BRANZ Appraised
Appraisal No.755 [2011]

BRANZ Appraisals

Technical Assessments of products for building and construction

BRANZ APPRAISAL No. 755 (2011)

TAITA GLASSWOOL INSULATION

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WFTAO

Product

1.1 Taita Glasswool Insulation is manufactured from resin bonded glass wool fibres. It is intended for use in the ceilings, roofs and walls of buildings and is pre-cut to a range of suitable segment sizes.

Scope

2.1 Taita Glasswool Insulation has been appraised as a thermal insulation material for use in ceilings, roofs and walls within the following scope:

- framed or part-framed domestic and commercial buildings where the insulation remains dry during its serviceable life.

Building Regulations

National Construction Code Series (NCC 2011) Building Code of Australia (BCA)

3.1 In the opinion of BRANZ, Taita Glasswool Insulation, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the BCA:

BCA Volume One – Class 2 to 9 Buildings

Section J - Energy Efficiency: Performance Requirement JP1. Taita Glasswool Insulation will satisfy this requirement. See Paragraphs 11.1 and 11.5.

BCA Volume Two – Class 1 and Class 10 Buildings

Part 2.6 Energy Efficiency: Performance Requirement P2.6.1. Taita Glasswool Insulation will satisfy this requirement. See Paragraphs 11.2 to 11.5.

Technical Specification

Glass Wool Insulation

4.1 Taita Glasswool Insulation is resin bonded fibrous glass wool insulation.
Taita Glasswool Insulation manufacture from Glasswool - Recycled and/or virgin glass and Phenol formaldehyde resin.

4.2 Taita Glasswool Insulation is yellow in colour and is packaged in plastic compression packaging labelled with each unique R-value, and in compliance with AS/NZS 4859.1.
4.3 Taita Glasswool Insulation packaging is labelled with a product identification code which details the Time, Date and the Plant where the product was manufactured. Taita Glasswool Insulation covered by this Appraisal is manufactured by Taita Chemical Co Ltd, Toufen, Miao-Li, Taiwan.
4.4 This Appraisal covers the Taita Glasswool Insulation range of products as set out in Table 1.

Table 1: Product Range

R-Value	Nominal Thickness* (mm)	Size	Pieces per bale	Area (m^2)	Density (kg/m^3)	Net weight (Kg)
R1.5	65	580 x 1200 mm	26	18.1	12.0	14.1
R1.5	65	430 x 1200 mm	26	13.4	12.0	10.5
R2.0	85	580 x 1200 mm	24	16.7	12.0	17.0
R2.0	85	430 x 1200 mm	24	12.4	12.0	12.6
R2.5	90	580 x 1200 mm	14	9.7	20.0	17.5
R2.5	90	430 x 1200 mm	14	7.2	20.0	13.0
R2.5	110	580 x 1200 mm	20	13.9	12.0	18.4
R2.5	110	430 x 1200 mm	20	10.3	12.0	13.6
R3.0	130	580 x 1200 mm	16	11.1	12.0	17.4
R3.0	130	430 x 1200 mm	16	8.3	12.0	12.9
R3.5	150	580 x 1200 mm	14	9.7	12.0	17.5
R3.5	150	430 x 1200 mm	14	7.2	12.0	13.0
R4.0	175	580 x 1200 mm	12	8.4	12.0	17.5
R4.0	175	430 x 1200 mm	12	6.2	12.0	13.0
R5.0	210	580 x 1200 mm	10	7.0	13.0	19.0
R5.0	210	430 x 1200 mm	10	5.2	13.0	14.0
R6.0	230	580 x 1200 mm	8	5.6	18.0	23.1
R6.0	230	430 x 1200 mm	8	4.1	18.0	17.1

** Insulation must not be fitted into sealed cavities that are less than the labelled insulation nominal thickness.*

Handling and Storage

5.1 Taita 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 Compression packed Glasswool that is subjected to long periods of storage may not loft to its nominal thickness and therefore may not achieve its designed thermal performance.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Taita 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, AS 3999, and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Taita Glasswool Insulation is designed to be used as thermal insulation to meet the BCA Energy Efficiency requirements, or to provide greater ratings when required by the designer.

7.2 The building envelope must be constructed to ensure the insulation remains dry during installation and throughout the life of the building.
7.3 Subject to the maximum compression density and storage conditions not being exceeded, all products covered by this Appraisal should recover to their nominal thickness within 48 hours after being removed from their compressed bales.
7.4 The clearances specified in the installation instructions, or specified by the manufacturer of heating appliances and recessed light fittings must be met. The use of recessed light fittings may, therefore, reduce the thermal performance of insulated ceilings. This factor must be taken into account in the assessment of compliance with the BCA Energy Efficiency requirements.
7.5 The effectiveness of the thermal envelope will be diminished when the insulation does not form a continuous envelope.

Walls

7.6 The insulation must be cut or fitted to cavity framework ensuring that a friction fit with no tucks or folds is achieved. This will give the maximum thermal benefit, and also reduce the likelihood that the material will sag within the framework over time.
7.7 Where the insulation is installed in exterior walls, it must be supported by a building wrap or strapping to ensure that the product is installed hard against the interior wall lining.

7.8 When the insulation is installed in walls, the insulation must be adequately supported to prevent it from encroaching into and restricting air movement or drainage within the cavity.

Ceilings

7.9 Where the insulation material is not laid directly on a ceiling lining or over ceiling battens or joists, it must be adequately supported by galvanised wire netting or some other suitable corrosion resistant material.

7.10 Where the insulation is installed in ceilings it must extend not less than 50mm over the top of the inside face of the walls.

7.11 A minimum of 25 mm separation must be maintained between the insulation and the roof underlay or sheathing to maintain ventilation and to prevent moisture in the insulation. Closed-in construction spaces under membrane roofs have special ventilation requirements, and reference must be made to the manufacturer's installation instructions for ventilation requirements.

Durability

Serviceable Life

8.1 Where the building is maintained and where the insulation is not crushed or exposed to conditions that will diminish its thermal performance, (e.g. moisture), then it can be expected to be fit for its intended purpose and have a serviceable life similar to other glasswool insulation products.

Maintenance

9.1 The building must be maintained weatherproof at all times. If, during normal routine maintenance, it is discovered that moisture has entered the building envelope, or that dampness has occurred because of leaking plumbing or some other source, then that source must be repaired immediately. Wet or damp Insulation must be removed and then replaced with new Insulation of an equivalent thermal rating. Framing and spaces must be clean, dry and free of all contaminants and mould before fitting new Insulation.

Outbreak of Fire

10.1 The Technical Literature of the heating appliance manufacturer must be read for guidance on separation distances from the heat source.

10.2 Where Taita Glasswool Insulation is to be used in bushfire areas and not protected by non combustible building elements, consideration must be given to the provisions of BCA 2011 Volume 2 Part 3.7.4.

Energy Efficiency

11.1 Taita Glasswool Insulation complies with AS/NZS 4859.1 as required by BCA Volume One Deemed-to-Satisfied Provision J1.2. Taita Glasswool Insulation satisfies BCA Volume One Performance Requirement JP1 by compliance with the Deemed-to-Satisfied Provisions of J1.1 to J1.6 where required.

11.2 Taita Glasswool Insulation complies with AS/NZS 4859.1 as required by BCA Volume Two Acceptable Construction Practice 3.12.1.1. Taita Glasswool Insulation satisfies BCA Volume Two Performance Requirement P2.6.1 by compliance with the provisions of Acceptable Construction Practice 3.12.1.1 to 3.12.1.5.

11.3 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 its thermal conductivity on its own cannot be used to determine the contribution to the overall energy rating and thermal efficiency of the house.

11.4 A thermal calculation method that complies with the ABCB Protocol for House Energy Rating Software must be used.

11.5 For details of State and Territory Variations refer to the BCA.

Installation Information

Installation Skill Level Requirements

12.1 Installation of Taita Glasswool Insulation must be completed by an installer with an understanding of insulation installation, in accordance with the instructions given within the Technical Literature, AS 3999 and this Appraisal.

General

13.1 The product must be installed only when the building is enclosed and when the construction materials have achieved the required maximum moisture content or less, to ensure the Insulation does not become wet.

13.2 Taita Glasswool Insulation when released from the packaging should re-loft to its nominal thickness in 48 hours. The time to loft will depend upon the length of time the product has been stored in its compression packaging.

13.3 The Insulation must either be neatly friction fitted between framing members and linings, or fitted over framing members and butted tightly so that the potential for gaps and convective heat loss is reduced. The material must not be folded, tucked or compressed. A close even fit provides the most efficient thermal performance.

13.4 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.

13.5 Wherever possible the Insulation should be fitted beneath wiring or plumbing. Where wiring is not completed in line with AS 3000 – 1986, or subsequent issues, electrical separators must be used; AS 3999 provides guidance.

Recessed Light fittings

13.6 Recessed light fittings operate at a range of temperatures and can present a significant risk if in contact with insulation. Lighting manufacturer's instructions must be followed and a specification obtained. If the specifications are unable to be established, a 200 mm gap around the light is recommended.

13.7 A gap of at least 25 mm minimum must be allowed around recessed light fittings where a suitable restraint is used; guidelines can be found in AS/NZS 3000 – 2007.

Inspections

13.8 The Technical Literature must be referred to during the inspection of Taita Glasswool Insulation installations.

Health and Safety

14.1 When handling Taita Glasswool Insulation it is recommended that installers follow the recommendations contained in the National Code of Practice for the 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.

14.2 Biosolubility has not been assessed for Taita Glasswool Insulation material and is outside the scope of this Appraisal.

Basis of Appraisal

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

Tests

15.1 BRANZ has carried out accredited thermal resistance testing of Taita Glasswool Insulation in accordance with AS/NZS 4859.1: 2002.

Other Investigations

16.1 An assessment of the durability of Taita Glasswool Insulation has been made by BRANZ technical experts.

16.2 The manufacturer's Technical Literature and Installation Instructions have been reviewed by BRANZ and found to be satisfactory.

Quality

17.1 The manufacture of Taita 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.

17.2 Taita Chemical Co Ltd is responsible for the quality of the product supplied.

17.3 Quality of installation of the product on site is the responsibility of the installer.

17.4 Quality of maintenance of the building to ensure the insulation material remains dry is the responsibility of the building owner.

Sources of Information

- AS 3999: 1992 Thermal Insulation of Dwellings – Bulk insulation, Installation.
- AS/NZS 3000: 2007 Electrical installations.
- AS/NZS 4859.1: 2002 (Incorporating Amendment No.1) Materials for the thermal insulation of buildings.
- BRANZ House Insulation Guide, Fourth Edition 2010.
- National Construction Code Series, Building Code of Australia 2011, Australian Building Codes Board.

BRANZ

In the opinion of BRANZ, Taita 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 Taita Chemical Co 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. Taita Chemical Co 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 Taita Chemical Co 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 Taita Chemical Co Ltd or any third party.

For BRANZ

P Burghout
Chief Executive

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