



BRANZ Appraised

Appraisal No. 756 [2017]

TAITA GLASSWOOL INSULATION

Appraisal No. 756 [2017]

This Appraisal replaces Appraisal No. 756 [2012].

Amended 07 March 2018



BRANZ Appraisals

Technical Assessments of products for building and construction.



Taita Chemical Co Ltd

573 Min-Tsu Road

Tou-fen

Miao-Li

Taiwan 35153 ROC

Tel: +886 37 627 700

Fax: +886 37 627 704

Web: www.ttc.com.tw



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 Taita Glasswool Insulation is a resin bonded fibrous glasswool 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 and B2.3.1 [b] 15 years. Taita Glasswool Insulation will meet these requirements. See Paragraph 8.1.

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 and will not present a health hazard to people.

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

Technical Specification

- 4.1 Taita Glasswool Insulation is a resin bonded fibrous glasswool 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	Number of pieces	Nett Area (m ²)	Length (mm)	Width (mm)	Net Weight (kg)	Nominal Thickness (mm)	Density (kg/m ³)
Segments							
1.2 HD	36	18.6	1200	430	13.0	50	14.0
1.2 HD	36	25.1	1200	580	17.5	50	14.0
1.6	38	19.6	1200	430	11.8	75	8.0
1.6	38	26.5	1200	580	15.9	75	8.0
2.1	28	14.4	1200	430	13.0	90	10.0
2.1	28	19.5	1200	580	17.5	90	10.0
2.0 HD	15	7.7	1200	430	13.0	70	24.0
2.0 HD	15	10.4	1200	580	17.5	70	24.0
2.2 HD	20	10.3	1200	430	13.0	90	14.0
2.2 HD	20	13.9	1200	580	17.5	90	14.0
2.2	26	13.4	1200	430	14.4	90	12.0
2.2	26	18.1	1200	580	19.5	90	12.0
2.6	24	12.4	1200	430	12.4	125	8.0
2.6	24	16.7	1200	580	16.7	125	8.0
2.6 HD	14	7.2	1200	430	13.0	90	20.0
2.6 HD	14	9.7	1200	580	17.5	90	20.0
2.8	22	11.4	1200	430	12.7	140	8.0
2.8	22	15.3	1200	580	17.1	140	8.0
2.8 HD	10	5.2	1200	430	14.9	90	32.0
2.8 HD	10	7.0	1200	580	20.0	90	32.0
3.1	20	10.3	1200	430	12.4	150	8.0
3.1	20	13.9	1200	580	16.7	150	8.0
3.3	19	9.8	1200	430	12.9	165	8.0
3.3	19	13.2	1200	580	17.5	165	8.0
3.6	18	9.3	1200	430	13.0	175	8.0
3.6	18	12.5	1200	580	17.5	175	8.0
4.1	15	7.7	1200	430	12.0	195	8.0
4.1	15	10.4	1200	580	16.3	195	8.0
5.2	10	5.2	1200	430	11.9	230	10.0
5.2	10	7.0	1200	580	16.0	230	10.0
6.3	9	4.6	1200	430	14.5	260	12.0
6.3	9	6.3	1200	580	19.5	260	12.0
7.3	6	3.1	1200	430	13.6	275	16.0
7.3	6	4.2	1200	580	18.4	275	16.0
Blankets							
2.9	1	12.0	10,000	1200	18.0	125	12.0
3.3	1	10.2	8500	1200	17.7	145	12.0

- 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 R-value.

Technical Literature

- 6.1 Refer to the Appraisal 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 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 or NZBC Acceptable Solution H1/AS1. 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 thermal resistance [R-value] has been determined by testing to AS/NZS 4859.1, which is an acceptable method in NZBC Acceptable Solution H1/AS1.
- 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. See Paragraphs 10.1 - 10.3.

Durability

Serviceable Life

- 8.1 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 fire places, heating appliances, flues, chimneys and recessed luminaires. Refer to Part 7 of NZBC Acceptable Solutions C/AS1 to C/AS6 and NZBC Verification Method C/VM1.

Downlights

- 10.2 Recessed luminaires shall be of type and be installed in accordance with NZBC Acceptable Solution C/AS1 to C/AS6, Section 7.4.
- 10.3 Insulation materials must maintain a clearance of 100 mm to undefined recessed luminaires in existing buildings.

Control of Internal Fire and Smoke Spread

- 11.1 The completed wall and ceiling system, including the surface lining product enclosing the Taita Glasswool Insulation from the adjacent occupied space, must achieve the Group Number for internal surface finish requirements as specified in the relevant NZBC Acceptable Solutions C/AS1 to C/AS6.

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 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 or NZBC Acceptable Solution H1/AS1. Refer to Paragraphs 7.1 - 7.7.
- 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 Requirements

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

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 investigation 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 Taita Glasswool Insulation have been made by BRANZ technical experts.
- 19.2 The manufacturer's Technical Literature including Installation Instructions have been reviewed 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: 2002 Materials for the thermal insulation of buildings.
- 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.
- BRANZ House Insulation Guide, Fifth Edition 2014.
- BRANZ Bulletin Number 525 Preventing moisture problems in timber-framed skillion roofs.
- Compliance Document for New Zealand Building Code Energy Efficiency Clause H1, Department of Building and Housing, Third Edition, August 2007.
- Ministry of Business, Innovation and Employment Records of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 07 March 2018.

This Appraisal has been amended to update the Product Range in Table 1.



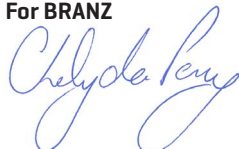
In the opinion of BRANZ, **Taita Glasswool Insulation** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

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:

01 February 2017