



**SPECIFY WITH
CONFIDENCE**

BRANZ Appraisals

**Technical Assessments of
products for building and
construction**

**BRANZ
APPRAISAL
CERTIFICATE
No. 509 (2006)**

**PREMIER
A GRADE
INSULATION**

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Product

1.1 Premier A Grade is a glass fibre thermal and acoustic insulation blanket for walls, ceilings, roofs and floors in buildings. Premier A Grade is available in a range of thicknesses and thermal ratings.



Scope

2.1 Premier A Grade has been appraised as a thermal insulation material for walls, ceilings, roofs, and under floors of buildings within the following scope: framed or part-framed domestic and commercial buildings where the insulation remains dry during its serviceable life.

2.2 Premier A Grade must be installed in accordance with the manufacturer's Technical Literature, see Paragraph 6.1.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Premier A Grade, if designed, used, installed and maintained in accordance with the statements and conditions of this Certificate, 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. Premier A Grade will meet this requirement. See Paragraphs 8.1 and 8.2.

Clause E3 INTERNAL MOISTURE: Performance E3.3.1. Premier A Grade will contribute to meeting this requirement. See Paragraphs 13.1 – 13.4.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Premier A Grade meets this requirement and will not present a health hazard to people.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 and H1.3.2. Premier A Grade will contribute to meeting these requirements. See Paragraphs 14.1 – 14.4.

Technical Specification

4.1 The components supplied by Premier Insulation Ltd are:

Premier A Grade is a Phenolic resin bonded fibrous glass insulation blanket. The main ingredients of Premier A Grade are:

- Fibrous Glass- Key raw components are, sand; soda ash and limestone.
- Cured Urea Extended Phenolic Resin, CAS Number 25104-55-6.
- Recycled Glass.

4.2 The product is available as set out in Table 1.

Table 1: Product Range

R Value	Nominal Thickness	Width	Length	Density
*R1.5	65 mm	1200 mm	15 m	12 kg/m ³
R1.8	75 mm	1200 mm	15 m	12 kg/m ³
R2.1	90 mm	1200 mm	15 m	12 kg/m ³
R2.5	100 mm	1200 mm	15 m	12 kg/m ³
R2.7	120 mm	1200 mm	15 m	12 kg/m ³

Note: Premier A Grade 65 mm nominal thickness insulation cannot be used in 90 mm or greater thickness wall cavity.

4.3 Premier A Grade glasswool insulation blanket is yellow in colour and is packaged in clear polythene, with an outer 'compression' wrap. Each packet is supplied with labelling in compliance with AS/NZS 4859.1.

4.4 Accessories used with Premier A Grade which are supplied by the Insulation Installer are :

- Plastic strapping – Where plastic strapping is used to control the insulation material from movement that would affect the performance of the thermal or acoustic insulation performance, strapping that meets the requirements of NZBC Clause B2 DURABILITY: Performance B2.3.1(a) 50 years, must be used.
- Plastic strapping fixings – Plastic strapping fixings such as hot dipped galvanised clouts or zinc plated staples that meet the requirements of NZBC Clause B2 DURABILITY: Performance B2.3.1(a) 50 years.

Handling and Storage

5.1 Premier A Grade must be stored under cover and in dry conditions. Heavy objects must not be stacked on the packs. The packs must be stored in a vertical position to avoid compression of the product.

5.2 In general, insulation products are sensitive to the length of time they are stored under compression packaging. The longer they are stored, the longer it will take for them to recover to their natural loft after unpacking.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Premier A Grade. The Technical Literature must be read in conjunction with this Certificate. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Certificate must be followed.

Design Information

General

7.1 Premier A Grade is designed to be used as thermal insulation to meet the energy efficiency and other NZBC insulation requirements, or to provide greater ratings when required by the designer, when installed in walls, ceilings, roofs and under floors of buildings.

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 To minimise the risk of moisture transfer to the insulation, roofs must be constructed to maintain a minimum airspace of 25 mm between the insulation and the roofing membrane or other roof elements, except where a solid substrate is used under the roof cladding material. (Note: some roofing may still require ventilation clearance.)

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 NZBC Clause H1 Energy Efficiency.

7.5 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.

7.6 When the insulation is installed in a wall with a drained cavity 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.

7.7 Where the insulation is installed in exterior walls, it is preferable for the insulation material nominal thickness to be selected to provide a snug close fit of the insulation between building wrap and the interior wall lining.

Durability

Serviceable Life

8.1 Where the building is maintained so that 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, e.g. moisture, then it can expect to have a serviceable life of at least 50 years. Premier A Grade must be installed in a dry, protected construction cavity.

8.2 Premier A Grade is resistant to vermin attack as fibreglass fibres are not a food source.

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 of moisture must be eliminated immediately. Wet or damp insulation must be removed and then either replaced with new insulation of an equivalent thermal rating, or removed and then dried, re-lofted and reinstated. Insulation that has been dried must be inspected prior to reinstallation to verify that it has not deteriorated or decreased in thickness. Any loss in insulation thickness will result in loss of R-value.

Outbreak of Fire

10.1 Premier A Grade must be separated or protected from sources of heat such as chimneys, fireplaces, flues and fuel burning appliances in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9.

Spread of Fire

11.1 When tested in accordance with AS 1530.3, Premier A Grade achieved the Early Fire Hazard Indices listed in Table 2.

Table 2: Fire Indices

Ignitability Index	0
Spread of Flame Index	0
Heat Evolved Index	0
Smoke Developed Index	1

External Moisture

12.1 The total building envelope must comply with the requirements of NZBC E2 to ensure that the insulation remains dry in use.

12.2 The moisture content of the construction materials at the time of enclosing the insulation must meet the requirements of NZBC Acceptable Solution E2/AS1, or lower moisture content if required by the lining manufacturer.

Internal Moisture

13.1 When Premier A Grade is installed in sufficient quantities in buildings where normal occupancy levels exist and an adequate combination of ventilation and space temperature is provided (e.g. complying with NZBC E3/AS1, Paragraph 1.2), the performance requirements of NZBC E3.3.1 will be met.

13.2 Correct thermal design and installation, as set out in this Certificate and the manufacturer's Technical Literature, must be strictly followed to meet the minimum R-value of 1.5 m² °C/W in NZBC Acceptable Solution E3/AS1, Paragraph 1.1.1(a) and (d) for framed wall and roof or ceiling construction.

13.3 It is not generally recommended to use vapour barriers in ceilings, except to prevent condensation in areas of high humidity such as may be found in buildings containing swimming pools, saunas, spa pools or wet processes. In these situations advice must be sought from qualified experts.

13.4 The effects of thermal bridging must be taken into account in the thermal design of wall, roof and ceiling systems, particularly with the use of steel framing.

Energy Efficiency

14.1 When Premier A Grade is installed in accordance with this Certificate and the manufacturer's Technical Literature, the provisions of NZBC H1.3.1 and H1.3.2 will be met for Housing.

14.2 Premier A Grade will assist in meeting the thermal design requirements of buildings as set out in NZS 4218. The building envelope for Housing must be designed and constructed to ensure the Building Performance Index (BPI) does not exceed 0.13 kWh in a warm location and 0.12 kWh in a cool location. A building envelope meeting the requirements of one of the compliance methods of NZS 4218 will be acceptable for Housing.

14.3 For buildings other than Housing, and of less than 300 m², a building envelope meeting the requirements of one of the compliance methods of NZS 4218 will be acceptable. For buildings larger than 300 m², reference should be made to NZS

4243 for energy efficiency in non-residential buildings.

14.4 BRANZ Bulletin No. 357 describes the general requirements for insulating houses to meet NZBC Clause E3 and H1. Examples of thermal performance of specific types of construction are also given in the BRANZ House Insulation Guide.

Installation Information

Installation Skill Level Requirements

15.1 Installation of Premier A Grade must be completed by an approved Premier Insulation Ltd installer with an understanding of insulation installation, in accordance with the instructions given within the Technical Literature, Installation Instructions and this Certificate.

General

16.1 Installation of Premier A Grade must be in accordance with the manufacturer's Technical Literature, Installation Instructions and this Certificate. Installation is to be carried out by trained installers only.

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, to ensure the insulation does not become wet.

16.3 Premier A Grade 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 Premier A Grade is manufactured in roll sizes to allow cutting to suit wall and ceiling framing spaces. (See Table 1)

16.5 Premier A Grade must be cut to fit into cavities where required.

16.6 Where Premier A Grade is installed in wall framing cavities, it is preferable for the wall cavities to be completely filled to prevent possible sagging and thermal convection.

16.7 The insulation must either be neatly friction fitted between framing members and at least one face of the cavity, 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.

16.8 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. Wherever possible the insulation should be fitted beneath wiring or plumbing.

16.9 Under floors, the insulation must be supported and protected by a suitable lining material such as oil tempered hardboard.

16.10 Where recessed light fittings are fitted, installation of the insulation material and the light fittings must be in accordance with NZBC C/AS1 Paragraph 9.4. If a gap in the insulation material is required around light fittings, the effectiveness of the thermal envelope will be diminished when the insulation does not form a continuous envelope.

Inspections

16.11 The Technical Literature must be referred to during the inspection of Premier A Grade installations by the building consent authorities and territorial authorities.

Health and Safety

17.1 Premier A Grade is easy to handle. However, it is recommended that a dust mask be worn when handling the product to provide protection from loose fibres and dust that may be disturbed.

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 Premier A Grade in accordance with AS/NZS 4859.1: 2002.

18.2 Tests to determine the Fire Hazard Properties of Premier A Grade were carried out by Applied Physics Laboratory in accordance with AS 1530.3.

Other Investigations

19.1 An assessment of the durability of Premier A Grade has been made by BRANZ technical experts.

19.2 The manufacturer's Technical Literature and installation instructions have been reviewed by BRANZ and found to be satisfactory.

19.3 Site inspections have been undertaken by BRANZ to assess the practicability of installation.

Quality

20.1 The manufacture of Premier A Grade has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

20.2 The quality management system of the insulation manufacturer, Taita Chemical Co. Ltd, Tou-Fen Plant in Taiwan, has been assessed and accredited as meeting the requirements of ISO 9001: 2000 by BSMI Certificate Number 4XCY006-03.

20.3 Premier Insulation Ltd is responsible for the quality of the product supplied.

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

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

Sources of Information

- AS 1530 - 1989: Part 3 Simultaneous determination of ignitability, flame propagation, heat release and smoke release.
- AS/NZS 4859.1: 2002 Materials for the thermal insulation of buildings.
- BRANZ Bulletin No. 357 Thermal insulation of houses.
- BRANZ House Insulation Guide, May 1995.
- NZS 4218: 1996 Energy efficiency – housing and small building envelope.
- NZS 4222:1992 Specification for materials for thermal insulation of buildings.
- NZS 4243: 1996 Energy efficiency – large buildings.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition, July 2005.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The New Zealand Building Regulations 1992, up to, and including October 2004 Amendment.



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

The Appraisal Certificate is issued only to the Certificate Holder, Premier Insulation Ltd, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
 - 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. The Certificate Holder:
 - 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.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation 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 the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ

P Robertson
Chief Executive

Date of issue: 28 April 2006