



## BRANZ Appraised

Appraisal No. 914 [2016]

## THERMAKRAFT 290 INTELLIGENT HOUSE WRAP

Appraisal No. 914 [2016]

Amended 18 August 2017



### BRANZ Appraisals

Technical Assessments of products for building and construction.



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## Product

- 1.1 Thermakraft 290 Intelligent House Wrap is a flexible synthetic wall sarking for use under masonry veneer and other direct fixed and cavity-based wall cladding on timber and steel framed buildings. The product consists of a micro-porous water resistant film ultrasonically bonded to a layer of non-woven spun-bonded polyolefin and is coloured white.

## Scope

- 2.1 Thermakraft 290 Intelligent House Wrap has been appraised for use as a wall sarking on buildings within the following scope:
  - Class 1 and Class 10 buildings; and,
  - Class 2 to Class 9 buildings subject to specific weathertightness design; and,
  - constructed with timber or steel framing in accordance with the BCA; and,
  - with absorbent and non-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 the BCA; and,
  - situated in non-cyclonic wind zones up to, and including N3.
- 2.2 Building designers are responsible for the building design and for the incorporation of Thermakraft 290 Intelligent House Wrap into their design in accordance with the declared properties and the instructions of Thermakraft Pty Limited.

## Building Regulations

### National Construction Code Series [NCC] Building Code of Australia [BCA]

- 3.1 In the opinion of BRANZ, Thermakraft 290 Intelligent House Wrap, if used, designed, installed and maintained in accordance with the statements and conditions of this Appraisal, will contribute to meeting the following provisions of the BCA:

#### BCA Volume 1 - Class 2 to Class 9 Buildings

**Part F1 - DAMP AND WEATHERPROOFING:** Performance Requirement FP1.4. Thermakraft 290 Intelligent House Wrap will contribute to meeting this requirement. See Paragraphs 13.1 and 13.2.

#### BCA Volume 2 - Class 1 and Class 10 Buildings

**Part 2.2 DAMP AND WEATHERPROOFING:** Performance Requirement P2.2.2. Thermakraft 290 Intelligent House Wrap will contribute to meeting this requirement. See Paragraphs 13.1 and 13.2.

## Technical Specification

- 4.1 Thermakraft 290 Intelligent House Wrap is a synthetic building sarking for use under wall claddings. The product consists of a micro-porous water resistant film ultrasonically laminated to a layer of non-woven polyolefin. Thermakraft 290 Intelligent House Wrap is coloured white on the top and bottom faces.
- 4.2 The product is supplied in rolls 1.370 m wide x 37.0 m and 73.0 m long, and 2.740 m wide x 18 m and 36.5 m long. The product is printed with the Thermakraft 290 logo repeated along the length of the roll. The rolls are wrapped in clear polythene film.

### Accessories

- 4.3 Accessories used with Thermakraft 290 Intelligent House Wrap which are supplied by the installer are:
- **Fixings** – staples, clouts, screws or proprietary sarking fixings, or other temporary fixings to attach the wall sarking to the framing.
  - **Wall sarking support** – polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens where required to support the wall sarking [refer to Paragraph 7.5].

## 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 listing on the BRANZ website for details of the current Technical Literature for Thermakraft 290 Intelligent House Wrap. 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

- 7.1 Thermakraft 290 Intelligent House Wrap is intended for use as an alternative to conventional wall sarkings which are fixed over timber or steel framed walls in order to limit the entry of wind into building cavities, and to act as a secondary barrier to wind-driven rain. Refer to Table 1 for material properties.
- 7.2 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.
- 7.3 Thermakraft 290 Intelligent House Wrap must not be exposed to the weather or ultra violet light for a total of more than 42 days before being covered by the wall cladding.
- 7.4 Thermakraft 290 Intelligent House Wrap is deemed to be a satisfactory sarking material for the waterproofing of walls in accordance with BCA Volume 1, Paragraph F1.6.
- 7.5 In masonry veneer installations and wall cladding installations over a cavity, where the studs or cavity battens are installed at greater than 450 mm centres, the sarking must be supported to prevent it bulging into the cavity space when bulk insulation is installed in the wall frame cavity.

**Table 1: Thermakraft 290 Material Properties**

AS/NZS 4200.1 Properties	Property Performance Requirement	Actual Property Performance	AS/NZS 4200.1 Classification
Shrinkage	≤ 0.5%	Pass	Not Applicable
Absorbency	≥ 100 g/m <sup>2</sup>	Pass	High
Vapour Barrier	≤ 7 MN s/g	Pass	Low
Water Barrier	≥ 100 mm	Pass	High
Emittance			Non-reflective
Edge Tear and Tensile Strength		<b>Edge tear [Average]:</b> Machine direction = 187 N Cross direction = 99.6 N <b>Tensile strength [Average]:</b> Machine direction = 3.9 kN/m Cross direction = 2.0 kN/m	Extra Heavy Extra Heavy Unclassified Unclassified
Flammability	≤ 5	Pass	Low

### Structure

8.1 Thermakraft 290 Intelligent House Wrap is suitable for use on buildings situated in non-cyclonic wind zones up to, and including N3.

### Durability

#### Serviceable Life

9.1 Provided it is not exposed to the weather or ultra-violet light for a total of more than 42 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, Thermakraft 290 Intelligent House Wrap is expected to have a serviceable life equal to that of the cladding.

### Flammability

10.1 Thermakraft 290 Intelligent House Wrap has an AS 1530 Part 2 flammability index of less than 5 and therefore has a flammability index classification of low in accordance with AS/NZS 4200.1.

### Heating Appliances, Fireplaces, Chimneys and Flues

11.1 Thermakraft 290 Intelligent House Wrap must be separated from fireplaces, heating appliances, flues and chimneys in accordance with the requirements of the BCA for the protection of combustible materials.

### Fire Resistance

#### Bush Fire Zones

12.1 In bushfire prone areas, the building designer is responsible for determining the compliance requirements in accordance with AS 3959.

### Damp and Weatherproofing

13.1 Wall claddings installed over Thermakraft 290 Intelligent House Wrap must meet the performance requirements of the BCA, e.g. Deemed to Satisfy wall claddings covered by the BCA, or wall claddings covered by a valid BRANZ Appraisal.

13.2 Thermakraft 290 Intelligent House Wrap, when installed in accordance with the Technical Literature and this Appraisal will assist in the total cladding systems compliance with the Damp and Weatherproofing performance clauses of the BCA.

## Installation Information

### Installation Skill Level Requirements

- 14.1 Installation must always be carried out in accordance with the Thermakraft 290 Intelligent House Wrap Technical Literature and this Appraisal, by competent tradespersons with an understanding of wall sarking installation.

### Sarking Installation

- 15.1 Thermakraft 290 Intelligent House Wrap must be fixed to all framing members at maximum 300 mm centres with large-head clouts 20 mm long, 6-8 mm staples, self-drilling screws or proprietary sarking fixings. The sarking must be pulled taut over the framing before fixing.
- 15.2 Thermakraft 290 Intelligent House Wrap 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 150 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the sarking. End laps must be made over framing and be no less than 150 mm wide.
- 15.3 The wall sarking should be run over openings and these left covered until windows and doors are ready to be installed. Openings are formed in the sarking by cutting on a 45 degree diagonal from each corner of the penetration. The flaps of the cut sarking must be folded inside the opening and stapled to the penetration framing. Excess sarking may be cut off flush with the internal face of the wall frame.
- 15.4 Where the sarking needs to be supported, polypropylene strap or galvanised wire must be installed horizontally over the sarking at 300 mm centres. Alternatively, 75 mm galvanised wire mesh can be installed over the entire sarking surface.
- 15.5 Thermakraft 290 Intelligent House Wrap can be added as a second layer over window and door joinery head flashings.
- 15.6 When used behind masonry veneer cladding, the brick ties must be fixed to the face of the stud only.
- 15.7 When fixing the product in windy conditions, care must be taken due to the large sail area created by the wide roll widths.
- 15.8 Any damaged areas of Thermakraft 290 Intelligent House Wrap, 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.

### Inspections

- 15.9 The Technical Literature must be referred to during the inspection of Thermakraft 290 Intelligent House Wrap installations.

## Basis of Appraisal

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

### Tests

- 16.1 The following tests have been carried out on Thermakraft 290 Intelligent House Wrap in accordance with AS/NZS 4200.1: tensile strength, edge-tear resistance and resistance to water vapour transmission in accordance with AS/NZS 4200.1, shrinkage in accordance with AS/NZS 4201.3, resistance to water penetration in accordance with AS/NZS 4201.4 and surface water absorbency in accordance with AS/NZS 4201.6. A range of these tests were completed before and after Thermakraft 290 Intelligent House Wrap was exposed to ultra-violet light.
- 16.2 The Flammability Index of Thermakraft 290 Intelligent House Wrap has been evaluated in accordance with AS 1530.2.

### Other Investigations

- 17.1 A durability opinion has been given by BRANZ technical experts.
- 17.2 The practicability of installation of Thermakraft 290 Intelligent House Wrap has been assessed by BRANZ and found to be satisfactory.
- 17.3 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

### Quality

- 18.1 The manufacture of Thermakraft 290 Intelligent House Wrap has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 18.2 The quality of supply to the market is the responsibility of Thermakraft Pty Limited.
- 18.3 Building designers are responsible for the design of the building, and for the incorporation of the wall sarking into their design in accordance with the instructions of Thermakraft Pty Limited.
- 18.4 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Pty Limited.

### Sources of Information

- AS 1530.2 – 1993 Test for flammability of materials.
- AS 3959 – 2009 Construction of buildings in bushfire-prone areas.
- AS/NZS 4200.1: 1994 Pliable building membranes and sarkings – materials.
- AS/NZS 4201.3: 1994 Pliable building membranes and sarkings – Methods of test – Shrinkage.
- AS/NZS 4201.4: 1994 Pliable building membranes and sarkings – Methods of test – Resistance to water penetration.
- AS/NZS 4201.6: 1994 Pliable building membranes and sarkings – Methods of test – Surface water absorbency.
- National Construction Code Series, Building Code of Australia 2016, Australian Building Codes Board.

### Amendments

#### Amendment No. 1, dated 21 June 2017.

This Appraisal has been amended to update the Appraisal Holder.

#### Amendment No. 2, dated 18 August 2017.

This Appraisal has been amended to change the product name.



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28 July 2016

THERMAKRAFT 290 INTELLIGENT  
HOUSE WRAP



In the opinion of BRANZ, **Thermakraft 290 Intelligent House Wrap** 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 **Thermakraft Pty Limited**, 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. **Thermakraft Pty Limited:**
  - 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 **Thermakraft Pty Limited**.
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 **Thermakraft Pty Limited** or any third party.

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For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue:

28 July 2016