



BRANZ Appraised

Appraisal No.356 [2005]

BRANZ Appraisals

Technical Assessments of products
for building and construction

BRANZ APPRAISAL CERTIFICATE

No. 356 (2005)

This Certificate replaces BRANZ
Appraisal Certificate No. 356 (1998)
issued June 1998.

THERMAKRAFT COVER-UP™ BREATHER-TYPE BUILDING WRAP

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Product

1.1 Thermakraft Cover-Up™ is a synthetic breather-type building wrap for use as a wall wrap and air barrier under direct and non-direct fixed wall cladding on timber framed buildings. The product is manufactured from tapes of high density polyethylene woven into sheet form, and is coated on both sides with pigmented low density polyethylene. Micro-perforations are made through the coated membrane to permit the passage of water vapour.



Scope

2.1 Thermakraft Cover-Up™ has been appraised for use as a wall wrap on timber framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- with absorbent wall claddings directly fixed to framing; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZS 3604:1999; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

2.2 Thermakraft Cover-Up™ has also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of Thermakraft Cover-Up™ into their design in accordance with the declared properties and the instructions of Thermakraft Industries (NZ) Ltd.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Thermakraft Cover-Up™ Breather-Type Building Wrap, if used, designed, 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), 50 years and B2.3.1(b), 15 years. Thermakraft Cover-Up™ meets these requirements. See Paragraphs 8.1 and 8.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the cladding system, Thermakraft Cover-Up™ will contribute to meeting this requirement. See Paragraphs 11.1 - 11.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Thermakraft Cover-Up™ meets this requirement and will not present a health hazard to people.

3.2 This Certificate appraises an **Acceptable Solution** in terms of the New Zealand Building Code compliance. Thermakraft Cover-Up™ meets the requirements for wall wraps and air barriers specified in accordance with NZBC Acceptable Solution E2/AS1, Table 23.

Technical Specification

4.1 Thermakraft Cover-Up™ is a 95 g/m² white sheet membrane material approximately 0.25 mm thick.

4.2 The product is supplied in rolls 2.54 and 2.74 m wide by 18.5, 27.5 and 36.5 m long and 1.37 m wide by 18.5, 27.5 and 73.0 m long. The product is printed with a two colour Thermakraft Cover-Up™ logo repeated along the length of the roll and is labelled with the marketing or construction company's name. The rolls are wrapped in clear polythene film.

Accessories

4.3 Accessories used with Thermakraft Cover-Up™ which are supplied by the installer are:

- Fixings - staples, clouts or proprietary wrap fixings, or other temporary fixings to attach the wall wrap to the framing.
- Building wrap support - polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens where required to support the wall wrap in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

Handling and Storage

5.1 Handling and storage of the product, whether on or off site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on end, under cover, in clean, dry conditions and must not be crushed.

Technical Literature

6.1 Refer to the Appraisals listings on the BRANZ website for details of the current Technical Literature for Thermakraft Cover-Up™. 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

Timber Framing

7.1 Studs must be provided at maximum 600 mm centres. Dwangs must be fitted flush between the studs at maximum 1200 mm centres.

General

7.2 Thermakraft Cover-Up™ is intended for use as an alternative to conventional building papers which are fixed over timber framed walls in order to limit the entry of wind into building cavities, and to act as a secondary barrier to wind-driven rain.

7.3 The material also provides a degree of temporary weather protection during early construction. However, the product will not make the building weathertight and some wetting of the underlying structure is always possible before the building is closed in. Hence, the building must be closed-in and made weatherproof before moisture sensitive materials such as wall or ceiling linings and insulation materials are installed.

7.4 Thermakraft Cover-Up™ is suitable for use under wall claddings as a wall wrap and air barrier as called up in NZBC Acceptable Solution E2/AS1, Table 23, except that it must not be used with non-absorbent wall claddings such as vinyl or metal based sidings or weatherboards in direct fixed installations. Refer to Table 1.

Table 1: NZBC E2/AS1 Table 23 Requirements

NZBC E2/AS1 Table 23 Wall Wrap Properties	Property Performance Requirement	Actual Property Performance
Absorbency	≥ 100 g/m ²	Does not comply
Vapour Resistance	≤ 7 MN s/g	2.7 MN s/g
Water Resistance	≥ 20 mm	Pass
pH of Extract	≥ 6 and ≤ 9	6.8
Shrinkage	≥ 0.5%	-0.015%
Mechanical	Edge tear and tensile strength	Edge tear: Machine direction = 380 N Cross direction = 299 N Tensile strength: Machine direction = 7.82 kN/m Cross direction = 5.90 kN/m
Air Barrier	Edge tear strength: 90 N Air resistance: ≥ 0.1 MN s/m ³	Pass 0.205 MN s/m ³

7.5 In cavity installations where the cavity battens are installed at greater than 450 mm centres, the building wrap must be supported between the battens to prevent the wrap bulging into the cavity space when bulk insulation is installed in the wall frame cavity in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

7.6 Thermakraft Cover-Up™ is suitable for use as a non-rigid backing material for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.1. The wrap must be supported with 75 mm galvanised mesh or plastic tape or wire at 150 mm centres run

across the cavity battens to limit deflection to a maximum of 5 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.2.

7.7 Thermakraft Cover-Up™ may also be used as a slip layer over rigid backings for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.3(b).

Structure

7.8 Thermakraft Cover-Up™ is suitable for use in all Building Wind Zones of NZS 3604 up to, and including, 'Very High'.

Durability

8.1 Thermakraft Cover-Up™ meets code compliance with NZBC Clause B2.3.1 (a), 50 years for building wraps used where the cladding durability requirement or expected serviceable life is not less than 50 years, and code compliance with NZBC Clause B2.3.1 (b), 15 years for building wraps used where the cladding durability requirement is 15 years.

Serviceable Life

8.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 60 days, Thermakraft Cover-Up™ is expected to have a serviceable life of at least 50 years.

Control of Internal Fire and Smoke Spread

9.1 Thermakraft Cover-Up™ has an AS 1530 Part 2 Flammability Index of 1 and meets the requirements of NZBC Acceptable Solution C/AS1 Part 6, Table 6.2 for surface finish requirements for suspended flexible fabrics, and therefore it may be used with no restrictions in all buildings.

Outbreak of Fire

10.1 Thermakraft Cover-Up™ must be separated from fireplaces, heating appliances, flues and chimneys in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

External Moisture

11.1 Thermakraft Cover-Up™ must be used behind claddings that meet the requirements of the NZBC, e.g. such as those covered by NZBC Acceptable Solution E2/AS1, or claddings covered by a valid BRANZ Appraisal Certificate.

11.2 Thermakraft Cover-Up™, when installed in accordance with the Technical Literature and this Certificate, will assist in the total cladding systems compliance with NZBC Clause E2.

11.3 When used as an air barrier, particular care must be taken to ensure an air tight barrier is achieved, and weather sealing at all openings and penetrations through the cladding meets the requirements of the NZBC.

Installation Information

Installation Skill Level Requirements

12.1 Installation must always be carried out in accordance with the Technical Literature and this Certificate, by competent tradespersons with an understanding of wall wrap installation.

Wrap Installation

13.1 Thermakraft Cover-Up™ must be fixed to all framing members at maximum 300 mm centres with hot-dip galvanised, large-head clouts 20 mm long, zinc plated 6-8 mm staples, or proprietary wrap fixings. The membrane must be pulled taut over the framing before fixing.

13.2 Thermakraft Cover-Up™ must be run horizontally and must extend from the upper-side of the top plate to the under-side of the bearers or wall plates supporting ground floor joists, or below bottom plates on concrete slabs. Horizontal laps must be no less than 75 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the membrane. End laps must be made over framing and be no less than 150 mm wide.

13.3 The wall wrap should be run over openings and these left covered until windows and doors are ready to be installed. Openings are formed in the membrane by cutting on a 45 degree diagonal from each corner of the penetration. The flaps of the cut membrane must be folded inside the opening and stapled to the penetration framing. Excess wrap may be cut off flush with the internal face of the wall frame.

13.4 Thermakraft Cover-Up™ can be added as a second layer over head flashings in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.7(e).

13.5 When fixing the product in windy conditions, care must be taken due to the large sail area created by the wide roll width.

13.6 Any damaged areas of Thermakraft Cover-Up™, such as tears, holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with new material lapping the damaged area by at least 150 mm and taping, or by taping small tears.

Basis of Appraisal

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

Tests

14.1 The following tests have been carried out on Thermakraft Cover-Up™ by Ensic Papro: Cold extract pH in accordance with AS/NZS 1301.421s; edge tear resistance and tensile strength in accordance with AS/NZS 4200.1; shrinkage in accordance with AS/NZS 4201.3, water resistance in accordance with AS/NZS 4201.4, and air resistance in accordance with BS 6538-3.

14.2 The following tests have been carried out on Thermakraft Cover-Up™ (marketed in Canada as Airtight®) by an independent laboratory for the Canadian Construction Materials Centre (CCMC), in accordance with the requirements of CAN/CGSB-51.32-M77: pliability; tensile strength; water vapour permeance, and water ponding.

14.3 The following tests have been carried out on Thermakraft Cover-Up™ by BRANZ: flammability in accordance with AS 1530.2, and tensile tear strength before and after two months of natural UV aging.

Other Investigations

15.1 A durability opinion was given by BRANZ technical experts.

15.2 Site inspections were carried out by BRANZ to assess methods used for the installation of Thermakraft Cover-Up™, and to examine completed installations.

15.3 The marketer's Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

16.1 The manufacture of Thermakraft Cover-Up™ has not been examined by BRANZ, but details of the methods adopted for quality control and the quality of the materials used, have been obtained.

16.2 The quality management system of the wrap manufacturer, Fabrene Corporation, has been assessed and registered as meeting the requirements of ISO 9001: 2000 by TUV ESSEN, Registration Number 02-1308.

16.3 The quality of supply to the market is the responsibility of Thermakraft Industries (NZ) Ltd.

16.4 Building designers are responsible for the design of the building, and for the incorporation of the wall wrap into their design in accordance with the instructions Thermakraft Industries (NZ) Ltd.

16.5 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Industries (NZ) Ltd.

Sources of Information

- AS 1530.2 - 1993 Test for flammability of materials.
- AS/NZS 1301.421s: 1988 Determination of the pH value of aqueous extracts of paper, board and pulp - cold extraction method.
- AS/NZS 4200.1: 1994 Pliable building membranes and underlays - materials.
- AS/NZS 4201.3: 1994 Pliable building membranes and underlays - Methods of test - Shrinkage.
- BS 6538-3: 1987 Method for determination of air permeance using the Garley apparatus.
- CAN/CGSB-51.32-M77 Technical Guide for Sheathing, Membrane, Breather-Type.
- NZS 3604: 1999 Timber Framed Buildings.
- Compliance Document for the 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 Building Regulations 1992, up to, and including October 2004 Amendment.



BRANZ

In the opinion of BRANZ, Thermakraft Cover-Up™ Breather-Type Building Wrap 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, Thermakraft Industries (NZ) 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: 13 December 2005