



BRANZ Appraised

Appraisal No. 756 [2022]

TAITA GLASSWOOL INSULATION

Appraisal No. 756 [2022]

This Appraisal replaces BRANZ Appraisal No. 756 [2017]



BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 Taita Glasswool Insulation is a range of resin-bonded, fibrous glass wool thermal insulating material for use in walls, ceilings, and roofs of buildings. Taita Glasswool Insulation is pre-cut to suit a range of suitable framing spaces.

Scope

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

Building Regulations

New Zealand Building Code [NZBC]

- 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 or contribute to meeting the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 [a] not less than 50 years, B2.3.1 [b] 15 years and B2.3.2. Taita Glasswool Insulation will meet these requirements. See Paragraphs 8.1 and 8.2.

Clause E3 INTERNAL MOISTURE: Performance E3.3.1. Taita Glasswool Insulation will contribute to meeting this requirement. See Paragraphs 13.1 and 13.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Taita Glasswool Insulation meets this requirement.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 [a] and H1.3.2 E. Taita Glasswool Insulation will contribute to meeting these requirements. See Paragraphs 14.1 and 14.2.

Technical Specification

4.1 Taita Glasswool Insulation is a resin-bonded, fibrous glass wool insulation manufactured from recycled and/or virgin glass and phenol formaldehyde resin binder. Taita Glasswool Insulation is available as set out in Table 1.

Table 1: Taita Glasswool Insulation product range.

R-value	Nominal Thickness [mm]	Length [mm]	Width [mm]	Density [kg/m ³]
2.8 HD	90	1,200	580	32

4.2 Taita Glasswool Insulation is yellow in colour and is packaged in plastic compression packaging with labelling in compliance with AS/NZS 4859.1.

4.3 Accessories used with Taita Glasswool Insulation, which are supplied by the insulation installer, are wire netting, plastic strapping and fixings.

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 In general, insulation products are sensitive to the length of time they are stored in 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:

- Taita Segment Glasswool Insulation V2 [New Zealand], 10 December 2015.

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 Taita Glasswool Insulation is intended for use as thermal insulation to meet the requirements of the NZBC. Taita Glasswool Insulation can be used to meet the minimum schedule method R-values of NZBC Verification Method H1/VM1, Fourth Edition, Amendment 4 or NZBC Acceptable Solution H1/AS1, Fourth Edition, Amendment 4. 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 Taita Glasswool Insulation R-values have been determined by testing to AS/NZS 4859.1.

7.3 Taita Glasswool Insulation is designed to be friction-fitted between wall, ceiling or roof framing, or laid directly over the ceiling lining, ceiling battens or joist/truss chords. In other horizontal situations, it must be adequately supported by wire netting or some other suitable durable material.

7.4 Where the insulation is installed in exterior walls, the insulation material nominal thickness must be selected to provide a snug close fit which touches all sides of the insulation cavity between the wall underlay and the interior wall lining.

7.5 When the insulation is installed in a wall with a drained cavity, it is recommended that specific wall products with a controlled nominal thickness be used. Where the stud spacings are greater than 450 mm, an intermediate means of restraining the insulation from bulging into the cavity must be installed in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

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 manufacturers instructions and NZS 4246.

Durability

- 8.1 The durability assessment of Taita Glasswool 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 the provisions of the NZBC E2 and E3 Clauses are met, and where the insulation is not crushed or exposed to conditions that will diminish its thermal performance, Taita Glasswool Insulation can be expected to have a serviceable life of at least 50 years.

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 Separation or protection must be provided to Taita Glasswool Insulation from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

Downlights

- 10.2 Recessed luminaires shall be one of the specified luminaire types and installed in accordance with NZBC Verification Method C/VM1 and NZBC Acceptable Solution C/AS1, Section 7.4.
- 10.3 Insulation materials must maintain a clearance of 100 mm to undefined recessed luminaires.

Fire Affecting Areas Beyond the Fire Source

Control of Internal Fire and Smoke Spread

- 11.1 Taita Glasswool Insulation is considered combustible, therefore the interior surface finish must achieve a Group Number of not more than 3 as per NZBC Acceptable Solution C/AS1 Section 4.3 and C/AS2 Paragraph 4.17.2. Taita Glasswool Insulation will not meet this requirement alone and will need to be enclosed by an interior surface lining so that the completed system achieves a Group Number of not more than 3.

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 installing and 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.
- 13.2 Roofs and walls of housing complying with the Schedule Method for Compliance with Clause H1.3.2 E will have adequate thermal resistance. Other buildings may require more thermal insulation to satisfy the requirements of NZBC Acceptable Solution E3/AS1 than that to satisfy the energy efficiency provisions alone.

Energy Efficiency

- 14.1 Taita Glasswool 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 Method H1/VM1, Fourth Edition, Amendment 4 or NZBC Acceptable Solution H1/AS1, Fourth Edition, Amendment 4.
- 14.2 Taita Glasswool 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 Taita Glasswool Insulation Technical Literature and this Appraisal. All building work must be undertaken by competent and experienced tradespersons conversant with Taita Glasswool Insulation.

General

- 16.1 Installation of Taita Glasswool 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 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.
- 16.3 Taita 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.
- 16.4 Taita Glasswool Insulation must be friction-fitted between framing members and must completely fill the cavity so that the potential for gaps and convective heat loss is reduced. In wall cavities, the insulation must be neatly friction-fitted between framing members to prevent sagging. In ceilings or roofs, the insulation may be fitted between framing members or fitted over framing members and butted tightly. The insulation must extend to the external wall plate. 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.
- 16.5 The clearance requirements for heating appliances, and downlights must be followed. Refer also to NZS 4246.

Inspections

- 16.6 The Technical Literature, this Appraisal and NZS 4246 must be referred to during the inspection of Taita Glasswool Insulation.

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 Taita Glasswool Insulation in accordance with AS/NZS 4859.1.

Other Investigations

- 19.1 An assessment of the durability of the Taita Glasswool Insulation was made by BRANZ technical experts.
- 19.2 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 20.1 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 of the raw materials used were obtained and found to be satisfactory.
- 20.2 Taita Chemical Co 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 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, Fifth Edition 2014.
- NZS 4214:2006 Method of determining the total thermal resistance of parts of buildings.
- NZS 4246:2016 Energy Efficiency - Installing bulk thermal insulation in residential buildings.
- Ministry of Business, Innovation and Employment Records of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



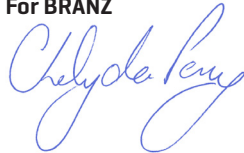
In the opinion of BRANZ, **Taita Glasswool Insulation** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

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



Chelydra Percy

Chief Executive

Date of Issue:

12 October 2021