BRANZ Appraised
Appraisal No. 873 [2022]

KNAUF GLASSWOOL INSULATION

Appraisal No. 873 (2022)

This Appraisal replaces BRANZ Appraisal No. 873 (2016)

BRANZ Appraisals

Technical Assessments of products for building and construction.

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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 Batts				
1.5	75	430 or 580	1,160	8.1
2.0	90	430 or 580	1,160	9.5
2.0	75	430, 450, 580 or 600	1,160	17.3
2.1	90	580	1,160	10.8
2.5	90	430 or 580	1,160	20.0
2.7	90	430 or 580	1,160	27.2
2.7	90	430 or 580	1,160	27.2
Earthwool Insulation - Ceiling Batts				
3.0	145	430 or 580	1,160	7.9
3.5	175	430 or 580	1,160	7.4
4.0	195	430 or 580	1,160	7.8
5.0	210	430 or 580	1,160	11.4
6.0	275	430 or 580	1,160	9.1
Earthwool Insulation - Multi Use Rolls				
2.1	90	430 or 580	18,000	10.7
Earthwool Insulation - Commercial Rolls				
1.3	55	1,200	37,000	11.2
1.5	60	1,200	28,000	13.2
1.8	75	1,200	26,000	11.7
2.3	100	1,200	22,000	10.4
2.5	105	1,200	18,500	11.5
3.0	120	1,200	14,500	13.4
3.2	130	1,200	13,500	12.7
Knauf Insulation - Roof Blanket				
1.3	55	1,200	30,000	12
1.8	75	1,200	23,000	11.7
2.3	100	1,200	17,500	10.4
2.5	105	1,200	16,500	11.4
3.0	120	1,200	14,500	13.4
3.6	145	1,200	10,000	13
Knauf Insulation - Space Blanket				
1.3	55	1,200	15,000	12
1.8	75	1,200	10,000	11.73

Knauf Insulation - Ceiling Batt				
2.5	125	430 or 580	1,160	7.4
3.0	145	430 or 580	1,160	7.9
3.5	175	430 or 580	1,160	7.4
4.0	195	430 or 580	1,160	7.8
5.0	210	580	1.160	11.4
6.0	275	580	1,160	9
EcoInsulation - Ceiling Batt				
4.1	180	430 or 580	1,160	10.14
5.0	210	430 or 580	1,160	11.42
6.0	275	430 or 580	1,160	9.1
EcoInsulation - Wall Batt				
1.5	75	430 or 580	1,160	8.1
2.0	75	430 or 580	1,160	17.38
2.0	75	450 or 600	1,200	17.38
2.0	90	430 or 580	1,160	9.43
2.2	90	430 or 580	1,160	12.42
2.5	90	430 or 580	1,160	20.07
2.7	90	430 or 580	1,160	27.2
4.0	140	580	1,160	22.6

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/m³)
Knauf Insulation - Acoustic Batt			
50	580	1,160	11
50	450 or 600	2,700	11
75	430	1,160	11
75	450 or 600	2,700	11
110	600	1,160	11
50	430, 450 or 600	1,160	14
75	430, 450, 580 or 600	1,160	14
Knauf Insulation - Acoustic Roll			
50	450	21,000	11
75	450 or 600	11,600	11
90	600	11,600	11
75	600	10,000	14
90	600	9,100	14
25	600	18,900	24
75	600	6,200	24

90	600	5,300	24
50	600	7,200	32
75	600	4,800	32
90	450 or 600	4,000	32
100	600	3,600	32

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 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.

7.5 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.

7.6 The building envelope must be constructed to ensure the insulation remains dry during installation and throughout the life of the building.

7.7 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

7.8 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 carried out 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, Fifth Edition 2014.
- National Construction Code Series, Building Code of Australia 2019, Australian Building Codes Board.

BRANZ

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

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02 August 2022