AS 3999:2015 Bulk thermal insulation - Installation.
- AS/NZS 4859.1:2018 Materials for the thermal insulation of buildings.
- BRANZ House Insulation Guide, Sixth Edition 2022.
- National Construction Code Series, Building Code of Australia 2019, Australian Building Codes Board.

Amendments

Amendment No. 1, dated 09 January 2023

This Appraisal has been amended to reflect changes to Table 1.



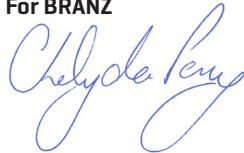
In the opinion of BRANZ, **Knauf Glasswool Insulation** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Knauf Insulation Pty 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. **Knauf Insulation Pty 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 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 **Knauf Insulation Pty 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 **Knauf Insulation Pty Limited** or any third party.

For BRANZ



Chelydra Percy

Chief Executive

Date of Issue:

02 August 2022